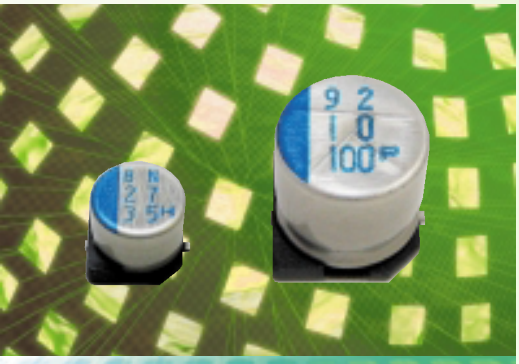
SUNCON

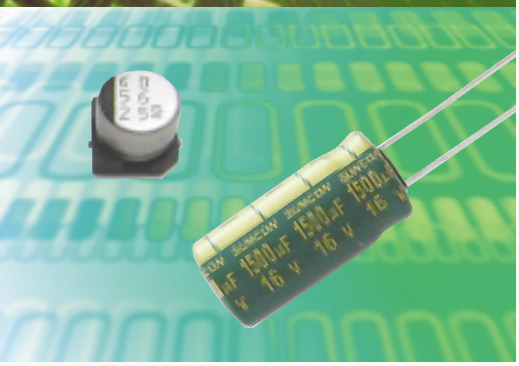
Capacitors General Catalog

2011-5



Aluminum Electrolytic Capacitors with
Hybrid Conductive Polymer

EP-cap



Aluminum Electrolytic Capacitors

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Aluminum ElectrolyticCapacitors with Hybrid Conductive Polymer

EP-cap

Aluminum Electrolytic Capacitors

PRECAUTIONS

- The contents of this catalog are current as of May 2011. They may change without prior notice. When ordering products, please be sure to request a delivery specifications form and read it carefully.
- Products described herein are not intended for applications requiring extremely high reliability (for example, those in which extensive human injury or property damage may occur such as with life-support systems or aircraft control systems). For such applications, consult our sales department.
- The performance, characteristics, and features of the products described in this catalog are based on the products working alone under prescribed conditions. Data listed here is not intended as a guarantee of performance when working as part of any other product or device. In order to detect problems and situations that cannot be predicted beforehand by evaluation of supplied data, please always perform necessary performance evaluations with these devices as part of the product that they will be used in.
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- Please understand that we cannot be held responsible for any damages to the industrial properties of any third party that arise from the use or application of the products listed in this catalog, with the exception of those items directly related to method of construction.

ISO Certificates

ISO/TS 16949

Izumo Plant・Head office
Certificate Number CERT-11075-2006-AQ-HOU-IATF (IATF 0080981)

Masuda Plant・Head office
Certificate Number CERT-11075CC1-2006-AQ-HOU-IATF (IATF 0080982)

ISO 9001

Izumo Plant・Masuda Plant・Head office Certificate Number 01571-2001-AQ-KOB-JAB

ISO 14001

Izumo Plant・Masuda Plant Certificate Number EMS 03 029

INDEX

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About the electronic part capacitor

Product Line-up Table ····· 2

Series System Diagram ····· 4

Guidelines and Precautions for Use ····· 6

Environmental Consideration / Surface Mount Type Recommended Land Pattern ····· 10

Soldering Condition / Recommended Reflow Condition ····· 11

Packing Specifications ····· 12

Ripple Current Frequency Coefficient ····· 15

Anti-vibration Structure ····· 16

Aluminum Electrolytic Capacitors with Hybrid Conductive Polymer ***EP-cap*** ····· 17

Aluminum Electrolytic Capacitors ····· 27

Series integration

On new order, please order from Integrated series.

Discontinued series	Integrated series	Feature
CE-EX	**HVA**	Hybrid Conductive Polymer, Super Low ESR
CE-GS	**CE-GA**	Surface mount type, 5.4mm height, low impedance
CE-GX	**CE-AX**	Surface mount type, low impedance, high-reliability
CE-FC	**CE-FD**	Surface mount type, 4.5mm height
CE-PX	**CE-PC**	Surface mount type, 125℃ Long life
MV-AZ	**ME-CZ**	105℃ Standard
MV(ME)-FA	**ME-CZ**	105℃ Standard
MV-EG,GX	**ME-AX**	105℃ low impedance, high-reliability
MV-HW	**ME-HC**	85℃ Standard
MV-HPS	**ME-HPC**	85℃ Miniature, standard (mid.&high voltage)
MV-NPD,NPDW	**ME-HWN**	85℃ Bi-polar (miniature, standard)

Product Line-up Table of Aluminum Electrolytic Capacitors with Hybrid Conductive Polymer

Classification		Series	Page	Features	Small & Thin type	Low ESR	Long Life	Solvent Proof	Category Temperature Range(℃)	Rated Voltage Range(V.DC)	Rated Capacitance Range(μF)	External Appearance	Marking Color
S.M.T		HVA	22	Super Low ESR		●	●	●	−55 to +105	6.3 to 16	10 to 1000	—	Blue
		HVB	★	125℃		●	●	●	−55 to +125	6.3 to 16	22 to 560	—	Blue
		UP GRADE HVH	23	Super Low ESR	●	●	●	●	−55 to +105	25 to 125	6.8 to 330	—	Blue
		UP GRADE HVP	24	125℃		●	●	●	−55 to +125	25 to 125	6.8 to 330	—	Blue
		UP GRADE HVT	25	135℃		●	●	●	−55 to +135	25 to 63	10 to 330	—	Blue
Radial Lead Type		NEW HEA	★	Super Low ESR		●	●	●	−55 to +105	6.3 to 16	47 to 1000	—	Blue
		NEW HEH	26	Super Low ESR		●	●	●	−55 to +105	25 to 100	10 to 330	—	Blue

Product Line-up Table of Surface Mount Type

Classification		Series	Page	Features	Small & Thin type	Low Impedance	Long Life	Solvent Proof	Category Temperature Range(℃)	Rated Voltage Range(V.DC)	Rated Capacitance Range(μF)	External Appearance	Marking Color
Surface Mount Type		CE-BJ	28	Super Low Profile 3.25mm Height	●			●	−40 to +85	4 to 50	10 to 82	—	Black
		CE-BE	29	Super Low Profile 3.9mm Height	●			●	−40 to +85	4 to 50	1.0 to 180	—	Black
		CE-BD	30	Low Profile 4.5mm Height	●			●	−40 to +85	4 to 50	0.47 to 220	—	Black
		CE-BSS	31	Miniature, Standard	●			●	−40 to +85	6.3 to 50	4.7 to 220	—	Black
		CE-BS	32	Standard				●	−40 to +85	4 to 100	0.47 to 6800	—	Black
		CE-C	★	φ3mm Version	●			●	−40 to +85	6.3 to 50	1.0 to 22	—	Black
		CE-FE	34	3.9mm Height Temperature of Wide Range	●			●	−40 to +105	6.3 to 50	1.0 to 100	—	Black
		CE-FD	35	4.5mm Height Temperature of Wide Range	●			●	−40 to +105	6.3 to 50	0.47 to 100	—	Black
		CE-LD	36	4.5mm Height, Long Life	●		●	●	−40 to +105	6.3 to 50	0.47 to 100	—	Black
		CE-FSS	37	105℃ Miniature, High Capacitance	●			●	−40 to +105	6.3 to 50	4.7 to 220	—	Black
		NEW CE-FU	38	High Temperature Reflow Soldering	●			●	−55 to +105	6.3 to 50	2.2 to 100	—	Black
		UP GRADE CE-FS	39	105℃, Standard					−40 to +105	160 to 400	2.2 to 82	—	Black
			40					●	−55 to +105	6.3 to 63	0.47 to 10000		
								●	−40 to +105	100	1.0 to 220		
		CE-FH	42	Long Life			●	●	−40 to +105	6.3 to 50	1.0 to 4700	—	Black
		CE-GA	43	5.4mm Height Super Low Impedance		●		●	−55 to +105	6.3 to 63	1.0 to 220	—	Black
		CE-AX	44	Low Impedance		●		●	−55 to +105	6.3 to 50	4.7 to 6800	—	Black
		CE-KX	46	Super Low Impedance		●		●	−55 to +105	6.3 to 100	3.3 to 6800	—	Black
		UP GRADE CE-LX	48	Low Impedance, Long Life		●		●	−55 to +105	6.3 to 100	4.7 to 10000	—	Black
		CE-LS	50	Low Impedance, Long Life		●	●	●	−40 to +105	6.3 to 50	10 to 330	—	Black
		CE-LH	51	Long Life			●	●	−40 to +105	6.3 to 50	1.0 to 220	—	Black
			52				●		−40 to +105	160 to 400	2.2 to 82		
		CE-LL	53	Low Impedance, Long Life		●	●	●	−25 to +105	6.3 to 50	10 to 1000	—	Black
		CE-PC	54	125℃, Long Life			●	●	−55 to +125	6.3 to 100	1.0 to 4700	—	Black
		CE-PX	★	125℃			●	●	−40 to +125	6.3 to 50	33 to 1500	—	Black
		UP GRADE CE-PH	56	125℃ Low ESR, High Capacitance		●	●	●	−40 to +125	16 to 35	100 to 3300	—	Black
		CE-NP	57	Bi-polar				●	−40 to +85	6.3 to 50	1.0 to 47	—	Black
		CE-FN	58	Bi-polar Temperature of Wide Range				●	−55 to +105	6.3 to 63	1.0 to 47	—	Black

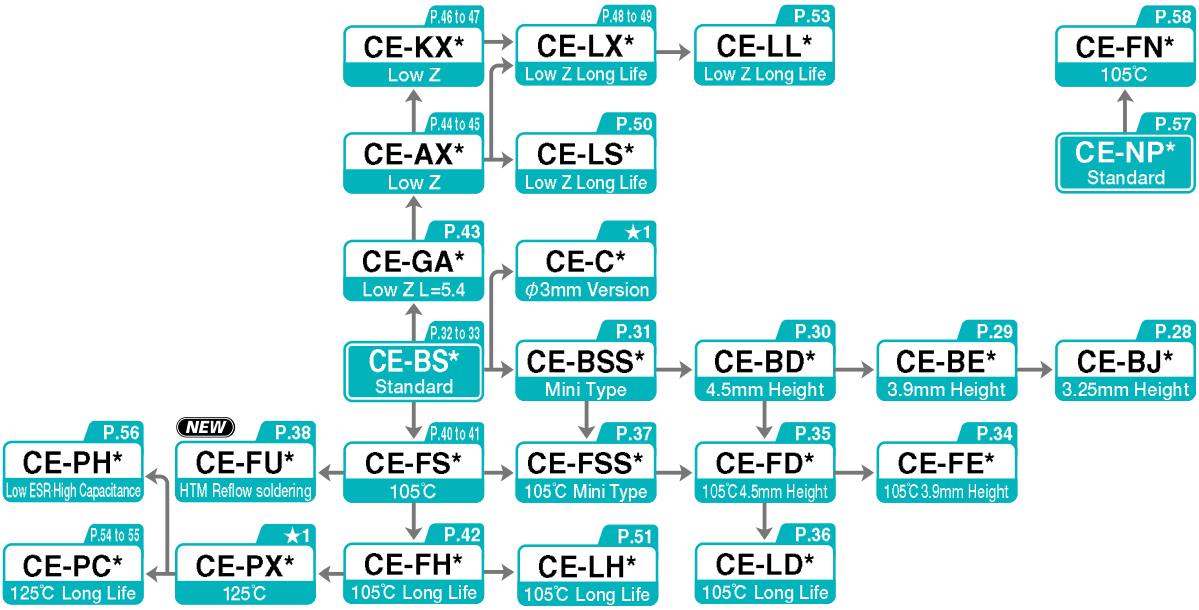
Product Line-up Table of Radial Lead Type

Classification		Series	Page	Features	Small & Thin type	Low Impedance	Long Life	Solvent Proof	Category Temperature Range(℃)	Rated Voltage Range(V.DC)	Rated Capacitance Range(μF)	External Appearance	Marking Color
Radial Lead Type		ME-UW	★	5mm Height	●			●	−40 to +85	4 to 50	10 to 330	Black	White
		ME-SWB	59	7mm Height	●			●	−40 to +85	4 to 63	10 to 470	Black	White
		ME-UZ	60	5mm Height, Temperature of Wide Range	●			●	−55 to +105	6.3 to 50	10 to 220	Green	White
		ME-SZ	60	7mm Height, Temperature of Wide Range	●			●	−55 to +105	6.3 to 50	1.0 to 330	Green	White
		ME-UAX	61	5mm Height, Low Impedance	●	●		●	−55 to +105	6.3 to 35	33 to 220	Green	Gold
		ME-SAX	61	7mm Height, Low Impedance	●	●		●	−55 to +105	6.3 to 35	4.7 to 330	Green	Gold
		ME-LS	62	Long Life, High-Reliability			●	●	−40 to +105	6.3 to 50	1.0 to 1000	Black	Silver
		ME-HC	63	Standard	●			●	−40 to +85	6.3 to 100	1.0 to 15000	Black	White
		ME-CZ	64	Miniature, Standard Temperature of Wide Range	●			●	−55 to +105	6.3 to 100	2.2 to 15000	Green	White
		ME-CA	66	Miniature, Standard Low Impedance	●	●		●	−55 to +105	6.3 to 50	2.2 to 15000	Green	Silver
		ME-CX	68	Miniature, Low Impedance	●	●		●	−55 to +105	6.3 to 35	47 to 15000	Green	Gold
		ME-AX	70	Low Impedance, Long Life		●	●	●	−55 to +105 −40 to +105	6.3 to 63 100	4.7 to 12000 5.6 to 470	Green	Gold
		ME-WX	72	Low Impedance · High Ripple		●			−40 to +105	6.3 to 50	22 to 6800	Green	Gold
		UP GRADE ME-WA	74	Low Impedance · High Ripple Long Life		●	●		−40 to +105	6.3 to 50	100 to 8200	Black	Gold
		ME-WL	76	Low Impedance Long Life	●	●	●		−40 to +105	6.3 to 63	1.0 to 330	Green	Silver
		MB-UWG	★	5mm Height,Low ESR	●	●			−40 to +105	6.3 to 25	39 to 150	—	Black
		ME-SWG	77	7mm Height,Low ESR	●	●			−40 to +105	6.3 to 35	22 to 330	Black	Gold
		ME-WG	78	Super Low ESR		●			−40 to +105	6.3 to 25	220 to 3300	Green	Gold
		ME-FZ	★	Extra Long Life, High Performance		●	●	●	−55 to +105	10 to 50	10 to 4700	Black	Silver
		ME-PX	79 ★	125℃,High Performance		●	● ●	●	−55 to +125 −40 to +125 −25 to +125	10 to 100 160 to 250 350 to 400	1.0 to 4700 10 to 150 4.7 to 47	Clear Green	Black
		ME-HPC	80	Miniature, Standard (Mid. & High Voltage)	●				−40 to +85 −25 to +85	160 to 250 350 to 450	0.47 to 220 0.47 to 100	Black	White
		ME-HPD	80	Miniature, Low Profile (Mid. & High Voltage)	●				−40 to +85 −25 to +85	160 to 250 350 to 450	47 to 220 10 to 68	Black	White
		ME-FC	81	Miniature, Guaranteed 105℃ (Mid. & High Voltage)	●				−40 to +105 −25 to +105	160 to 400 450	0.47 to 220 1.0 to 47	Black	White
		ME-FD	81	105℃, Miniature, Low Profile (Mid. & High Voltage)	●				−40 to +105 −25 to +105	160 to 400 450	22 to 220 10 to 33	Black	White
		ME-FAZ	82	High Ripple(Mid.Voltage)		●			−40 to +105	160 to 250	1.0 to 220	Black	White
		ME-FH	83	105°C, Long Life (Mid. & High Voltage)			●		−40 to +105 −25 to +105	160 to 400 450	6.8 to 220 6.8 to 68	Black	White
		ME-HLB	★	Low Leakage Current					−40 to +85	16 to 50	2.2 to 100	Blue	Black
		ME-HT	★	Timer Circuit Use					−40 to +85	10 to 50	22 to 2200	Green	Black
		ME-SWN	84	7mm Height,Bi-polar	●			●	−40 to +85	6.3 to 50	1.0 to 47	Black	White
		ME-HWN	85	Miniature, Standard,Bi-polar	●			●	−40 to +85	6.3 to 100	2.2 to 2200	Black	White

Please refer to http://www.sunelec.co.jp for the information in columns where★marking is indicated in a page row.

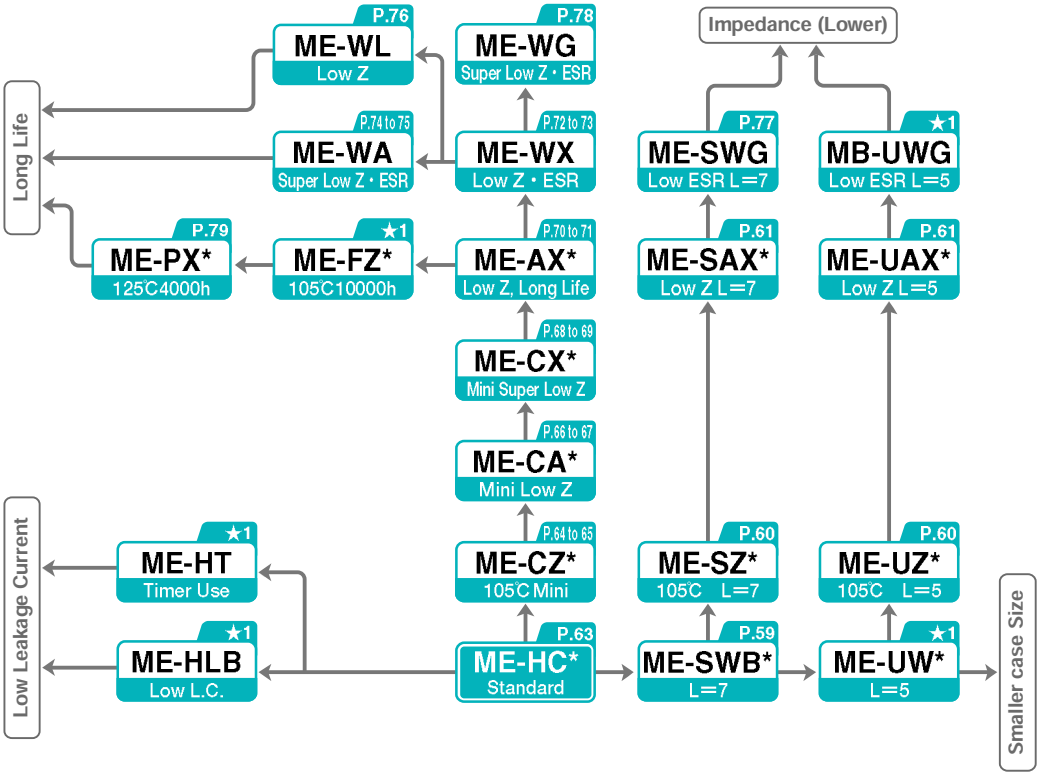
System Diagram

SURFACE MOUNT TYPE (LOW VOLTAGE)

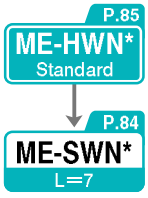


BI-POLAR

RADIAL LEAD TYPE (LOW VOLTAGE)



BI-POLAR

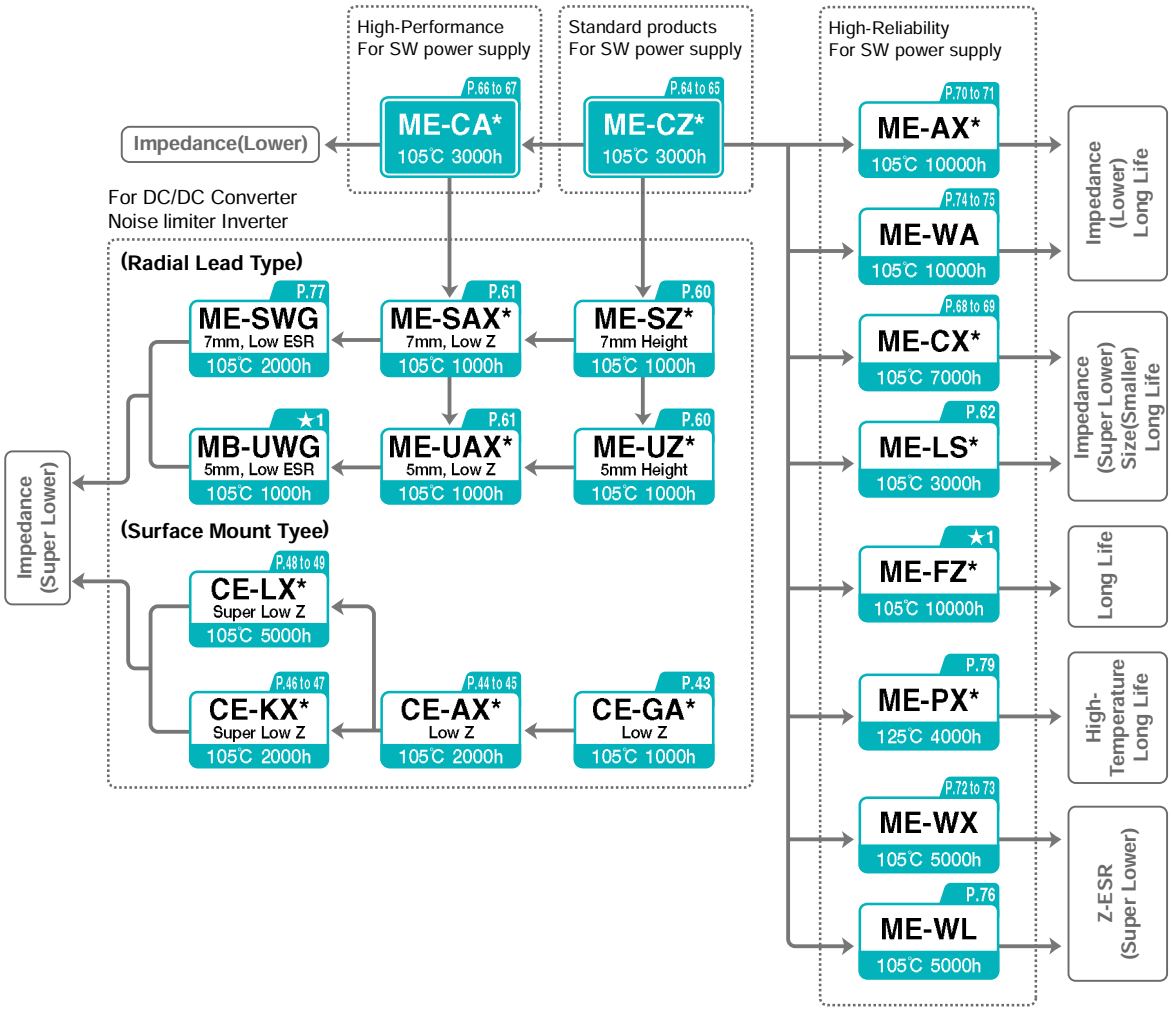


Please refer to http://www.sunelec.co.jp for the information in columns where ★1 marking is indicated in a page row.

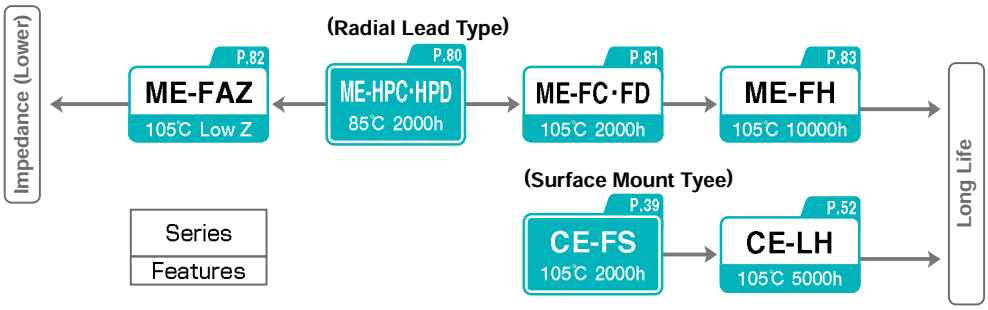
*solvent proof

System Diagram for Power supply

FOR SECONDARY SMOOTHING CIRCUIT



FOR PRIMARY SMOOTHING CIRCUIT (MID. & HIGH VOLTAGE)



Please observe the following guidelines when using aluminum electrolytic capacitors. (Hereafter "Capacitors")

Circuit Diagram

1) Please use according to the values noted in the catalogue or the specification sheet when considering the application and use of the capacitors.

2) Please use according to the temperature range and rated ripple current as noted in the catalogue or the specification sheet.
   a) Life time of electrolytic capacitors depends on the ambient temperature.
      Generally the life time would be doubled as the temperature decreased by 10 degrees.
      It is recommended that capacitors be used at a lower temperature than that of the maximum warranty as possible.
   b) Capacitors should be used at current values within the rated ripple current.
      If capacitor bears excessive ripple current, heat generation acutely increases, therefore decreasing capacitance or even damage the capacitor. Please refer to the rated ripple current of each series.

3) Please choose the capacitor that matches the lifetime of the intended circuit design.

4) Regular capacitors have polarity. If electrical current is applied in the opposite direction to a capacitors polarity, the result could be a short circuit or destruction of the capacitor.
   Bi-polar capacitors should be used in circuit where polarity is occasionally reversed, or where polarity is unknown. (except AC)

5) In circuits where frequent charge and discharge are common, capacitance decrease as the internal overheat causes damage to capacitors. In such circuits, please use charge and discharge proof capacitors.

6) Do not apply DC-voltage exceeding rated voltage of the capacitors.

7) The exterior sleeve of a capacitor is not guaranteed as an insulator.
   Do not use the capacitor where insulation is required.
   The aluminum case of a capacitor is not insulated from a cathode lead wire.

8) Do not use in the following environments.
   a) In the environments of splashed water, salt water, and oil on the capacitors.
   b) In the presence of poisonous gas. (Hydrogen sulfide, Sulfurous acid, Chlorine, Ammonia, etc)
   c) In the environments of applied ozone, ultraviolet rays and radial rays.
   d) Where vibration or shock exceeds the allowable values as noted in the catalogue or specification sheet.

9) Please design after confirming the following points concerning the application and use.
   a) Please match the leads space with the holes space of the circuit board.
   b) It is recommended at least 3mm of space around the pressure relief vent.
   c) Avoid placing to printed wire above the pressure relief vent.
   d) Make a hole on a circuit board if the top of an aluminum case is positioned below the circuit board at short distance.
      The hole is to make the passage of gas from a safety vent when the vent opens.

10) Avoid having the printed wire under the capacitor.

11) Avoid placing other parts near or on the opposite side of the circuit board from the capacitor which gives off heat.

12) As for the land pattern of surface mount type capacitors, please refer to the values noted in the catalogue or specification sheet.

13) Please design after confirming these other following points.
a) The performance of the capacitor will vary as the temperature or frequency varies.
b) If capacitor is mounted to the double sided circuit board, avoid placing through holes under capacitors.
c) Please consider the balance of the current when using two or more capacitors in parallel.
d) Please consider the balance of the voltage when using two or more capacitors in series.

Mounting

1) Do not use a capacitor that has been inserted and connected to a current.
Except for capacitors that have been removed to check the electrical properties during periodical checks, do not reuse.

2) In case the capacitor has re-striking-voltage, please discharge through 1kΩ resistor.

3) In case the leakage current increases with long term storage, please apply the rated voltage to the capacitor for 30 minutes through 1kΩ of protective series resistors.

4) Please mount capacitor after confirmation of following rates : rated capacitance, rated voltage.

5) Please mount after confirming the polarity of capacitor.

6) Do not drop or use dropped pieces.

7) Be careful not to deform the capacitor during installation.

8) Be careful not to puncture the aluminum case of a capacitor with excessive impact.

9) When mounting capacitors to the circuit board, please use capacitors that the lead space equal the hole space of the circuit board.

10) When mounting capacitors with automatic inserting machines, do not apply excessive force to the lead wire or terminals.

11) When mounting capacitors with automatic inserting machines, do not apply excessive force to the body of capacitors.

12) Please confirm the following points when you solder with a soldering iron.
a) Follow the criteria of soldering condtion including time and temperature noted in a catalogue or a specification.
b) Process the shape of lead wires before soldering when the lead wire space of a capacitor does not match the through hole space of a circuit board,Avoid the stress to the body of the capacitor.
c) Melt solder enoght to rework a capacitor with a soldering iron after removing it from a circuit board.
Insufficence of melting solder causes physical stree to lead wires.
d) Do not touch the body of a capacitor with the tip of a soldering iron.

13) Please confirm the following points when you performe flow soldering.
a) Do not soak a capacitor in melt solder. Perform flow soldering only on the opposite side of a circuit board where no capacitor is placed.
b) Follow the instruction in a catalogue or a specification with regard to the soldering condition; preheat, soldering temperature, and soaking time.
c) Avoid the attachment of flux to the body of a capacitor except lead wires.
d) Do not locate a capacitor where metal lead wires of the other components conatct with the capacitor.

14) Please confirm the following points when you performe reflow soldering.
a) Follow the specifications for pre-heat, reflow time and peak temperature as noted in the catalogue or specification sheet.
b) The absorption coefficient of infrared rays depends on the color and material of a capacitor.
Avoid heating too much to a capacitor by an infrared heater.

15) After mounting the circuit board, do not apply the following mechanical stress.
a) Do not apply excessive force to the lead wires or terminals.
b) Do not tilt or bring down the capacitor.
c) Do not pick up circuit board by holding the mounted capacitor.
d) Do not jolt the capacitor. When stacking circuit boards, make sure the capacitor does not come into contact with any other parts.

16) In principle,aluminum electrolytic capacitors are not designed to withstand to the cleaning solvent.
If cleaning of a board is necessary,select capacitor designed to withstand cleaning process, and observe the cleaning conditions specified in the catalogue or in the manufactures specification.
Do not clean the capacitors using solvent, unless so specified in catalogue or manufactures spscification.
Use of one of the following chemicals for cleaning may damage the capacitor.
a) Solvent containing halogen ions : Damage due to electrolysis of elements
b) Alkaline solvent : Corrosion of the aluminum case
c) Xylene : Degradation of sealing rubber
d) Acetone : Disappear of markings.
e) Terpene,petro-based solvents : Degradation of sealing rubber

17) When cleaning solvent proof capacitors, please confirm the following points.
a) Please manage the pollution of the cleaning solvent. (conductivity, pH, specific gravity, content of water, etc)
b) Do not keep in the environments of cleaning solvents or airtight containers, after cleaning the capacitors.
Please dry the circuit board and capacitors in a hot blast stove within upper category temperature or less.

18) When using polymer adhesives, select adhesives without halogenated solvents, nor chloroprene.

19) Please confirm the following when using coating agents and polymer adhesives.
a) When adhesion or coating is performed after cleaning, air dry should be made immediately remove cleaning solvent between capacitors and circuit board.
b) Avoid the treatment that cover the seal of the capacitor, such as coating agents and use of polymer adhesive.

During operation or use

1) Do not directly touch the capacitor.

2) Do not short two lead wires with any conductive material.
Do not spray acid or alkali conductive solution to a capacitor.

3) Confirm the following concerning the operating environments.
a) In the environments of splashed water, salt water, and oil on the capacitors.
b) Where a capacitor is exposed to direct sunshine.
c) In the environments of applied ozone, ultraviolet rays and radial rays.
d) Where vibration or shock exceeds the allowable values as noted in the catalogue or specification sheet.

Maintenance • Inspection

1) For industrial use, please periodically check the capacitor.

2) When checking, inspect the following points.
a) Outside appearance.
b) Electrical performance. (Leakage current, Capacitance, Tangent of loss angle, etc)

In case a problem occurs

1) While using the application, if you see gas, turn off the main power supply to the set or remove the plug from the outlet.

2) When working with a pressure relief vent, high temperature gas spouts out, therefore, do not bring the face close to the capacitor.

3) In case spouted gas got into the eye, immediately wash with the water.
In case you breath spouted gas, immediately rinse out your mouth.

Storage conditions

1) Do not store at high temperatures or in high humidity. Please store indoors between 5℃ and 35℃ at 75% relative humidity or below.Product is safekeeping for less than 1 year after shipment.

2) Do not store where it can come into contact with water, oil, or salt water.

3) Do not store in an environment with poisonous gas. (Hydrogen sulfide, Sulfurous acid, Chlorine, Ammonia, etc)

4) Do not store in an environment that applys ozone, ultraviolet rays, radial rays.

Scrap of capacitors

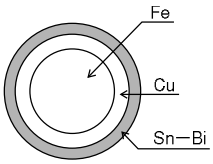
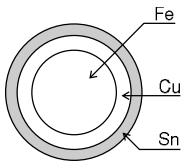
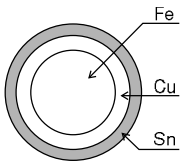
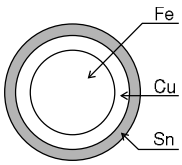
Please follow these guidelines when scrapping the capacitors.
a) Burn after putting a hole in the capacitor or crush the capacitor.
b) If you do not burn it, please arrange for a professional waste management firm to bury or use other method to scrap.

This guide to use aluminum electrolytic capacitors conform to technical report EIAJ RCR-2367B "Guideline of notabilia for fixed aluminum electrolytic capacitors for use in electronic equipment".
Please refer to this technical report for additional details.

We promote the activities which are considered for ecology.

The environmental products are available with Pb-free products which don't include Pb in terminals of main body and PVC-free products which don't include exterior materials. Please contact us about the specification etc.

■ Environmental Products (Compliance of RoHS Directive)

	Surface Mount Type Aluminum Electrolytic Capacitors		Radial Lead Type Aluminum Electrolytic Capacitors	
Type code	CE, HV★1	CE_T	ME	MB, HE_T
Kind of plating	(φ3 to φ12.5) 	(φ16, φ18) 		
Model No. (example)	10CE100BS (100μF/10V)	10CE4700BST (4700μF/10V)	10ME100AX (100μF/10V)	10MB100UWG (100μF/10V)
Sleeve	No used	No used	PET	No used
Moisture Sensitivity Level (MSL)★2	Not applicable No need dry package	Not applicable No need dry package	Not applicable No need dry package	Not applicable No need dry package

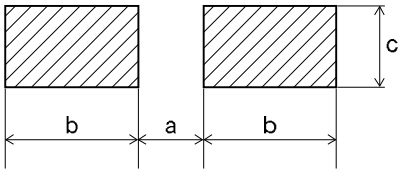
★1 Sn plating terminal of Surface Mount Type : "CE_T", "HV_T" (★2 Conform to IPC/JEDEC J-STD-020C)

Regarding compliance to European REACH Regulation.

According to the content of RIP3.8TGD (Technical Guidance Document) which is published on 26 May 2008, our electronic components are "articles without any intended releas". Therefore they are not applicable for "Registration" for European REACH Regulation Article 7 (1).

Surface Mount Type Recommended Land Pattern

●Land pattern



(Unit:mm)

Size	a	b	c
φ3	0.8	2.2	1.7
φ4	1.0	2.6	1.8
φ5	1.4	3.0	1.8
φ6.3	1.8	3.6	1.8
φ8	2.8	4.1	2.1
φ10	4.3	4.4	2.5
φ12.5	4.3	5.8	2.5
φ16	6.6	6.5	5.0
φ18	6.6	7.7	5.0

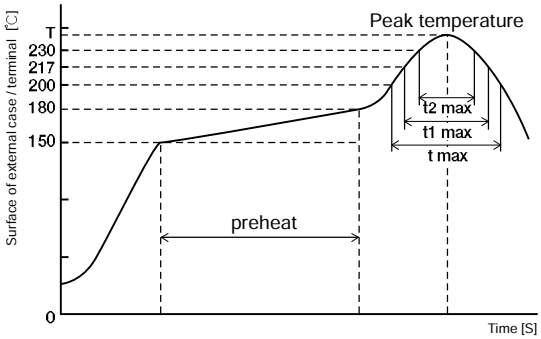
When using large surface mount capacitor, please design possibly larger land pattern area than the recommended pattern dimension in order to increase vibration resistance and avoid to falling off a circuit board.

Soldering Condition

- Soldering with a soldering iron - within 350℃×3 seconds unless otherwise specified in the spec.
- Flow soldering - within 260℃×10 seconds unless otherwise specified in the spec.
  (Do not apply flow soldering to SMD type.)
- Thermal curing over - ambient temperature within 150℃×2 minutes.

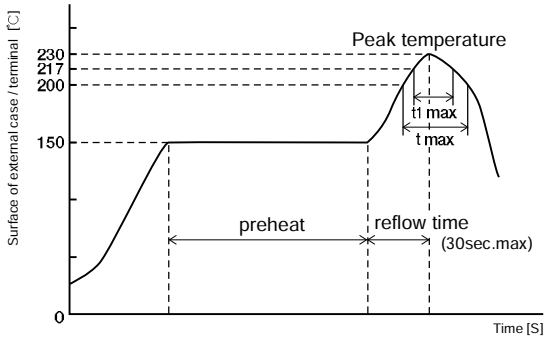
Recommended Reflow Condition

●Profile 1
AIR reflow and IR reflow



Preheat ; 150℃ to 180℃, Within 120sec.

●Profile 2
AIR reflow and IR reflow



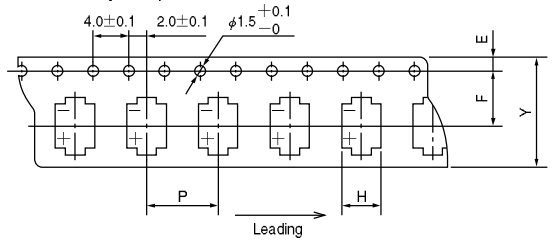
Preheat ; 150℃, Within 120sec.

Series	Voltage (V)	Size	Time for more than 200℃ (t)	Time for more than 217℃ (t1)	Time for more than 230℃ (t2)	Peak temperature (Within 5sec.)	Profile
CE-BSS, CE-BS, CE-C CE-FSS, CE-FS, CE-FH CE-GA, CE-AX, CE-KX CE-LH, CE-LL, CE-PX CE-NP, CE-FN	4 to 63	φ3 to φ6.3	Within 70sec.	Within 60sec.	Within 40sec.	250℃	1
		φ8	Within 60sec.	Within 50sec.	Within 30sec.	245℃	1
		φ10, φ12.5	Within 50sec.	Within 40sec.	Within 20sec.	240℃	1
		φ16, φ18	Within 50sec.	Within 30sec.	Within 15sec.	235℃	1
	80 to 100	φ4 to φ6.3	Within 60sec.	Within 50sec.	Within 40sec.	250℃	1
		φ8	Within 60sec.	Within 40sec.	Within 30sec.	240℃	1
		φ10	Within 50sec.	Within 30sec.	Within 20sec.	240℃	1
		φ12.5	Within 50sec.	Within 30sec.	Within 20sec.	235℃	1
		φ16, φ18	Within 45sec.	Within 20sec.	Within 10sec.	235℃	1
	160 to 400	φ8, φ10	Within 50sec.	Within 30sec.	Within 20sec.	240℃	1
		φ12.5	Within 45sec.	Within 20sec.	Within 10sec.	235℃	1
		φ16	Within 30sec.	Within 15sec.	—	230℃	2
CE-FU, CE-LX, CE-LS, CE-PC, CE-PH	6.3 to 50	φ4 to φ8	Within 80sec.	Within 70sec.	Within 40sec.	260℃	1
		φ10×10.2	Within 70sec.	Within 60sec.	Within 40sec.	250℃	1
		φ12.5	Within 60sec.	Within 50sec.	Within 30sec.	245℃	1
		φ10×7.7, φ16, φ18	Within 50sec.	Within 40sec.	Within 20sec.	240℃	1
	63	φ8	Within 60sec.	Within 50sec.	Within 30sec.	245℃	1
		φ10, φ12.5	Within 50sec.	Within 40sec.	Within 20sec.	240℃	1
		φ16, φ18	Within 50sec.	Within 40sec.	Within 15sec.	235℃	1
	80 to 100	φ8	Within 60sec.	Within 50sec.	Within 30sec.	240℃	1
		φ10	Within 50sec.	Within 40sec.	Within 20sec.	240℃	1
		φ12.5	Within 50sec.	Within 40sec.	Within 20sec.	235℃	1
		φ16, φ18	Within 45sec.	Within 30sec.	Within 10sec.	235℃	1
CE-BD, CE-FD, CE-LD	ALL	ALL	Within 60sec.	Within 50sec.	Within 30sec.	245℃	1
CE-BE, CE-FE	ALL	ALL	Within 50sec.	Within 40sec.	Within 20sec.	240℃	1
CE-BJ	ALL	ALL	Within 30sec.	Within 20sec.	—	230℃	2

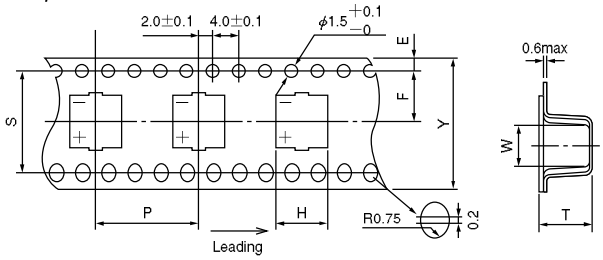
Capacitors can withstand two reflow processes on the above conditions. Second reflow shall be taken after more than one hour natural cooling time and taken after the return to normal temperatures of PCB board and components.
Anti-vibration structure(CA Type) ; Please contact us about the reflow condition.
Please refer to page 21 for Recomended Reflow Condition of EP-cap.

Surface Mount Type Taping Specifications (Unit:mm)

Carrier tape $\phi D \leq 10$



$\phi D \geq 12.5$

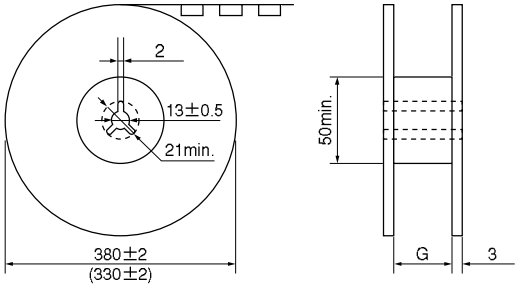


(Unit:mm)

size(φD×L)	Y±0.3	H±0.2	W±0.2	P±0.1	E±0.1	F±0.1	T±0.2	S±0.1
φ3×5.4	12.0	3.7	3.7	8.0	1.75	5.5	5.8	—
φ4×4.5	12.0	4.7	4.7	8.0	1.75	5.5	5.0	—
φ4×5.4	12.0	4.7	4.7	8.0	1.75	5.5	5.8	—
φ4×6.0	12.0	4.7	4.7	8.0	1.75	5.5	6.4	—
φ5×3.9	12.0	5.7	5.7	12.0	1.75	5.5	4.5	—
φ5×4.5	12.0	5.7	5.7	12.0	1.75	5.5	5.0	—
φ5×5.4	12.0	5.7	5.7	12.0	1.75	5.5	5.8	—
φ5×6.0	12.0	5.7	5.7	12.0	1.75	5.5	6.4	—
φ5×7.0	12.0	5.7	5.7	12.0	1.75	5.5	7.1	—
φ6.3×3.25	16.0	7.0	7.0	12.0	1.75	7.5	3.8	—
φ6.3×3.9	16.0	7.0	7.0	12.0	1.75	7.5	4.5	—
φ6.3×4.5	16.0	7.0	7.0	12.0	1.75	7.5	5.1	—
φ6.3×5.4	16.0	7.0	7.0	12.0	1.75	7.5	5.8	—
φ6.3×6.0	16.0	7.0	7.0	12.0	1.75	7.5	6.5	—
φ6.3×7.0	16.0	7.0	7.0	12.0	1.75	7.5	7.5	—
φ6.3×7.7	16.0	7.0	7.0	12.0	1.75	7.5	8.2	—
φ6.3×8.4	16.0	7.0	7.0	12.0	1.75	7.5	9.2	—
φ8×10.2(10.5)	24.0	8.7	8.7	16.0	1.75	11.5	11.1	—
φ10×7.7	24.0	10.7	10.7	16.0	1.75	11.5	8.3	—
φ10×10.2(10.5)	24.0	10.7	10.7	16.0	1.75	11.5	11.2	—
φ10×12.5	24.0	10.7	10.7	16.0	1.75	11.5	13.3	—
φ10×13.5	24.0	10.7	10.7	16.0	1.75	11.5	14.5	—
φ12.5×13.5	32.0	13.2(13.9★)	13.2(13.9★)	24.0	1.75	14.2	14.3(14.7★)	28.4
φ16×16.5	44.0	17.5	17.5	28.0	1.75	20.2	17.3(17.8★)	40.4
φ18×16.5	44.0	19.5	19.5	32.0	1.75	20.2	17.8	40.4

★ Anti-vibration Structure : CA Type

Reel



(Unit:mm)

	G
φ3、φ4、φ5	14
φ6.3	18
φ8、φ10	26
φ12.5	34
φ16、φ18	46

Minimum Packing Quantity

φD×L(mm)	Quantity of 1 Reel(φ380)	Quantity of 1 Reel(φ330)	Quantity of 1 package(Reel)
φ3×5.4	2000	1500 ★1	5
φ4×4.5	2000	1500 ★1	5
φ4×5.4	2000	1500 ★1	5
φ4×6.0	2000	1200 ★1	5
φ5×3.9	—	1000	5
φ5×4.5	—	1000	5
φ5×5.4	—	1000	5
φ5×6.0	1000	800 ★1	5
φ5×7.0	1000	800 ★1	5
φ6.3×3.25,3.9	—	1000	5
φ6.3×4.5	—	1000	5
φ6.3×5.4	—	1000	5
φ6.3×6.0	1000	800 ★1	5
φ6.3×7.0	1000	800 ★1	5
φ6.3×7.7	900	500 ★1	5
φ6.3×8.4	800	500 ★1	5
φ8×10.2(10.5)	500	300 ★1	3
φ10×7.7	500	400 ★1	3
φ10×10.2(10.5)	500	300 ★1	3
φ10×12.5	400	300 ★1	3
φ10×13.5	400	—	3
φ12.5×13.5	250 ★2	—	2
φ16×16.5	200 ★2	—	2
φ18×16.5	175	—	2

★1 Reel code has to be specified after the model number.
Model No. 25CE47BS+E
Reel code

★2 Reel code has to be specified after the model number.
Model No. 25CE2200LXT+D
Reel code

When you place an order, please make sure that order should be integral multiple of the minimum packing unit.

Radial Lead Type Taping Specifications for Automatic Inserting Machines

Fig.1

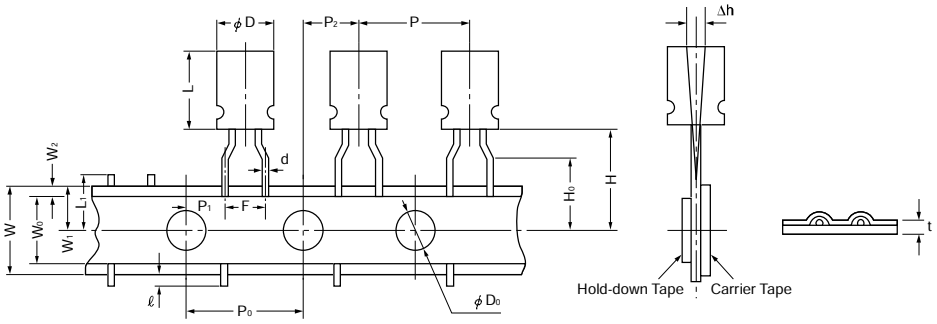


Fig.2

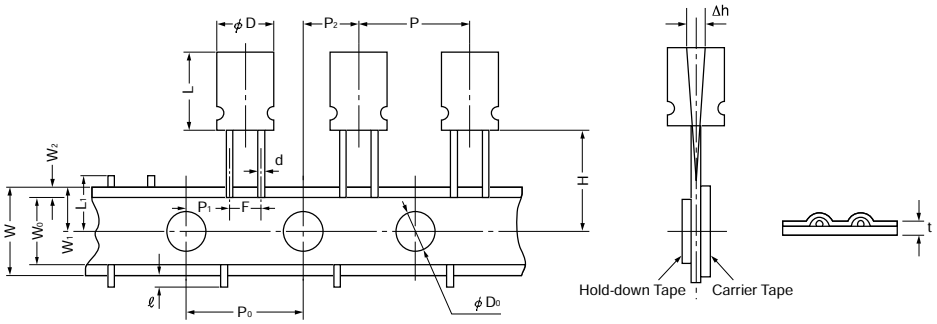
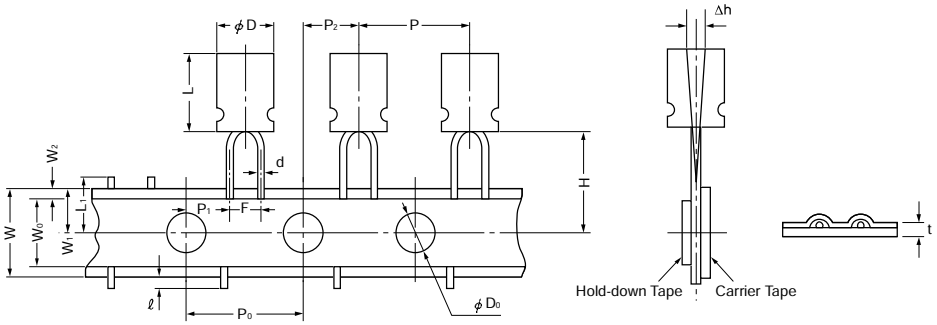


Fig.3



(Unit:mm)

Product Outer Dimensions		φ6.3×5 φ4 to φ6.3×7 φ6.3×7.5	φ5×11 φ6.3×11	φ8	φ10	φ12.5×20 φ12.5×25	φ16 ×25	φ4 to φ5×7	φ6.3×5 φ6.3×7 φ6.3×7.5	φ5 ×11	φ6.3 ×11	φ8
Fig. No.		1	1	1	2	2	★3	3	2	3	2	2
Lead wire interval	F $^{+0.8}_{-0.2}$★1	5.0	5.0	5.0	5.0	5.0	7.5	2.5	2.5	2.5	2.5	3.5
Pitch between components	P ±1.0	12.7	12.7	12.7	12.7	15.0	30.0	12.7	12.7	12.7	12.7	12.7
Sprocket hole pitch	P_0 ±0.2	12.7	12.7	12.7	12.7	15.0	15.0	12.7	12.7	12.7	12.7	12.7
Sprocket hole position	P_1 ±0.5	3.85	3.85	3.85	3.85	5.0	3.75	5.1	5.1	5.1	5.1	4.6
	P_2 ±1.0	6.35	6.35	6.35	6.35	7.5	7.5	6.35	6.35	6.35	6.35	6.35
Lateral deviation	Δh ±1.0	0	0	0	0	0	0	0	0	0	0	0
Carrier tape width	W ±0.5	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
Hold-down tape width	W_0 min.	6.0	6.0	6.0	6.0	11.5	11.5	6.0	6.0	6.0	6.0	6.0
Sprocket hole position	W_1 ±0.5	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Hold-down tape position	W_2 max.	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Component-base height	H ±0.75★2	17.5	18.5	20.0	16.0 / 18.5	16.0 / 18.5	18.5	17.5 / 18.5	17.5 / 18.5	18.5	18.5	18.5
Lead wire clinch height	H_0 ±0.5	16.0	16.0	16.0	—	—	—	—	—	—	—	—
Sprocket hole diameter	φD_0 ±0.2	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Tape thickness(total depth)	t ±0.3	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Lead wire protrusion	ℓ max.	0	0	0	0	0	0	0	0	0	0	0
Cut position of interior Components	L_1 max.	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0

Taping code(standard)	Zig-Zag type	+T	+T	+T	+T	+TO	+T	+TO	+T	+TS	+TS0	+TS	+TS0	+TS	+TS	+TS

Taping code has to be specified after the model number.
Model No. 16ME100HC+T
Taping code

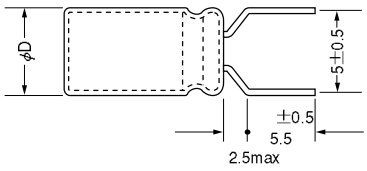
+TO、+TS0 (0=Zero)

★1 Fig.2, Fig.3:±0.5
★2 φ10 · φ12.5 products (H=18.5): $^{+1.5}_{-0.5}$
★3 φ16 products:Skip one product at Fig.2

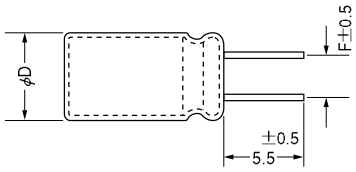
Radial Lead Type Process Standard Specifications (Unit:mm)

1.Lead wire forming

φD is limited to 5,6.3 or 8mm



2.Lead wire cutting



(Unit:mm)

φD	5	6.3	8	10	12.5	16	18
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5

When ordering, please add the following notations to the end of the model number:

+FA・・・・・・for lead wire forming

+CA・・・・・・for lead wire cutting

Examples of model numbers:

16ME100HC+FA

160ME22HPC+CA

When ordering a capacitor with a lead wire whose length is not listed above, please keep in mind that the notation at the end of the model number changes. Inquire with your supplier.

Model No.

Examples of model numbers

6 (Rated voltage ★1) CE (Type code ★2) 100 (Rated capacitance symbol ★3) LX (Series code)

★1.Rated voltage expresses a product mark with 6 about 6.3v.

★2.Type code

CE: Surface mount type (Environmental products)
ME: Radial lead type (Environmental products)
MB: Radial lead type (Environmental products,sleeve less)
CA: Surface mount type (Anti-vibration structure)

・EP-cap : Please refer to page 22 to 26

★3

Rated capacitance(μF)	Symbol
0.47	R47
1.0	1
4.7	4R7
10	10
100	100
1000	1000
10000	10000

Minimum Packaging Quantity

● Long lead

Size	Quantity	Remarks reference
φ3 to φ8★1	500 PCS.	★1.φ8 X 125L to 20L : 200 PCS. (WA, WG series Size φ8X11.5L:200 PCS) ★2.φ12.5 X 30L : 100 PCS. ★3.φ16 X 35.5L : 50 PCS. Surface Mount Type : Please refer to page12
φ10 to φ12.5★2	200 PCS.	
φ16★3	100 PCS.	
φ18	50 PCS.	

● Taping

Size	Quantity
φ3 to φ4	4000 PCS.
φ5	3000 PCS.
φ6.3	2500 PCS.
φ8	1400 PCS.
φ10	900 PCS.
φ12.5	600 PCS.
φ16	250 PCS.

When you place an order, please make sure that order should be integral multiple of the minimum packing unit.

Ripple Current Frequency Coefficient

Series	Capacitance:C(μF)	Frequency:F(Hz)			
		100≤F<1k	1k≤F<10k	10k≤F<100k	100k≤F
CE-BJ, CE-BE,CE-BD, CE-BSS,CE-BS, CE-C, CE-FE, CE-FD, CE-LD, CE-FSS, CE-FU, CE-FS(6.3 to 100V), CE-FH,CE-LH(6.3 to 50V) CE-NP, CE-FN	C≤4.7	1.00	1.30	1.50	1.80
	4.7<C≤33	1.00	1.20	1.30	1.45
	33<C	1.00	1.10	1.20	1.30
CE-GA	C≤4.7	0.07	0.55	0.85	1.00
	1<C≤4.7	0.25	0.60	0.90	1.00
	4.7<C≤47	0.45	0.75	0.92	1.00
	47<C	0.60	0.85	0.92	1.00
CE-AX CE-KX, CE-LX	C≤33	0.35	0.70	0.90	1.00
	33<C≤150	0.40	0.85	0.92	1.00
	150<C	0.60	0.85	0.95	1.00
CE-LS CE-LL, CE-PC	1<C≤22	0.50	0.80	0.90	1.00
	22<C≤150	0.65	0.85	0.92	1.00
	150<C	0.70	0.85	0.95	1.00
CE-PX	ALL ITEM	1.00	1.10	1.20	1.30
CE-PH	ALL ITEM	0.60	0.85	0.93	1.00

Series	Capacitance:C(μF)	Frequency:F(Hz)		
		100≤F<1k	1k≤F<10k	10k≤F
ME-UW, ME-SWB ME-HC, ME-HPC, ME-HPD ME-FC, ME-FD, ME-FH ME-HLB, ME-HT ME-SWN, ME-HWN	C<100	1.00	1.30	1.50
	100≤C<1000	1.00	1.20	1.30
	1000≤C	1.00	1.13	1.15
ME-CX ME-AX	C≤68	0.50	0.80	1.00
	68<C≤220	0.55	0.85	1.00
	220<C≤1000	0.65	0.90	1.00
	1000<C	0.75	0.90	1.00
ME-CZ ME-CA	0.1<C≤1.0	0.20	0.60	1.00
	1<C≤47	0.50	0.80	1.00
	47<C≤220	0.55	0.85	1.00
	220<C≤1000	0.65	0.90	1.00
	1000<C	0.75	0.90	1.00
ME-FZ ME-PX(10 to 100V)	C<4.7	0.40	0.70	1.00
	4.7≤C<100	0.55	0.80	1.00
	100≤C<1000	0.70	0.90	1.00
	1000≤C	0.90	0.95	1.00
ME-FAZ	C<100	0.35	0.54	1.00
	100≤C	0.50	0.70	1.00

Series	Capacitance:C(μF)	Frequency:F(Hz)			
		100≤F<1k	1k≤F<10k	10k≤F<100k	100k≤F
ME-UAX ME-SAX	C≤47	0.40	0.80	0.90	1.00
	47<C≤100	0.60	0.75	0.95	1.00
	100<C	0.75	0.85	0.95	1.00
ME-UZ ME-SZ ME-LS	0.1<C≤0.47	0.20	0.50	0.85	1.00
	0.47<C≤4.7	0.50	0.65	0.95	1.00
	4.7<C≤33	0.60	0.75	0.95	1.00
	33<C	0.75	0.85	0.90	1.00
ME-WX ME-WA ME-WL	C≤33	0.40	0.65	0.90	1.00
	33<C≤1200	0.50	0.80	0.93	1.00
	1200<C	0.60	0.85	0.96	1.00
ME-WG	C≤820	0.45	0.80	0.94	1.00
	820<C≤1800	0.50	0.85	0.96	1.00
	1800<C	0.55	0.88	0.98	1.00
MB-UWG ME-SWG	C≤68	0.22	0.45	0.65	1.00
	68<C≤330	0.28	0.50	0.65	1.00

Series	Capacitance:C(μF)	Frequency:F(Hz)				
		50	120	300	1k	10k≤F
CE-FS (160 to 400V) CE-LH (160 to 400V)	ALL ITEM	0.75	1.00	1.20	1.30	1.50
ME-PX (160 to 400V)	C≤33	0.75	1.00	1.25	1.50	1.75
	33<C	0.80	1.00	1.15	1.30	1.40

Please refer to page 21 for Ripple Current Frequency Coefficient of EP-cap.

Anti-vibration Structure

RoHS compliance

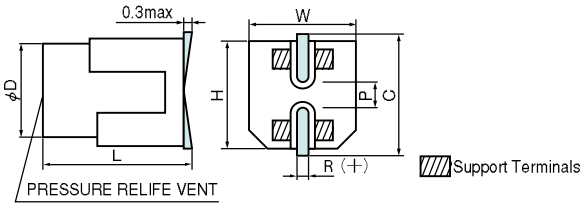
CA Type

- Peak acceleration:30G
- Suitable for Automotive Application

■ Specifications

Items		Specifications
Vibration		Peak acceleration : 30G Peak to peak amplitude : 5mm Frequency : 5Hz to 2,000Hz reciprocation for 20 min. Direction and duration of vibration : 3 orthogonal directions mutually each for 2h.
	△C/C	Within ±5% of the initial value
	tanδ	≤ The initial specified value
	LC	≤ The initial specified value

■ Dimensions

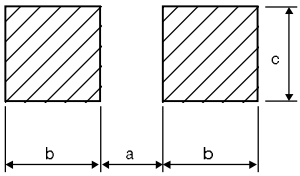


(Unit : mm)

D$^{+0.5max}$	L	W$^{\pm0.2}$	H$^{\pm0.2}$	C$^{\pm0.2}$	R	P$^{\pm0.2}$
8	10.5$^{\pm0.5}$	8.3	8.3	9.0	0.7 to 1.0	3.2
10	10.5$^{\pm0.5}$	10.3	10.3	11.0	1.0 to 1.4	4.6
12.5	13.5$^{\pm1.0}$	13.5	13.5	14.2	1.0 to 1.4	4.6
16	16.5$^{\pm1.0}$	17.0	17.0	18.0	1.8 to 2.1	7.0

■Surface Mount Type Recommended land pattern

Land pattern
(Anti-vibration Structure)



(Unit : mm)

Size	a	b	c
φ 8	2.5	4.5	4.7
φ10	3.8	4.8	4.7
φ12.5	3.8	6.1	6.9
φ16	5.0	8.0	9.5

■ Model No.

35 CA 1000 LX T
- T: Sn plating terminal code
- LX: Series code
- 1000: Rated capacitance code
- CA: Type code(Anti-vibration Structure:CA)
- 35: Rated voltage

Available for φ8 to φ16 in all series of Surface Mount Type.

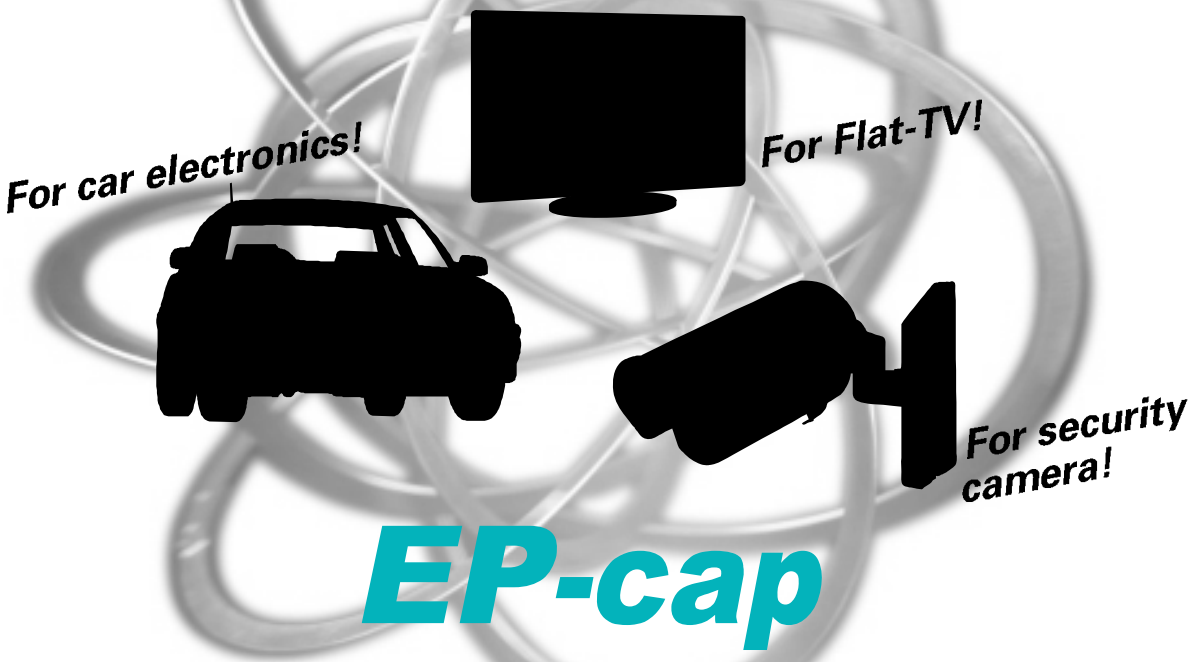
SUNCON

EP-cap

The EP-cap is an aluminum electrolytic capacitor with a hybrid cathode formed by combining an electrolyte and electroconductive polymer with high conductivity.
EP-cap have very low ESR at high frequency as compared with electrolytic capacitors.
The structure of hybrid cathode electrolyte enables EP-cap to have the same self-healing function as aluminum electrolytic capacitors.
EP-cap have hi-reliability product of 125℃ (HVP series), 135℃ (HVT series) and high voltage up to 125V.

Basic Construction
Features / Applications
Product Line-up Table
Characteristics
Advantages of EP-cap
Soldering Condition
Recommended Reflow Condition
Ripple Current Frequency Coefficient
HVA
HVH
HVP
HVT
HEH

Super low ESR-High reliability creates the future.



Features

- ●Super low ESR
- ●Rated voltage is up to 125V.
- ●High reliability product of 135℃
- ●High ripple long life.
- ●Self-healing property of liquid electrlyte.
- ●Excellent low temperature characteristics.

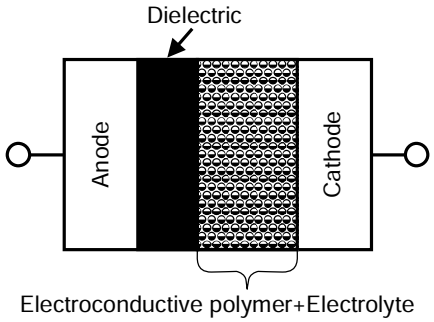
HVA series | **HVH series** | **HVP series** | **HVT series**

Basic Construction / Features / Applications / Product Line-up Table

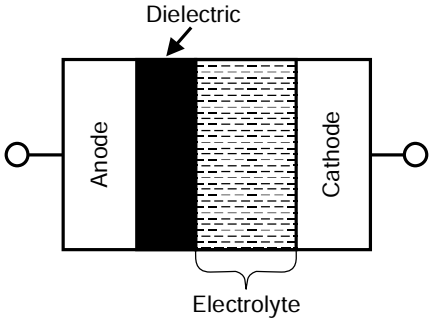
Basic Construction
Features / Applications
Product Line-up Table
Characteristics
Advantages of EP-cap
Soldering Condition
Recommended Reflow Condition
Ripple Current Frequency Coefficient
HVA
HVH
HVP
HVT
HEH

■ Basic Construction

■EP-cap



■Electrolytic Capacitor



■ Features

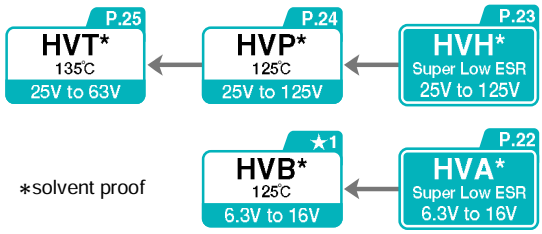
- **Super low ESR**
  (Downsize and upgrade your circuit)
  - ■Excellent noise absorption capability at high frequency.
  - ■High ripple current. Suitable for smoothing circuit of switching regulator.
- **Excellent low temperature characteristics**
  (Stable performance at low temperature range)
- **Self-healing property of liquid electrolyte**
  (Compared to solid capacitors, short circuit mode seldom happen and L.C. is lower.)
- **Rated voltage is up to 125V.**
- **Applying a voltage up to the rated voltage is guaranteed.**
  (Voltage derating is not needed)
- **RoHS compliance and lead-free**
  (Environmental friendly)

■ Applications

・Automotive electric・Network・Industrial
・Flat-TV(LCD.PDP etc.)・PC(Server etc.)
・Power supply(Inverter etc.)

■ Product Line-up Table

SURFACE MOUNT TYPE

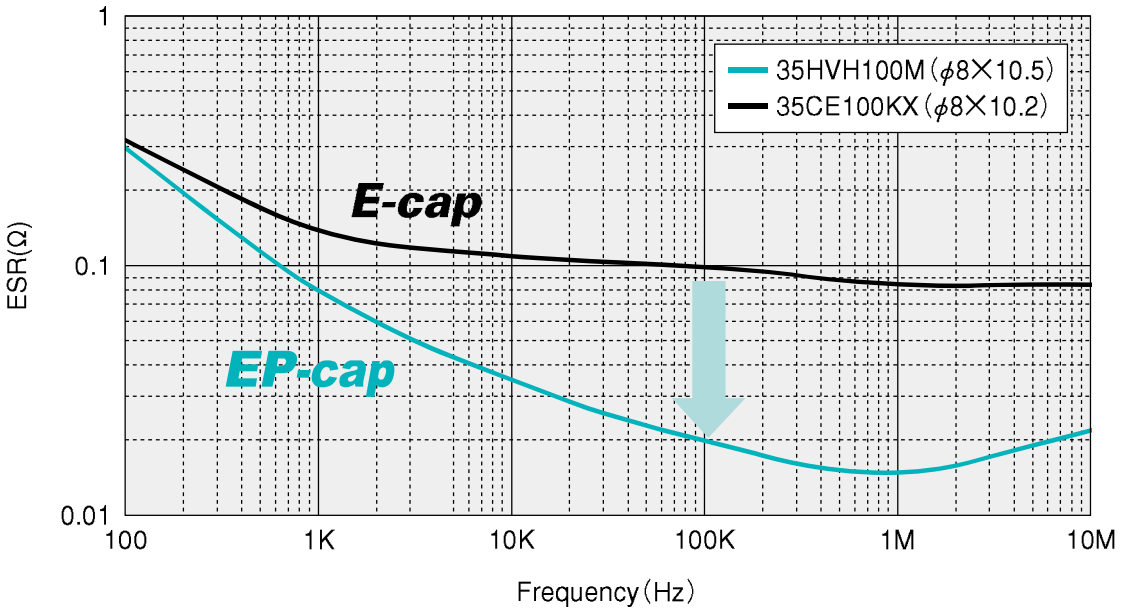


RADIAL LEAD TYPE

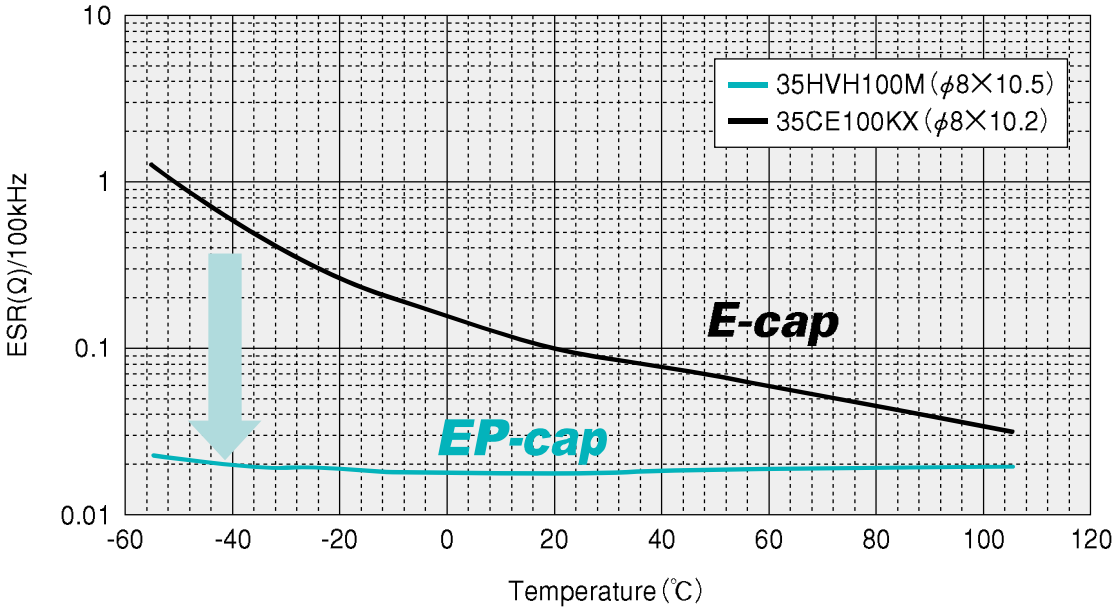
Please refer to http://www.sunelec.co.jp for the information in columns where ★1 marking is indicated in a page row.

Characteristics

■ Frequency characteristics (20℃)



■ Temperature characteristics



Basic Construction
Features / Applications
Product Line-up Table
Characteristics
Advantages of EP-cap
Soldering Condition
Recommended Reflow Condition
Ripple Current Frequency Coefficient
HVA
HVH
HVP
HVT
HEH

Advantages of EP-cap

The industrys first Aluminum Electrolytic Capacitors with Hybrid Conductive Polymer.

Basic Construction
Features / Applications
Product Line-up Table
Characteristics
Advantages of EP-cap
Soldering Condition
Recommended Reflow Condition
Ripple Current Frequency Coefficient
HVA
HVH
HVP
HVT
HEH

E-cap (electrlyte type)

φ6.3x6.0 (5pcs.)
78mΩ
1250mA
105℃ 2,000hrs.

φ12.5x13.5 (1pcs.)
58mΩ
1150mA
105℃ 2,000hrs.

φ16x16.5 (1pcs.)
35mΩ
1800mA
105℃ 2,000hrs.

φ6.3x6.0 (1pcs.)
60mΩ
1270mA
105℃ 5,000hrs.

φ6.3x7.7 (1pcs.)
45mΩ
1400mA
105℃ 5,000hrs.

φ8x10.5 (1pcs.)
27mΩ
1900mA
105℃10,000hrs.

EP-cap (Hibrid type)

- For high performance of electronic devices
- For miniaturize, low Profile, and light weight
- For high-density mounting
- For high temperature reflow soldering
- For high productivity by the surface mount technology

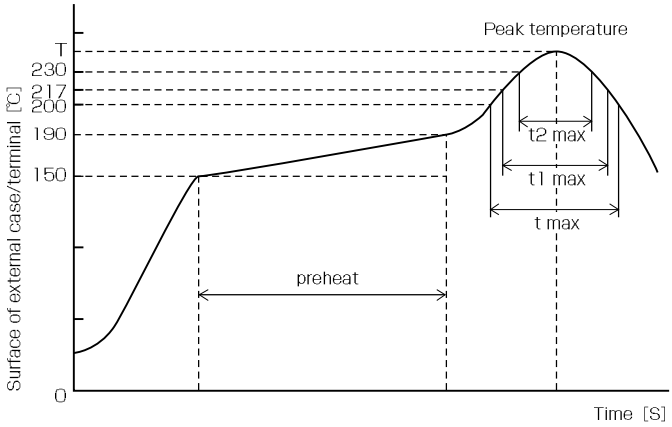
Soldering Condition / Recommended Reflow Condition / Ripple Current Frequency Coefficient

■ Soldering Condition

- ●Soldering with a soldering iron - within 350℃×3 seconds unless otherwise specified in the spec.
- ●Flow soldering - within 260℃×10 seconds unless otherwise specified in the spec.
  (Do not apply flow soldering to SMD type.)
- ●Thermal curing over - ambient temperature within 150℃×2 minutes.

■ Recommended Reflow Condition

AIR reflow and IR reflow



HVH, HVP, HVT, HVA, HVB★
Preheat ; 150℃ to 190℃, Within 120sec.

Series	Voltage (V)	Size	Time of more than 200℃(t)	Time of more than 217℃(t1)	Time of more than 230℃(t2)	Peak temperature (Within 5sec.)
HVA,HVB★	6.3 to 16	ALL	Within 100sec.	Within 80sec.	Within 40sec.	250℃
HVH,HVP,HVT	25 to 63	φ6.3×4.5	Within 60sec.	Within 50sec.	Within 30sec.	250℃
		φ6.3×6.0 to φ10	Within 100sec.	Within 80sec.	Within 40sec.	260℃
	80 to 125	ALL	Within 100sec.	Within 80sec.	Within 40sec.	250℃

Capacitors can withstand two reflow processes on the above conditions. Second reflow shall be taken after more than one hour natural cooling time and taken after the return to normal temperatures of PCB board and components.

■ Ripple Current Frequency Coefficient

Series	Capacitance : C (μF)	Frequency : F (Hz)			
		100 ≤ F < 1k	1k ≤ F < 10k	10k ≤ F < 100k	100k ≤ F < 500k
HVH, HVP HVT, HEH	C ≤ 4.7	0.03	0.30	0.65	1.00
	4.7 < C ≤ 33	0.05	0.32	0.67	1.00
	33 < C	0.10	0.35	0.70	1.00
HVA, HVB★ HEA★	C ≤ 10	0.03	0.20	0.50	1.00
	10 < C	0.05	0.20	0.50	1.00

■ Anti-vibration structure

Available for φ8 and φ10.
[Type code]

Standard structure	Anti-vibration structure
HV	HA

Please refer to http://www.sunelec.co.jp for the information in columns where★marking is indicated in a page row.

Hybrid Conductive Polymer Type / Surface Mount Type

RoHS compliance

HVA Series

Super Low ESR

- 105℃, 3,000 to 5,000hrs.
- Solvent proof (within 2 minutes)

Basic Construction
Features / Applications
Product Line-up Table
Characteristics
Advantages of EP-cap
Soldering Condition
Recommended Reflow Condition
Ripple Current Frequency Coefficient
HVA
HVH
HVP
HVT
HEH

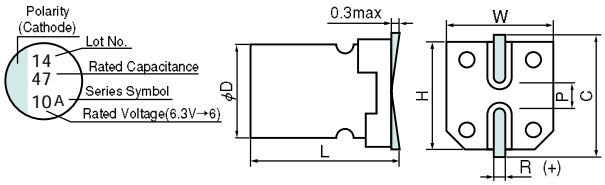
■ Specifications

Items	Condition		Specifications		
Rated voltage (V)	–		6.3	10	16
Surge voltage (V)	Room temperature		8.2	13	20
Category temperature range (℃)	–		−55 to +105		
Capacitance tolerance (%)	120Hz/20℃		M : ±20		
Dissipation Factor (tan δ)	120Hz/20℃		0.18	0.16	0.14
Leakage current (LC)★	μA/after 2minutes (max)		The greater value of either 0.2CV or 100		
Temperature characteristics Impedance ratio	Based the value at 120Hz, +20℃	−55℃ Z/Z20℃	1 to 2.5		
		105℃ Z/Z20℃	0.6 to 1.0		
Endurance	105℃ rated voltage applied (With the rated ripple current)	Test	φ6.3 : 3,000 hrs., D≥φ8 : 5,000 hrs.		
		△C/C	Within ±30% of the initial value		
		tan δ	≤ 2 times the initial specified value		
		ESR	≤ 2 times the initial specified value		
		LC	≤ The initial specified value		

★In case of some problems for measured values, measure after applying rated voltage for 120 minutes at 105℃.

■ Marking, Dimensions

(Unit : mm)



A pressure relief vent is attached to products over φD=8

D +0.5max	L ±0.3	W ±0.2	H ±0.2	C ±0.2	R	P ±0.2
6.3	6.0	6.6	6.6	7.3	0.5 to 0.8	2.2
6.3	7.7	6.6	6.6	7.3	0.5 to 0.8	2.2
8	10.5	8.3	8.3	9.0	0.7 to 1.0	3.2
10	10.5	10.3	10.3	11.0	1.0 to 1.4	4.6

■ Size List, ESR, Rated Ripple Current

μF \ V	6.3			10			16		
10							6.3×6.0	54	1130
22							6.3×6.0	54	1130
33				6.3×6.0	40	1510	6.3×6.0	54	1130
47							6.3×7.7 ★	45	1480
				6.3×6.0	40	1510	8×10.5	22	2290
68				6.3×6.0	40	1510	8×10.5	22	2290
100				6.3×7.7 ★	35	1910			
	6.3×6.0	36	1630	8×10.5	18	2800	8×10.5	22	2290
150				6.3×7.7 ★	35	1910			
	6.3×6.0	36	1630	8×10.5	18	2800	10×10.5	20	2920
220	6.3×7.7 ★	32	2020						
	8×10.5	16	3150	8×10.5	18	2800			
330	8×10.5	16	3150	8×10.5	18	2800			
390	8×10.5	16	3150						
470	8×10.5	16	3150	10×10.5	16	3650			
560	8×10.5	16	3150	10×10.5	16	3650			
680	10×10.5	15	3890						
820	10×10.5	15	3890						
1000	10×10.5	15	3890						

Please refer to page 21 for the ripple current frequency coefficient.

★Add the S at the end of the model number.
Ex.:10HVA100MS(Size is 6.3x7.7mm)

Rated ripple current mArms(100kHz, 105℃)

ESR(mΩ) max at 100kHz, 20℃

Case size:φDxL(mm)

■ Model No.

10 HV A 47 M
- M — Capacitance tolerance
- 47 — Rated capacitance code
- A — Series code
- HV — Type code
- 10 — Rated voltage

Hybrid Conductive Polymer Type / Surface Mount Type **RoHS compliance**

HVH Series

Super Low ESR
High Voltage, Long Life

- 105℃, 2,000 to 10,000hrs.
- Solvent proof (within 2 minutes)

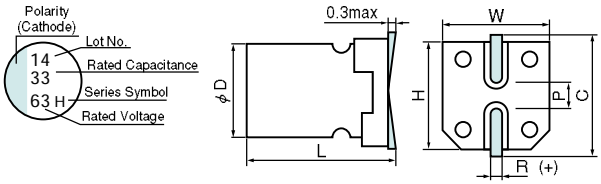
125V **NEW** φ6.3×4.5、φ10×12.5 **NEW**

Basic Construction
Features / Applications
Product Line-up Table
Characteristics
Advantages of EP-cap
Soldering Condition
Recommended Reflow Condition
Ripple Current Frequency Coefficient
HVA
HVH
HVP
HVT
HEH

■ Specifications

Items	Condition		Specifications
Rated voltage (V)	–		25 / 35 / 40 / 50 / 63 / 80 / 100 / 125
Surge voltage (V)	Room temperature		32 / 44 / 50 / 63 / 79 / 100 / 125 / 157
Category temperature range (℃)	–		−55 to +105
Capacitance tolerance (%)	120Hz/20℃		M : ±20
Dissipation Factor (tanδ)	120Hz/20℃		0.16
Leakage current (LC)	μA/after 2minutes (max)		The greater value of either 0.05CV or 100
Temperature characteristics Impedance ratio	Based the value at 120Hz, +20℃	−55℃ Z/Z20℃	1 to 2.5
		105℃ Z/Z20℃	0.6 to 1.0
Endurance	105℃ rated voltage applied (With the rated ripple current)	Test	φ6.3×4.5 : 2,000hrs., φ6.3×6.0, φ6.3×7.7 : 5,000hrs., D≥φ8 : 10,000hrs.
		△C/C	Within ±30% of the initial value
		tanδ	≤ 2 times the initial specified value
		ESR	≤ 2 times the initial specified value
		LC	≤ The initial specified value

■ Marking, Dimensions



A pressure relief vent is attached to products over φ D=8

(Unit : mm)

D+0.5max	L±0.3	W±0.2	H±0.2	C±0.2	R	P±0.2
6.3	4.5	6.6	6.6	7.3	0.5 to 0.8	2.2
6.3	6.0	6.6	6.6	7.3	0.5 to 0.8	2.2
6.3	7.7	6.6	6.6	7.3	0.5 to 0.8	2.2
8	10.5	8.3	8.3	9.0	0.7 to 1.0	3.2
10	10.5	10.3	10.3	11.0	1.0 to 1.4	4.6
10	12.5	10.3	10.3	11.0	1.0 to 1.4	4.6

■ Size List, ESR, Rated Ripple Current

μF \ V	25			35			40			50		
10										6.3×6.0 ★	120	980
12				6.3×4.5	150	640						
15										6.3×7.7	80	1200
18							6.3×6.0	110	1030			
27	6.3×4.5	95	800	6.3×6.0	100	1080	6.3×7.7	70	1250			
33										8×10.5	35	1670
47	6.3×6.0	60	1270	6.3×7.7	60	1300						
56							8×10.5	32	1750	10×10.5	25	2320
68	6.3×7.7	45	1400									
82										10×12.5	19	2650
100				8×10.5	30	1800	10×10.5	24	2400			
120							10×12.5	18	2750			
150	8×10.5	27	1900	10×10.5	23	2470						
220				10×12.5	17	2830						
270	10×10.5	22	2530									
330	10×12.5	16	2900									

μF \ V	63			80			100			125		
6.8	6.3×6.0	150	960									
10	6.3×7.7	100	1060				10×10.5	80	1450	10×10.5	90	1250
12				10×10.5	70	1600	10×10.5	80	1450			
15				10×10.5	70	1600	10×12.5	60	1660			
18				10×12.5	50	1830						
22	8×10.5	40	1560									
33	8×10.5★	40	1560									
	10×10.5	30	2100									
47	10×10.5	30	2100									
56	10×12.5	22	2400									

Please refer to page 21 for the ripple current frequency coefficient.

★ S type

Case size:φDxL(mm)
ESR(mΩ) max at 100kHz, 20℃
Rated ripple current mArms(100kHz, 105℃)

■ Model No.

63 HV H 33 M
- Capacitance tolerance
- Rated capacitance code
- Series code
- Type code
- Rated voltage

63 HV H 33 M S
- S type code
- Capacitance tolerance
- Rated capacitance code
- Series code
- Type code
- Rated voltage

SUNCON

Hybrid Conductive Polymer Type / Surface Mount Type

RoHS compliance

HVP Series

125℃ Super Low ESR

High Voltage, High Reliability

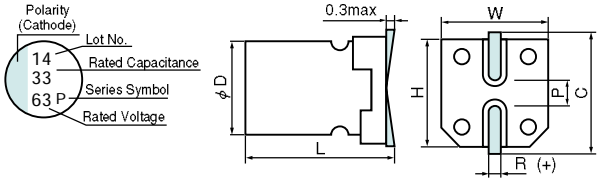
- 125℃, 1,500 to 3,000hrs.
- Solvent proof (within 2 minutes)

40V,125V NEW φ6.3×6.0、φ10×12.5 NEW

■ Specifications

Items	Condition		Specifications							
Rated voltage (V)	–		25	35	40	50	63	80	100	125
Surge voltage (V)	Room temperature		32	44	50	63	79	100	125	157
Category temperature range (℃)	–		−55 to +125							
Capacitance tolerance (%)	120Hz/20℃		M : ±20							
Dissipation Factor (tan δ)	120Hz/20℃		0.16							
Leakage current (LC)	μA/after 2minutes (max)		The greater value of either 0.05CV or 100							
Temperature characteristics Impedance ratio	Based the value at 120Hz, +20℃	−55℃ Z/Z20℃	1 to 2.5							
		125℃ Z/Z20℃	0.6 to 1.0							
Endurance	125℃ rated voltage applied (With the rated ripple current)	Test	φ6.3×6.0 : 1,500hrs., φ6.3×7.7 : 2,000hrs., D≥φ8 : 3,000hrs.							
		△C/C	Within ±30% of the initial value							
		tan δ	≤2 times the initial specified value							
		ESR	≤2 times the initial specified value							
		LC	≤The initial specified value							

■ Marking, Dimensions



A pressure relief vent is attached to products over φ D=8

(Unit : mm)

D +0.5max	L ±0.3	W ±0.2	H ±0.2	C ±0.2	R	P ±0.2
6.3	6.0	6.6	6.6	7.3	0.5 to 0.8	2.2
6.3	7.7	6.6	6.6	7.3	0.5 to 0.8	2.2
8	10.5	8.3	8.3	9.0	0.7 to 1.0	3.2
10	10.5	10.3	10.3	11.0	1.0 to 1.4	4.6
10	12.5	10.3	10.3	11.0	1.0 to 1.4	4.6

■ Size List, ESR, Rated Ripple Current

μF \ V	25			35			40			50		
10										6.3×6.0★	120	690
15										6.3×7.7	80	840
18							6.3×6.0	110	720			
27				6.3×6.0	100	760	6.3×7.7	70	870			
33										8×10.5	35	1170
47	6.3×6.0	60	890	6.3×7.7	60	910						
56							8×10.5	32	1220	10×10.5	25	1390
68	6.3×7.7	45	980									
82										10×12.5	19	1590
100				8×10.5	30	1260	10×10.5	24	1440			
120							10×12.5	18	1650			
150	8×10.5	27	1330	10×10.5	23	1480						
220				10×12.5	17	1700						
270	10×10.5	22	1520									
330	10×12.5	16	1740									

μF \ V	63			80			100			125		
6.8	6.3×6.0	150	670									
10	6.3×7.7	100	740				10×10.5	80	870	10×10.5	90	750
12				10×10.5	70	900	10×10.5	80	870			
15				10×10.5	70	900	10×12.5	60	1000			
18				10×12.5	50	1100						
22	8×10.5	40	1090									
33	8×10.5★	40	1090									
	10×10.5	30	1260									
47	10×10.5	30	1260									
56	10×12.5	22	1440									

Please refer to page 21 for the ripple current frequency coefficient.

★ S type

Case size:φDxL(mm)

ESR(mΩ) max at 100kHz, 20℃

Rated ripple current mArms(100kHz, 125℃)

■ Model No.

63 HV P 33 M
- M: Capacitance tolerance
- 33: Rated capacitance code
- P: Series code
- HV: Type code
- 63: Rated voltage

63 HV P 33 M S
- S: S type code
- M: Capacitance tolerance
- 33: Rated capacitance code
- P: Series code
- HV: Type code
- 63: Rated voltage

Hybrid Conductive Polymer Type / Surface Mount Type **RoHS compliance**

HVT Series

135℃ guaranteed

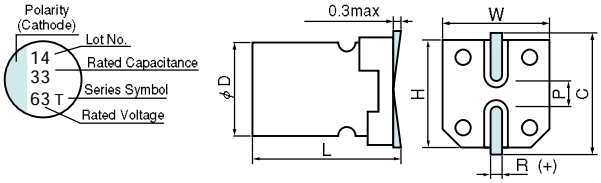
- 135℃, 1,000 to 2,000hrs.
- Solvent proof (within 2 minutes)

40V NEW φ6.3×7.7、φ10×12.5 NEW

■ Specifications

Items		Condition		Specifications				
Rated voltage (V)		–		25	35	40	50	63
Surge voltage (V)		Room temperature		32	44	50	63	79
Category temperature range (℃)		–		−55 to +135				
Capacitance tolerance (%)		120Hz/20℃		M : ±20				
Dissipation Factor (tanδ)		120Hz/20℃		0.16				
Leakage current (LC)		μA/after 2minutes (max)		The greater value of either 0.05CV or 100				
Temperature characteristics Impedance ratio		Based the value at 120Hz, +20℃	−55℃ Z/Z20℃	1 to 2.5				
			135℃ Z/Z20℃	0.6 to 1.0				
Endurance		135℃ rated voltage applied (With the rated ripple current)	Test	φ6.3 : 1,000hrs., D≥φ8 : 2,000hrs.				
			△C/C	Within ±30% of the initial value				
			tanδ	≤ 2 times the initial specified value				
			ESR	≤ 2 times the initial specified value				
			LC	≤ The initial specified value				

■ Marking, Dimensions



A pressure relief vent is attached to products over φD=8

(Unit : mm)

D+0.5max	L±0.3	W±0.2	H±0.2	C±0.2	R	P±0.2
6.3	7.7	6.6	6.6	7.3	0.5 to 0.8	2.2
8	10.5	8.3	8.3	9.0	0.7 to 1.0	3.2
10	10.5	10.3	10.3	11.0	1.0 to 1.4	4.6
10	12.5	10.3	10.3	11.0	1.0 to 1.4	4.6

■ Size List, ESR, Rated Ripple Current

μF \ V	25			35			40			50		
15										6.3×7.7	80	670
27							6.3×7.7	70	700			
33										8×10.5	35	940
47				6.3×7.7	60	730						
56							8×10.5	32	980	10×10.5	25	1110
68	6.3×7.7	45	780									
82										10×12.5	19	1270
100				8×10.5	30	1010	10×10.5	24	1150			
120							10×12.5	18	1320			
150	8×10.5	27	1060	10×10.5	23	1180						
220				10×12.5	17	1360						
270	10×10.5	22	1220									
330	10×12.5	16	1390									

μF \ V	63		
10	6.3×7.7	100	590
22	8×10.5	40	870
33	8×10.5★	40	870
	10×10.5	30	1010
47	10×10.5	30	1010
56	10×12.5	22	1150

Rated ripple current mArms(100kHz, 135℃)

ESR(mΩ) max at 100kHz, 20℃

Case size:φDxL(mm)

Please refer to page 21 for the ripple current frequency coefficient.

★ S type

■ Model No.

63 HV T 33 M
- Capacitance tolerance
- Rated capacitance code
- Series code
- Type code
- Rated voltage

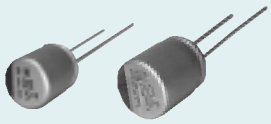
63 HV T 33 M S
- S type code
- Capacitance tolerance
- Rated capacitance code
- Series code
- Type code
- Rated voltage

SUNCON

Hybrid Conductive Polymer Type / Radial Lead Type — RoHS compliance

HEH Series

Super Low ESR
High Voltage, Long Life



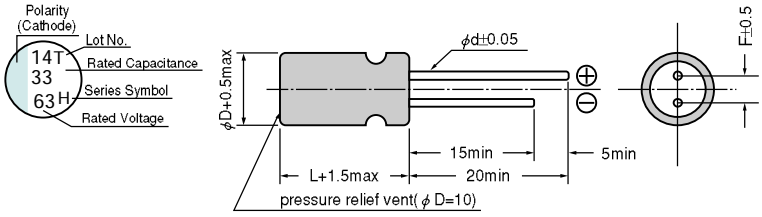
- 105℃, 10,000hrs. ● Laminated aluminum case
- Solvent proof (within 2 minutes)

NEW

■ Specifications

Items	Condition		Specifications						
Rated voltage (V)	–		25	35	40	50	63	80	100
Surge voltage (V)	Room temperature		32	44	50	63	79	100	125
Category temperature range (℃)	–		−55 to +105						
Capacitance tolerance (%)	120Hz/20℃		M : ±20						
Dissipation Factor (tan δ)	120Hz/20℃		0.16						
Leakage current (LC)	μA/after 2minutes (max)		The greater value of either 0.05CV or 100						
Temperature characteristics Impedance ratio	Based the value at 120Hz, +20℃	−55℃ Z/Z20℃	1 to 2.5						
		105℃ Z/Z20℃	0.6 to 1.0						
Endurance	105℃ 10,000hrs. rated voltage applied (With the rated ripple current)	△C/C	Within ±30% of the initial value						
		tan δ	≤ 2 times the initial specified value						
		ESR	≤ 2 times the initial specified value						
		LC	≤ The initial specified value						

■ Marking, Dimensions



(Unit : mm)

φD	L	F	φd
8	9.5	3.5	0.6
10	9.5	5.0	0.7
10	11.5	5.0	0.7

■ Size List, ESR, Rated Ripple Current

μF \ V	25			35			40			50		
33										8×9.5	35	1670
56							8×9.5	32	1750	10×9.5	25	2320
82										10×11.5	19	2650
100				8×9.5	30	1800	10×9.5	24	2400			
120							10×11.5	18	2750			
150	8×9.5	27	1900	10×9.5	23	2470						
220				10×11.5	17	2830						
270	10×9.5	22	2530									
330	10×11.5	16	2900									

Case size:φDxL(mm)

μF \ V	63			80			100		
10							10×9.5	80	1450
12				10×9.5	70	1600	10×9.5	80	1450
15				10×9.5	70	1600	10×11.5	60	1660
18				10×11.5	50	1830			
22	8×9.5	40	1560						
33	8×9.5★	40	1560						
	10×9.5	30	2100						
47	10×9.5	30	2100						
56	10×11.5	22	2400						

Please refer to page 21 for the ripple current frequency coefficient.
★S type

Rated ripple current mArms(100kHz, 105℃)

ESR(mΩ)max at 100kHz, 20℃

■ Model No.

63 HE H 33 M T
- T — Sn plating terminal code
- M — Capacitance tolerance
- 33 — Rated capacitance code
- H — Series code
- HE — Type code
- 63 — Rated voltage

63 HE H 33 M S T
- T — Sn plating terminal code
- S — S type code
- M — Capacitance tolerance
- 33 — Rated capacitance code
- H — Series code
- HE — Type code
- 63 — Rated voltage

SUNCON

Aluminum Electrolytic Capacitors

Aluminum Electrolytic Capacitors is
hard to be in Short-mode because,
it has Shelf-healing mechanism at the dielectric
layer by its electrolyte.
Aluminum Electrolytic Capacitors supply wide
range of capacitance and voltage.
They are suitable for econmical circuit design.

Features

- Wide rated voltage range from 4V to 450V
- Wide capacitance range from 0.47μF to 15000μF
- Self healing of the dielectrics
  (aluminium oxide film) after damages.
- The main failuremode is of wear-out.
  Short circuit within capacitor is not appreciable.
- No voltage dependence of capacitance.
- Can withstand applied pulse current and pulse voltage
  compared to other types of capacitors.

Applications

Automotive electric, Network equipment, Industrial equipment,
Digital equipment, Consumer equipment, PC etc.

CE-BJ
CE-BE
CE-BD
CE-BSS
CE-BS
CE-FE
CE-FD
CE-LD
CE-FSS
CE-FU
CE-FS
CE-FH
CE-GA
CE-AX
CE-KX
CE-LX
CE-LS
CE-LH
CE-LL
CE-PC
CE-PH
CE-NP
CE-FN
ME-SWB
ME-UZ·SZ
ME-UAX·SAX
ME-LS
ME-HC
ME-CZ
ME-CA
ME-CX
ME-AX
ME-WX
ME-WA
ME-WL
ME-SWG
ME-WG
ME-PX
ME-HPC·HPD
ME-FC·FD
ME-FAZ
ME-FH
ME-SWN
ME-HWN

Aluminum Electrolytic Type / Surface Mount Type **RoHS compliance**

CE-BJ Series

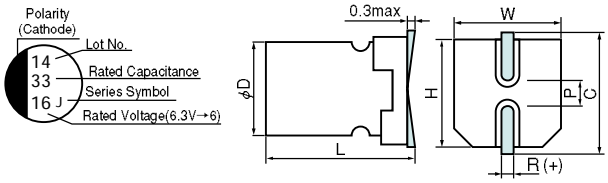
Super Low Profile
3.25mm Height

● Solvent proof (within 2 minutes)

■ Specifications

Items	Condition		Specifications						
Rated voltage (V)	–		4	6.3	10	16	25	35	50
Surge voltage (V)	Room temperature		5.0	8.0	13	20	32	44	63
Category temperature range (℃)	–		−40 to +85						
Capacitance tolerance (%)	120Hz/20℃		M : ±20						
Dissipation Factor (tan δ)	120Hz/20℃		0.40	0.35	0.24	0.20	0.16	0.14	0.12
Leakage current (LC)	μA/after 2minutes (max)		0.01CV						
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−25℃ Z/Z20℃	7	4	3	2	2	2	2
		−40℃ Z/Z20℃	15	10	8	6	4	4	4
Endurance	85℃, 1,000hrs. rated voltage applied (With the rated ripple current)	△C/C	Within ±25% of the initial value						
		tan δ	≤ 2 times the initial specified value						
		LC	≤ The initial specified value						

■ Marking, Dimensions



(Unit : mm)

D +0.5max	L +0.1 −0.2	W ±0.2	H ±0.2	C ±0.2	R	P ±0.2
6.3	3.25	6.6	6.6	7.3	0.5 to 0.8	2.2

■ Size List, Rated Ripple Current

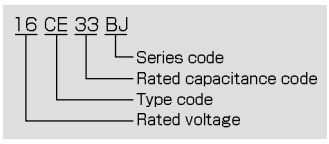
μF \ V	4	6.3	10	16	25	35	50
10							6.3×3.25 31
15						6.3×3.25 44	
22					6.3×3.25 46		
33				6.3×3.25 46			
47			6.3×3.25 51				
68		6.3×3.25 60					
82	6.3×3.25 60						

Please refer to page 15 for the ripple current frequency coefficient.

Rated ripple current mArms(120Hz, 85℃)

Case size:φDxL(mm)

■ Model No.



Aluminum Electrolytic Type / Surface Mount Type **RoHS compliance**

CE-BE Series

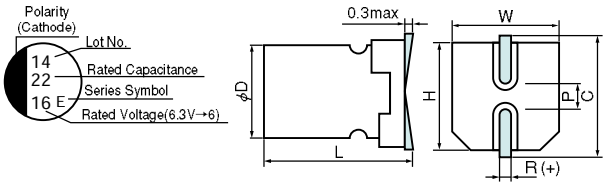
Miniature Low Profile
3.9mm Height

- Solvent proof (within 2 minutes)

■ Specifications

Items	Condition		Specifications						
Rated voltage (V)	–		4	6.3	10	16	25	35	50
Surge voltage (V)	Room temperature		5.0	8.0	13	20	32	44	63
Category temperature range (℃)	–		−40 to +85						
Capacitance tolerance (%)	120Hz/20℃		M : ±20						
Dissipation Factor (tan δ)	120Hz/20℃		0.40	0.30	0.24	0.20	0.16	0.14	0.12
Leakage current (LC)	μA/after 2minutes (max)		The greater value of either 0.01CV or 3						
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−25℃ Z/Z20℃	7	4	3	2	2	2	2
		−40℃ Z/Z20℃	15	10	8	6	4	4	4
Endurance	85℃, 1,000hrs. rated voltage applied (With the rated ripple current)	△C/C	Within ±25% of the initial value						
		tan δ	≤ 2 times the initial specified value						
		LC	≤ The initial specified value						

■ Marking, Dimensions



(Unit : mm)

D +0.5max	L ±0.1 −0.2	W ±0.2	H ±0.2	C ±0.2	R	P ±0.2
5	3.9	5.3	5.3	6.0	0.5 to 0.8	1.4
6.3	3.9	6.6	6.6	7.3	0.5 to 0.8	2.2

■ Size List, Rated Ripple Current

μF \ V	4	6.3	10	16	25	35	50
1.0							5×3.9 8.4
2.2							5×3.9 14
3.3							5×3.9 17
4.7					5×3.9 18	5×3.9 18	5×3.9 21
10				5×3.9 25	5×3.9 30	5×3.9 29	6.3×3.9 33
22				5×3.9★ 37			
		5×3.9 33	5×3.9 35	6.3×3.9 45	6.3×3.9 50	6.3×3.9 49	
33			5×3.9★ 43				
	5×3.9 33	5×3.9 40	6.3×3.9 50	6.3×3.9 50	6.3×3.9 60		
47		5×3.9★ 48					
	5×3.9 40	6.3×3.9 60	6.3×3.9 55	6.3×3.9 60			
68	5×3.9★ 48						
	6.3×3.9 60	6.3×3.9 70					
100	5×3.9★ 58						
	6.3×3.9 70	6.3×3.9 75					
180	6.3×3.9 85						

Please refer to page 15 for the ripple current frequency coefficient.
★BES series

Rated ripple current mArms(120Hz, 85℃)

Case size:φDxL(mm)

■ Model No.

BE series

16 CE 22 BE
- BE: Series code
- 22: Rated capacitance code
- CE: Type code
- 16: Rated voltage

BES series

16 CE 22 BES
- BES: Series code
- 22: Rated capacitance code
- CE: Type code
- 16: Rated voltage

CE-BJ
CE-BE
CE-BD
CE-BSS
CE-BS
CE-FE
CE-FD
CE-LD
CE-FSS
CE-FU
CE-FS
CE-FH
CE-GA
CE-AX
CE-KX
CE-LX
CE-LS
CE-LH
CE-LL
CE-PC
CE-PH
CE-NP
CE-FN
ME-SWB
ME-UZ·SZ
ME-UAX·SAX
ME-LS
ME-HC
ME-CZ
ME-CA
ME-CX
ME-AX
ME-WX
ME-WA
ME-WL
ME-SWG
ME-WG
ME-PX
ME-HPC·HPD
ME-FC·FD
ME-FAZ
ME-FH
ME-SWN
ME-HWN

CE-BD Series

Miniature Low Profile

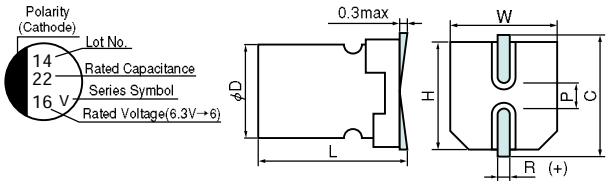
4.5mm Height

● Solvent proof (within 2 minutes)

■ Specifications

Items	Condition		Specifications						
Rated voltage (V)	–		4	6.3	10	16	25	35	50
Surge voltage (V)	Room temperature		5.0	8.0	13	20	32	44	63
Category temperature range (℃)	–		−40 to +85						
Capacitance tolerance (%)	120Hz/20℃		M : ±20						
Dissipation Factor (tan δ)	120Hz/20℃		0.40	0.30	0.24	0.20	0.16	0.14	0.12
Leakage current (LC)	μA/after 2minutes (max)		The greater value of either 0.01CV or 3						
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−25℃ Z/Z20℃	7	4	3	2	2	2	2
		−40℃ Z/Z20℃	15	10	8	6	4	4	4
Endurance	85℃, 1,000hrs. rated voltage applied (With the rated ripple current)	△C/C	Within ±25% of the initial value						
		tan δ	≤ 2 times the initial specified value						
		LC	≤ The initial specified value						

■ Marking, Dimensions



(Unit : mm)

D +0.5max	L +0.1 −0.2	W ±0.2	H ±0.2	C ±0.2	R	P ±0.2
4	4.5	4.3	4.3	5.0	0.5 to 0.8	1.0
5	4.5	5.3	5.3	6.0	0.5 to 0.8	1.4
6.3	4.5	6.6	6.6	7.3	0.5 to 0.8	2.2

■ Size List, Rated Ripple Current

μF \ V	4	6.3	10	16	25	35	50
0.47							4×4.5 4.0
1.0							4×4.5 8.4
2.2							4×4.5 14
3.3							4×4.5 17
4.7					4×4.5 17	4×4.5 18	5×4.5 21
10				4×4.5 23	5×4.5 27	5×4.5 29	6.3×4.5 33
22		4×4.5 28	5×4.5 33	5×4.5 37	6.3×4.5 47	6.3×4.5 49	
33	4×4.5 28	5×4.5 37	5×4.5 41	6.3×4.5 51	6.3×4.5 57		
47	4×4.5 33	5×4.5 45	6.3×4.5 53	6.3×4.5 61			
100	5×4.5 56	6.3×4.5 70	6.3×4.5 74				
220	6.3×4.5 96						

Please refer to page 15 for the ripple current frequency coefficient.

Rated ripple current mArms(120Hz, 85℃)

Case size:φDxL(mm)

■ Model No.

16 CE 22 BD
- BD: Series code
- 22: Rated capacitance code
- CE: Type code
- 16: Rated voltage

Aluminum Electrolytic Type / Surface Mount Type **RoHS compliance**

CE-BSS Series

Miniature High Capacitance

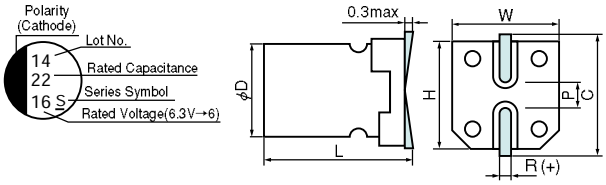
5.4mm Height

- Solvent proof (within 2 minutes)

■ Specifications

Items	Condition		Specifications					
Rated voltage (V)	–		6.3	10	16	25	35	50
Surge voltage (V)	Room temperature		8.0	13	20	32	44	63
Category temperature range (℃)	–		−40 to +85					
Capacitance tolerance (%)	120Hz/20℃		M : ±20					
Dissipation Factor (tan δ)	120Hz/20℃		0.28	0.24	0.20	0.16	0.14	0.12
Leakage current (LC)	μA/after 2minutes (max)		The greater value of either 0.01CV or 3					
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−25℃ Z/Z20℃	4	3	2	2	2	2
		−40℃ Z/Z20℃	10	8	6	4	4	4
Endurance	85℃, 2,000hrs. rated voltage applied (With the rated ripple current)	△C/C	Within ±25% of the initial value					
		tan δ	≤ 2 times the initial specified value					
		LC	≤ The initial specified value					

■ Marking, Dimensions



(Unit : mm)

D +0.5max	L ±0.1 −0.2	W ±0.2	H ±0.2	C ±0.2	R	P ±0.2
4	5.4	4.3	4.3	5.0	0.5 to 0.8	1.0
5	5.4	5.3	5.3	6.0	0.5 to 0.8	1.4
6.3	5.4	6.6	6.6	7.3	0.5 to 0.8	2.2

■ Size List, Rated Ripple Current

μF \ V	6.3		10		16		25		35		50	
4.7											4×5.4	18
10							4×5.4	20	4×5.4	20	5×5.4	27
22			4×5.4	28	4×5.4	28	5×5.4	35	5×5.4	36	6.3×5.4	40
33	4×5.4	31	4×5.4	32	5×5.4	40	5×5.4	42	6.3×5.4	58		
47	4×5.4	36	5×5.4	43	5×5.4	44	6.3×5.4	65	6.3×5.4	65		
56	5×5.4	46	5×5.4	46	5×5.4	48	6.3×5.4	68				
100	5×5.4	47	5×5.4	50								
150	6.3×5.4	71	6.3×5.4	76								
220	6.3×5.4	74										

Please refer to page 15 for the ripple current frequency coefficient.

Rated ripple current mArms(120Hz, 85℃)

Case size:φDxL(mm)

■ Model No.

16 CE 22 BSS
- BSS: Series code
- 22: Rated capacitance code
- CE: Type code
- 16: Rated voltage

CE-BJ
CE-BE
CE-BD
CE-BSS
CE-BS
CE-FE
CE-FD
CE-LD
CE-FSS
CE-FU
CE-FS
CE-FH
CE-GA
CE-AX
CE-KX
CE-LX
CE-LS
CE-LH
CE-LL
CE-PC
CE-PH
CE-NP
CE-FN
ME-SWB
ME-UZ·SZ
ME-UAX·SAX
ME-LS
ME-HC
ME-CZ
ME-CA
ME-CX
ME-AX
ME-WX
ME-WA
ME-WL
ME-SWG
ME-WG
ME-PX
ME-HPC·HPD
ME-FC·FD
ME-FAZ
ME-FH
ME-SWN
ME-HWN

Aluminum Electrolytic Type / Surface Mount Type **RoHS compliance**

CE-BS Series

Standard

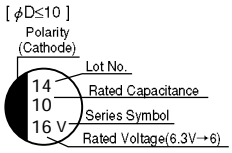
● Solvent proof (within 2 minutes)

■ Specifications

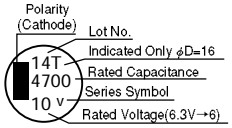
Items	Condition		Specifications								
Rated voltage (V)	–		4	6.3	10	16	25	35	50	63	100
Surge voltage (V)	Room temperature		5.0	8.0	13	20	32	44	63	79	125
Category temperature range (℃)	–		−40 to +85								
Capacitance tolerance (%)	120Hz/20℃		M : ±20								
Dissipation Factor (tan δ)	120Hz/20℃	φ4 to φ6.3	0.35	0.26	0.20	0.16	0.14	0.12	0.12	0.12	0.10
		φ8 to φ16	0.40	0.30	0.24	0.20	0.16	0.14	0.12	0.12	0.10
			When rated capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase.								
Leakage current (LC)	μA/after 2minutes (max)		The greater value of either 0.01CV or 3								
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−25℃ Z/Z20℃	7	4	3	2	2	2	2	2	2
		−40℃ Z/Z20℃	15	8	6	4	4	3	3	3	3
Endurance	85℃, 2,000hrs. rated voltage applied (With the rated ripple current)	△C/C	Within ±25% of the initial value								
		tan δ	≤2 times the initial specified value								
		LC	≤The initial specified value								

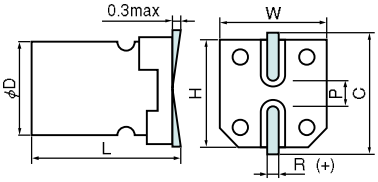
■ Marking, Dimensions

[φD≤10]



[φD≥12.5]





A pressure relief vent is attached to products over φD=8

(Unit : mm)

D +0.5max	L	W ±0.2	H ±0.2	C ±0.2	R	P ±0.2
4	5.4 +0.1 −0.2	4.3	4.3	5.0	0.5 to 0.8	1.0
4	6.0 ±0.3	4.3	4.3	5.0	0.5 to 0.8	1.0
5	5.4 +0.1 −0.2	5.3	5.3	6.0	0.5 to 0.8	1.4
6.3	5.4 +0.1 −0.2	6.6	6.6	7.3	0.5 to 0.8	2.2
6.3	6.0 ±0.3	6.6	6.6	7.3	0.5 to 0.8	2.2
6.3	7.7 ±0.3	6.6	6.6	7.3	0.5 to 0.8	2.2
8	10.2 ±0.3	8.3	8.3	9.0	0.7 to 1.0	3.2
10	7.7 ±0.3	10.3	10.3	11.0	1.0 to 1.4	4.6
10	10.2 ±0.3	10.3	10.3	11.0	1.0 to 1.4	4.6
12.5	13.5 ±0.5	12.8	12.8	13.5	1.0 to 1.4	4.6
16	16.5 ±0.5	16.3	16.3	17.3	1.8 to 2.1	7.0

■ Size List, Rated Ripple Current

μF \ V	4		6.3		10		16		25	
4.7									4×5.4	19
10							4×5.4	25	5×5.4	28
22			4×5.4	31	5×5.4	35	5×5.4	39	6.3×5.4	52
33	4×5.4	26	5×5.4	39	5×5.4	43	6.3×5.4	57	6.3×5.4	63
47	4×5.4	34	5×5.4	47	6.3×5.4	59	6.3×5.4	68	6.3×6.0	68
100	5×5.4	61	6.3×5.4	71	6.3×5.4	76	6.3×5.4	86	6.3×7.7	130
150					6.3×6.0	88	6.3×7.7	135	8×10.2	200
220	6.3×5.4	82	6.3×6.0	95	6.3×7.7	150	6.3×7.7	150	8×10.2	250
									10×7.7	250
330	6.3×6.0	102	6.3×7.7	150	8×10.2	280	8×10.2	280	8×10.2	310
							10×7.7	280		
470	6.3×7.7	150	8×10.2	300	8×10.2	300	8×10.2	330	10×10.2	430
					10×7.7	300				
680			8×10.2	300			10×10.2	450		
			10×7.7	300						
1000			8×10.2	330	10×10.2	450			12.5×13.5	660
	10×7.7	330								
1500			10×10.2	450			12.5×13.5	710		
2200					12.5×13.5	730			16×16.5	1150
3300			12.5×13.5	750			16×16.5	1200		
4700					16×16.5	1260				
6800			16×16.5	1330						

μF \ V	35		50		63		100	
0.47			4×5.4	5	4×5.4	5		
1.0			4×5.4	10	4×5.4	10	4×6.0	10
2.2			4×5.4	15	4×5.4	15	6.3×6.0	20
3.3			4×5.4	18	5×5.4	20	6.3×6.0	28
4.7	4×5.4	20	5×5.4	23	5×5.4	23	6.3×6.0	35
10	5×5.4	30	6.3×5.4	34	6.3×5.4	34	6.3×7.7	50
22	6.3×5.4	54	6.3×6.0	60	6.3×7.7	70	8×10.2	120
33	6.3×6.0	60	6.3×7.7	85	8×10.2	160	10×10.2	190
47	6.3×6.0	70	6.3×7.7	90	8×10.2	170	12.5×13.5	330
68					8×10.2	180	12.5×13.5	350
82			10×7.7	200				
100	6.3×7.7	120	8×10.2	200	10×10.2	280	16×16.5	550
150	8×10.2	220					16×16.5	560
	10×7.7	220						
220	8×10.2	270	10×10.2	320	12.5×13.5	410		
330	10×10.2	340	12.5×13.5	520				
390			12.5×13.5	550				
470	12.5×13.5	590			16×16.5	700		
680	12.5×13.5	610						
1000	16×16.5	1000	16×16.5	940				
1500	16×16.5	1060						

Please refer to page 15 for the ripple current frequency coefficient.

Case size:φDxL(mm)
10×7.7:CE-BSA series
16×16.5:CE-BST

Rated ripple current
mArms(120Hz, 85℃)

■ Model No.

BS series

16 CE 10 BS
- BS: Series code
- 10: Rated capacitance code
- CE: Type code
- 16: Rated voltage

BSA series

10 CE 470 BSA
- BSA: Series code
- 470: Rated capacitance code
- CE: Type code
- 10: Rated voltage

BST

10 CE 4700 BS T
- T: Sn plating terminal code
- BS: Series code
- 4700: Rated capacitance code
- CE: Type code
- 10: Rated voltage

CE-BJ
CE-BE
CE-BD
CE-BSS
CE-BS
CE-FE
CE-FD
CE-LD
CE-FSS
CE-FU
CE-FS
CE-FH
CE-GA
CE-AX
CE-KX
CE-LX
CE-LS
CE-LH
CE-LL
CE-PC
CE-PH
CE-NP
CE-FN
ME-SWB
ME-UZ·SZ
ME-UAX·SAX
ME-LS
ME-HC
ME-CZ
ME-CA
ME-CX
ME-AX
ME-WX
ME-WA
ME-WL
ME-SWG
ME-WG
ME-PX
ME-HPC·HPD
ME-FC·FD
ME-FAZ
ME-FH
ME-SWN
ME-HWN

Aluminum Electrolytic Type / Surface Mount Type **RoHS compliance**

CE-FE Series

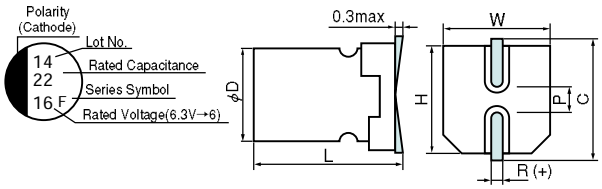
Miniature Low Profile
3.9mm Height

- 105℃, 1,000hrs.
- Solvent proof (within 2 minutes)

■ Specifications

Items	Condition		Specifications					
Rated voltage (V)	–		6.3	10	16	25	35	50
Surge voltage (V)	Room temperature		8.0	13	20	32	44	63
Category temperature range (℃)	–		−40 to +105					
Capacitance tolerance (%)	120Hz/20℃		M : ±20					
Dissipation Factor (tan δ)	120Hz/20℃		0.38	0.32	0.20	0.16	0.14	0.14
Leakage current (LC)	μA/after 2minutes (max)		The greater value of either 0.01CV or 3					
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−25℃ Z/Z20℃	4	3	2	2	2	2
		−40℃ Z/Z20℃	10	8	6	4	4	4
Endurance	105℃, 1,000hrs. rated voltage applied (With the rated ripple current)	△C/C	Within ±30% of the initial value					
		tan δ	≤ 3 times the initial specified value					
		LC	≤ The initial specified value					

■ Marking, Dimensions



(Unit : mm)

D +0.5max	L +0.1 −0.2	W ±0.2	H ±0.2	C ±0.2	R	P ±0.2
5	3.9	5.3	5.3	6.0	0.5 to 0.8	1.4
6.3	3.9	6.6	6.6	7.3	0.5 to 0.8	2.2

■ Size List, Rated Ripple Current

μF \ V	6.3		10		16		25		35		50	
1.0											5×3.9	6
2.2											5×3.9	10
3.3											5×3.9	12
4.7							5×3.9	13	5×3.9	13	5×3.9	16
10					5×3.9	18	5×3.9	21	5×3.9	22	6.3×3.9	23
22					5×3.9★	26						
	5×3.9	23	5×3.9	25	6.3×3.9	31	6.3×3.9	35	6.3×3.9	34		
33			5×3.9★	30								
	5×3.9	28	6.3×3.9	35	6.3×3.9	35	6.3×3.9	42				
47	5×3.9★	34										
	6.3×3.9	42	6.3×3.9	38	6.3×3.9	42						
68	6.3×3.9	49										
100	6.3×3.9	52										

Please refer to page 15 for the ripple current frequency coefficient.
★FES series

Rated ripple current mArms(120Hz, 105℃)

Case size:φDxL(mm)

■ Model No.

FE series

16 CE 22 FE
- FE — Series code
- 22 — Rated capacitance code
- CE — Type code
- 16 — Rated voltage

FES series

16 CE 22 FES
- FES — Series code
- 22 — Rated capacitance code
- CE — Type code
- 16 — Rated voltage

Aluminum Electrolytic Type / Surface Mount Type **RoHS compliance**

CE-FD Series

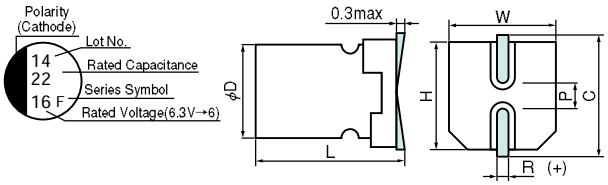
Miniature Low Profile
4.5mm Height

- 105℃, 1,000hrs.
- Solvent proof (within 2 minutes)

■ Specifications

Items	Condition		Specifications					
Rated voltage (V)	–		6.3	10	16	25	35	50
Surge voltage (V)	Room temperature		8.0	13	20	32	44	63
Category temperature range (℃)	–		−40 to +105					
Capacitance tolerance (%)	120Hz/20℃		M : ±20					
Dissipation Factor (tan δ)	120Hz/20℃		0.35	0.28	0.20	0.16	0.14	0.12
Leakage current (LC)	μA/after 2minutes (max)		The greater value of either 0.01CV or 3					
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−25℃ Z/Z20℃	4	3	2	2	2	2
		−40℃ Z/Z20℃	10	8	6	4	4	4
Endurance	105℃, 1,000hrs. rated voltage applied (With the rated ripple current)	△C/C	Within ±25% of the initial value					
		tan δ	≤ 3 times the initial specified value					
		LC	≤ The initial specified value					

■ Marking, Dimensions



(Unit : mm)

D +0.5max	L ±0.1 −0.2	W ±0.2	H ±0.2	C ±0.2	R	P ±0.2
4	4.5	4.3	4.3	5.0	0.5 to 0.8	1.0
5	4.5	5.3	5.3	6.0	0.5 to 0.8	1.4
6.3	4.5	6.6	6.6	7.3	0.5 to 0.8	2.2

■ Size List, Rated Ripple Current

μF \ V	6.3		10		16		25		35		50	
0.47											4×4.5	2.8
1.0											4×4.5	5.9
2.2											4×4.5	9.8
3.3											4×4.5	12
4.7							4×4.5	12	4×4.5	13	5×4.5	15
10					4×4.5	17	5×4.5	19	5×4.5	21	6.3×4.5	24
22	4×4.5	20	5×4.5	24	5×4.5	26	6.3×4.5	33	6.3×4.5	35		
33	5×4.5	26	5×4.5	29	6.3×4.5	36	6.3×4.5	40				
47	5×4.5	32	6.3×4.5	38	6.3×4.5	43	6.3×4.5	44				
100	6.3×4.5	49	6.3×4.5	52								

Please refer to page 15 for the ripple current frequency coefficient.

Rated ripple current mArms(120Hz, 105℃)

Case size:φDxL(mm)

■ Model No.

16 CE 22 FD
- FD — Series code
- 22 — Rated capacitance code
- CE — Type code
- 16 — Rated voltage

CE-BJ
CE-BE
CE-BD
CE-BSS
CE-BS
CE-FE
CE-FD
CE-LD
CE-FSS
CE-FU
CE-FS
CE-FH
CE-GA
CE-AX
CE-KX
CE-LX
CE-LS
CE-LH
CE-LL
CE-PC
CE-PH
CE-NP
CE-FN
ME-SWB
ME-UZ·SZ
ME-UAX·SAX
ME-LS
ME-HC
ME-CZ
ME-CA
ME-CX
ME-AX
ME-WX
ME-WA
ME-WL
ME-SWG
ME-WG
ME-PX
ME-HPC·HPD
ME-FC·FD
ME-FAZ
ME-FH
ME-SWN
ME-HWN

Aluminum Electrolytic Type / Surface Mount Type **RoHS compliance**

CE-LD Series

Low Profile 4.5mm Height

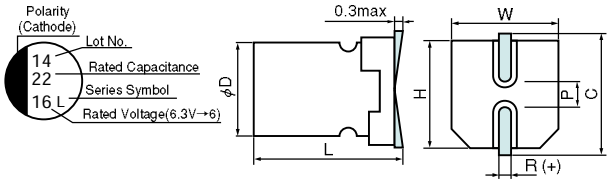
Long Life

- 105℃, 2,000 to 3,000hrs.
- Solvent proof (within 2 minutes)

■ Specifications

Items	Condition		Specifications					
Rated voltage (V)	–		6.3	10	16	25	35	50
Surge voltage (V)	Room temperature		8.0	13	20	32	44	63
Category temperature range (℃)	–		−40 to +105					
Capacitance tolerance (%)	120Hz/20℃		M : ±20					
Dissipation Factor (tan δ)	120Hz/20℃		0.35	0.30	0.20	0.16	0.14	0.12
Leakage current (LC)	μA/after 2minutes (max)		The greater value of either 0.01CV or 3					
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−25℃ Z/Z20℃	4	3	2	2	2	2
		−40℃ Z/Z20℃	10	8	6	4	4	4
Endurance	105℃ rated voltage applied (With the rated ripple current)	Test	φ4 to φ5 : 2,000hrs., φ6.3 : 3,000hrs.					
		△C/C	Within ±30% of the initial value					
		tan δ	≤ 3 times the initial specified value					
		LC	≤ The initial specified value					

■ Marking, Dimensions



(Unit : mm)

D +0.5max	L ±0.1 −0.2	W ±0.2	H ±0.2	C ±0.2	R	P ±0.2
4	4.5	4.3	4.3	5.0	0.5 to 0.8	1.0
5	4.5	5.3	5.3	6.0	0.5 to 0.8	1.4
6.3	4.5	6.6	6.6	7.3	0.5 to 0.8	2.2

■ Size List, Rated Ripple Current

μF \ V	6.3		10		16		25		35		50	
0.47											4×4.5	2.8
1.0											4×4.5	5.9
2.2											4×4.5	10
3.3											4×4.5	12
4.7							4×4.5	12	4×4.5	13	5×4.5	15
10					4×4.5	17	5×4.5	19	5×4.5	24	6.3×4.5	24
22	4×4.5	20	5×4.5	24	5×4.5	26	6.3×4.5	33	6.3×4.5	35		
33	5×4.5	26	5×4.5	29	6.3×4.5	36	6.3×4.5	40				
47	5×4.5	32	6.3×4.5	38	6.3×4.5	43	6.3×4.5	44				
100	6.3×4.5	49	6.3×4.5	52								

Please refer to page 15 for the ripple current frequency coefficient.

Rated ripple current mArms(120Hz, 105℃)

Case size:φDxL(mm)

■ Model No.

16 CE 22 LD

- LD — Series code
- 22 — Rated capacitance code
- CE — Type code
- 16 — Rated voltage

Aluminum Electrolytic Type / Surface Mount Type **RoHS compliance**

CE-FSS Series

Miniature High Capacitance

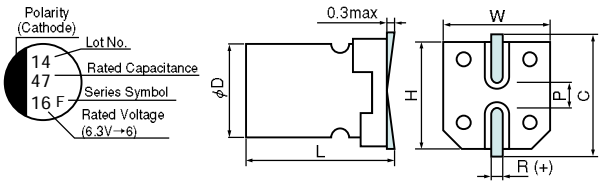
5.4mm Height

- Solvent proof (within 2 minutes)

■ Specifications

Items	Condition		Specifications					
Rated voltage (V)	–		6.3	10	16	25	35	50
Surge voltage (V)	Room temperature		8.0	13	20	32	44	63
Category temperature range (℃)	–		−40 to +105					
Capacitance tolerance (%)	120Hz/20℃		M : ±20					
Dissipation Factor (tanδ)	120Hz/20℃		0.35	0.30	0.26	0.20	0.16	0.12
Leakage current (LC)	μA/after 2minutes (max)		The greater value of either 0.01CV or 3					
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−25℃ Z/Z20℃	4	3	2	2	2	2
		−40℃ Z/Z20℃	10	8	6	4	4	4
Endurance	105℃, 1,000hrs. rated voltage applied (With the rated ripple current)	△C/C	Within ±25% of the initial value(6.3WV:±30%)					
		tanδ	≤ 3 times the initial specified value					
		LC	≤ The initial specified value					

■ Marking, Dimensions



(Unit : mm)

D+0.5max	L±0.1/0.2	W±0.2	H±0.2	C±0.2	R	P±0.2
4	5.4	4.3	4.3	5.0	0.5 to 0.8	1.0
5	5.4	5.3	5.3	6.0	0.5 to 0.8	1.4
6.3	5.4	6.6	6.6	7.3	0.5 to 0.8	2.2

■ Size List, Rated Ripple Current

μF \ V	6.3		10		16		25		35		50	
4.7											4×5.4	16
10							4×5.4	22	4×5.4	22	5×5.4	23
22			4×5.4	28	4×5.4	28	5×5.4	35	5×5.4	35	6.3×5.4	35
33	4×5.4	29	4×5.4	29	5×5.4	35	5×5.4	45	6.3×5.4	42		
47	4×5.4	36	5×5.4	43	5×5.4	39	6.3×5.4	70				
100	5×5.4	47	5×5.4	47								
150	6.3×5.4	71	6.3×5.4	71								
220	6.3×5.4	74										

Please refer to page 15 for the ripple current frequency coefficient.

Rated ripple current mArms(120Hz, 105℃)

Case size:φDxL(mm)

■ Model No.

16 CE 47 FSS
- FSS: Series code
- 47: Rated capacitance code
- CE: Type code
- 16: Rated voltage

CE-BD
CE-BSS
CE-BS
CE-FE
CE-FD
CE-LD
CE-FSS
CE-FU
CE-FS
CE-FH
CE-GA
CE-AX
CE-KX
CE-LX
CE-LS
CE-LH
CE-LL
CE-PC
CE-PH
CE-NP
CE-FN
ME-SWB
ME-UZ·SZ
ME-UAX·SAX
ME-LS
ME-HC
ME-CZ
ME-CA
ME-CX
ME-AX
ME-WX
ME-WA
ME-WL
ME-SWG
ME-WG
ME-PX
ME-HPC·HPD
ME-FC·FD
ME-FAZ
ME-FH
ME-SWN
ME-HWN

Aluminum Electrolytic Type / Surface Mount Type **RoHS compliance**

CE-FU Series

High Temperature Reflow Soldering

5.4mm Height

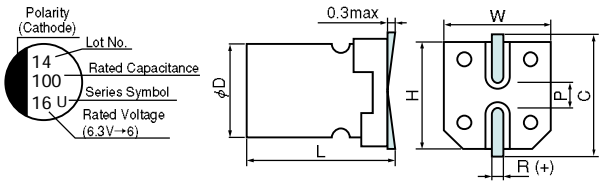
- 105℃, 1,000hrs.
- Solvent proof (within 2 minutes)

NEW

■ Specifications

Items	Condition		Specifications					
Rated voltage (V)	–		6.3	10	16	25	35	50
Surge voltage (V)	Room temperature		8.0	13	20	32	44	63
Category temperature range (℃)	–		−55 to +105					
Capacitance tolerance (%)	120Hz/20℃		M : ±20					
Dissipation Factor (tan δ)	120Hz/20℃		0.30	0.24	0.20	0.16	0.14	0.12
Leakage current (LC)	μA/after 2minutes (max)		The greater value of either 0.01CV or 3					
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−40℃ Z/Z20℃	4	3	2	2	2	2
		−55℃ Z/Z20℃	8	8	4	4	3	3
Endurance	105℃, 1,000hrs. rated voltage applied (With the rated ripple current)	△C/C	Within ±30% of the initial value					
		tan δ	≤ 3 times the initial specified value					
		LC	≤ The initial specified value					

■ Marking, Dimensions



(Unit : mm)

D +0.5max	L +0.1 −0.2	W ±0.2	H ±0.2	C ±0.2	R	P ±0.2
4	5.4	4.3	4.3	5.0	0.5 to 0.8	1.0
5	5.4	5.3	5.3	6.0	0.5 to 0.8	1.4
6.3	5.4	6.6	6.6	7.3	0.5 to 0.8	2.2

■ Size List, Rated Ripple Current

μF \ V	6.3		10		16		25		35		50	
2.2											4×5.4	11
3.3											4×5.4	13
4.7							4×5.4	13	4×5.4	14	5×5.4	16
10					4×5.4	18	5×5.4	20	5×5.4	21	6.3×5.4	24
22	4×5.4	22	5×5.4	25	5×5.4	27	6.3×5.4	36	6.3×5.4	38		
33	5×5.4	27	5×5.4	30	6.3×5.4	40	6.3×5.4	44				
47	5×5.4	33	6.3×5.4	41	6.3×5.4	48						
100	6.3×5.4	50	6.3×5.4	53	6.3×5.4	60						

Please refer to page 15 for the ripple current frequency coefficient.

Case size:φDxL(mm)

Rated ripple current mArms(120Hz, 105℃)

■ Model No.

16 CE 100 FU
- FU — Series code
- 100 — Rated capacitance code
- CE — Type code
- 16 — Rated voltage

Aluminum Electrolytic Type / Surface Mount Type **RoHS compliance**

CE-FS Series

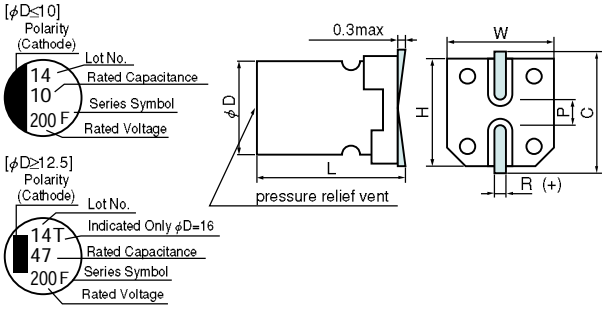
105℃ Standard
Mid.and High Voltage

- 160 to 400V, 105℃, 1,000 to 2,000hrs.
- Do not clean the capacitors using solvent.

■ Specifications

Items	Condition		Specifications			
Rated voltage (V)	–		160	200	250	400
Surge voltage (V)	Room temperature		200	250	300	450
Category temperature range (℃)	–		−40 to +105			
Capacitance tolerance (%)	120Hz/20℃		M : ±20			
Dissipation Factor (tanδ)	120Hz/20℃		0.20			0.25
Leakage current (LC)	μA/after 2minutes (max)	CV ≤ 1,000	0.03CV +15			
		CV > 1,000	0.02CV +25			
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−25℃ Z/Z20℃	3	3	3	6
		−40℃ Z/Z20℃	6	6	6	10
Endurance	105℃ rated voltage applied (With the rated ripple current)	Test	φ8 : 1,000hrs., φ10 to φ16 : 2,000hrs.			
		△C/C	Within ±25% of the initial value			
		tanδ	≤ 2 times the initial specified value			
		LC	≤ The initial specified value			

■ Marking, Dimensions



(Unit : mm)

D +0.5max	L ±0.3	W ±0.2	H ±0.2	C ±0.2	R	P ±0.2
8	10.5	8.3	8.3	9.0	0.7 to 1.0	3.2
10	10.5	10.3	10.3	11.0	1.0 to 1.4	4.6
12.5	13.5 ±0.5	12.8	12.8	13.5	1.0 to 1.4	4.6
16	16.5 ±0.5	16.3	16.3	17.3	1.8 to 2.1	7.0

■ Size List, Rated Ripple Current

μF \ V	160		200		250		400	
2.2							8×10.5	25
3.3					8×10.5	31	10×10.5	36
4.7					8×10.5	37	10×10.5	38
6.8					8×10.5	44	12.5×13.5	47
10	8×10.5	57	10×10.5	64	10×10.5	64	12.5×13.5	57
22	12.5×13.5	112	12.5×13.5	112	12.5×13.5	112	16×16.5	115
33	12.5×13.5	137	12.5×13.5	137	16×16.5	150		
47	16×16.5	180	16×16.5	180	16×16.5	180		
68	16×16.5	215	16×16.5	215				
82	16×16.5	235						

Please refer to page 15 for the ripple current frequency coefficient.

Rated ripple current mArms(120Hz, 105℃)

Case size:φDxL(mm) 16×16.5:CE-FST

■ Model No.

FS series

200 CE 10 FS
- FS: Series code
- 10: Rated capacitance code
- CE: Type code
- 200: Rated voltage

FST

200 CE 47 FS T
- T: Sn plating terminal code
- FS: Series code
- 47: Rated capacitance code
- CE: Type code
- 200: Rated voltage

CE-BJ
CE-BE
CE-BD
CE-BSS
CE-BS
CE-FE
CE-FD
CE-LD
CE-FSS
CE-FU
CE-FS
CE-FH
CE-GA
CE-AX
CE-KX
CE-LX
CE-LS
CE-LH
CE-LL
CE-PC
CE-PH
CE-NP
CE-FN
ME-SWB
ME-UZ·SZ
ME-UAX·SAX
ME-LS
ME-HC
ME-CZ
ME-CA
ME-CX
ME-AX
ME-WX
ME-WA
ME-WL
ME-SWG
ME-WG
ME-PX
ME-HPC·HPD
ME-FC·FD
ME-FAZ
ME-FH
ME-SWN
ME-HWN

Aluminum Electrolytic Type / Surface Mount Type **RoHS compliance**

CE-FS Series

105℃ Standard

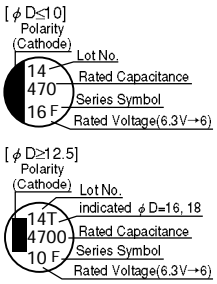
- 105℃, 1,000 to 2,000hrs.
- Solvent proof (within 2 minutes)

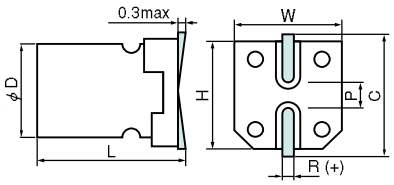
φ18×16.5 NEW

■ Specifications

Items	Condition		Specifications							
Rated voltage (V)	–		6.3	10	16	25	35	50	63	100
Surge Voltage (V)	Room temperature		8.0	13	20	32	44	63	79	125
Category temperature range (℃)	–		−55 to +105							−40 to +105
Capacitance tolerance (%)	120Hz/20℃		M : ±20							
Dissipation Factor (tanδ)	120Hz/20℃	φ4 to φ6.3	0.24	0.20	0.16	0.14	0.12	0.10	0.12	0.10
		φ8 to φ18	0.28	0.24	0.20	0.16	0.14	0.12	0.12	0.10
			When rated capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase.							
Leakage current(LC)	μA/after 2minutes (max)		The greater value of either 0.01CV or 3							
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−40℃ Z/Z20℃	3	3	2	2	2	2	2	3
		−55℃ Z/Z20℃	8	5	4	3	3	3	3	–
Endurance	105℃ rated voltage applied (With the rated ripple current)	Test	φ4 to φ6.3, φ10 × 7.7 : 1,000hrs., φ8 to φ18 : 2,000hrs.							
		△C/C	Within ±25% of the initial value							
		tanδ	≤2 times the initial specified value							
		LC	≤The initial specified value							

■ Marking, Dimensions





A pressure relief vent is attached to products over φD=8

(Unit : mm)

D +0.5max	L	W ±0.2	H ±0.2	C ±0.2	R	P ±0.2
4	5.4 +0.1 −0.2	4.3	4.3	5.0	0.5 to 0.8	1.0
4	6.0 ±0.3	4.3	4.3	5.0	0.5 to 0.8	1.0
5	5.4 +0.1 −0.2	5.3	5.3	6.0	0.5 to 0.8	1.4
6.3	5.4 +0.1 −0.2	6.6	6.6	7.3	0.5 to 0.8	2.2
6.3	6.0 ±0.3	6.6	6.6	7.3	0.5 to 0.8	2.2
6.3	7.7 ±0.3	6.6	6.6	7.3	0.5 to 0.8	2.2
8	10.2 ±0.3	8.3	8.3	9.0	0.7 to 1.0	3.2
10	7.7 ±0.3	10.3	10.3	11.0	1.0 to 1.4	4.6
10	10.2 ±0.3	10.3	10.3	11.0	1.0 to 1.4	4.6
12.5	13.5 ±0.5	12.8	12.8	13.5	1.0 to 1.4	4.6
16	16.5 ±0.5	16.3	16.3	17.3	1.8 to 2.1	7.0
18	16.5 ±1.0	19.0	19.0	20.0	1.7 to 2.1	7.0

■ Size List, Rated Ripple Current

μF \ V	6.3		10		16		25		35	
4.7							4×5.4	13	4×5.4	14
10					4×5.4	18	5×5.4	20	5×5.4	21
22	4×5.4	22	5×5.4	25	5×5.4	27	6.3×5.4	36	6.3×5.4	38
33	5×5.4	27	5×5.4	30	6.3×5.4	40	6.3×5.4	44	6.3×6.0	42
47	5×5.4	33	6.3×5.4	41	6.3×5.4	48	6.3×6.0	48	6.3×6.0	49
100	6.3×5.4	50	6.3×5.4	53	6.3×5.4	60	6.3×7.7	91	6.3×7.7	84
150			6.3×6.0	62	6.3×7.7	95	8×10.2	140	8×10.2	155
									10×7.7	155
220	6.3×6.0	67	6.3×7.7	105	6.3×7.7	105	8×10.2	175	8×10.2	190
							10×7.7	175		
330	6.3×7.7	105	8×10.2	195	8×10.2	195	8×10.2	220	10×10.2	300
					10×7.7	195				
470	8×10.2	210	8×10.2	210	8×10.2	230	10×10.2	300	12.5×13.5	410
			10×7.7	210						
680	8×10.2	210			10×10.2	310			12.5×13.5	430
	10×7.7	210								
1000	8×10.2	230	10×10.2	310			12.5×13.5	460	16×16.5	700
1500	10×10.2	310			12.5×13.5	500			16×16.5	740
2200			12.5×13.5	510			16×16.5	805	18×16.5	950
3300	12.5×13.5	520			16×16.5	840	18×16.5	1040		
4700			16×16.5	880	18×16.5	1090				
6800	16×16.5	930	18×16.5	1150						
10000	18×16.5	1200								

μF \ V	50		63		100	
0.47	4×5.4	3.5	4×5.4	3.5		
1.0	4×5.4	7.0	4×5.4	7.0	4×6.0	7.0
2.2	4×5.4	11	4×5.4	11	6.3×6.0	14
3.3	4×5.4	13	5×5.4	14	6.3×6.0	20
4.7	5×5.4	16	5×5.4	16	6.3×6.0	25
10	6.3×5.4	24	6.3×5.4	24	6.3×7.7	35
22	6.3×6.0	42	6.3×7.7	49	8×10.2	84
33	6.3×7.7	60	8×10.2	112	10×10.2	133
47	6.3×7.7	63	8×10.2	119	12.5×13.5	240
68			8×10.2	126	12.5×13.5	245
82	10×7.7	140				
100	8×10.2	140	10×10.2	196	16×16.5	490
150					16×16.5	500
220	10×10.2	220	12.5×13.5	287	18×16.5	650
330	12.5×13.5	365				
390	12.5×13.5	380				
470			16×16.5	630		
680			18×16.5	750		
1000	16×16.5	655				

Please refer to page 15 for the ripple current frequency coefficient.

Case size:φDxL(mm)
10×7.7:CE-FSA serise
16×16.5, 18×16.5:CE-FST

Rated ripple current
mArms(120Hz, 105℃)

■ Model No.

FS series

16 CE 470 FS
- FS — Series code
- 470 — Rated capacitance code
- CE — Type code
- 16 — Rated voltage

FSA series

10 CE 470 FSA
- FSA — Series code
- 470 — Rated capacitance code
- CE — Type code
- 10 — Rated voltage

FST

10 CE 4700 FS T
- T — Sn plating terminal code
- FS — Series code
- 4700 — Rated capacitance code
- CE — Type code
- 10 — Rated voltage

Aluminum Electrolytic Type / Surface Mount Type **RoHS compliance**

CE-FH Series

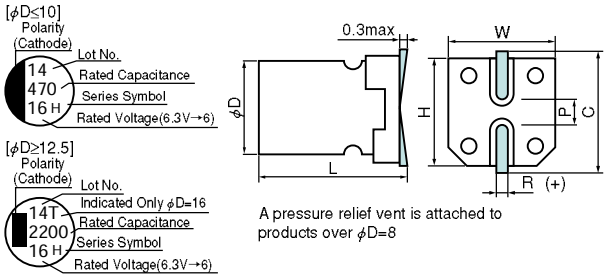
Long Life

- 105℃, 2,000 to 5,000hrs.
- Solvent proof (within 2 minutes)

■ Specifications

Items	Condition		Specifications					
Rated voltage (V)	–		6.3	10	16	25	35	50
Surge voltage (V)	Room temperature		8.0	13	20	32	44	63
Category temperature range (℃)	–		−40 to +105					
Capacitance tolerance (%)	120Hz/20℃		M : ±20					
Dissipation Factor (tanδ)	120Hz/20℃		0.30	0.24	0.20	0.16	0.14	0.14
			When rated capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase.					
Leakage current (LC)	μA/after 2minutes (max)		The greater value of either 0.01CV or 3					
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−25℃ Z/Z20℃	4	3	2	2	2	2
		−40℃ Z/Z20℃	8	6	4	4	3	3
Endurance	105℃ rated voltage applied (With the rated ripple current)	Test	φ4 to φ6.3 : 2,000hrs., φ8 to φ10 : 3,000hrs., φ12.5 to φ16 : 5,000hrs.					
		△C/C	Within ±25% of the initial value					
		tanδ	≤ 2.5 times the initial specified value					
		LC	≤ The initial specified value					

■ Marking, Dimensions



A pressure relief vent is attached to products over φD=8

(Unit : mm)

D +0.5max	L ±0.3	W ±0.2	H ±0.2	C ±0.2	R	P ±0.2
4	6.0	4.3	4.3	5.0	0.5 to 0.8	1.0
5	6.0	5.3	5.3	6.0	0.5 to 0.8	1.4
6.3	6.0	6.6	6.6	7.3	0.5 to 0.8	2.2
6.3	7.7	6.6	6.6	7.3	0.5 to 0.8	2.2
8	10.2	8.3	8.3	9.0	0.7 to 1.0	3.2
10	10.2	10.3	10.3	11.0	1.0 to 1.4	4.6
12.5	13.5 ±0.5	12.8	12.8	13.5	1.0 to 1.4	4.6
16	16.5 ±0.5	16.3	16.3	17.3	1.8 to 2.1	7.0

■ Size List, Rated Ripple Current

μF \ V	6.3		10		16		25		35		50	
1.0											4×6.0	7
2.2											4×6.0	11
3.3											4×6.0	13
4.7							4×6.0	13	4×6.0	15	5×6.0	19
10					4×6.0	18	5×6.0	23	5×6.0	25	6.3×6.0	32
22	4×6.0	22	5×6.0	27	5×6.0	30	6.3×6.0	42	6.3×6.0	44	6.3×7.7	60
33	5×6.0	30	5×6.0	35	6.3×6.0	44	6.3×6.0	58	6.3×7.7	77	8×10.2	140
47	5×6.0	36	6.3×6.0	46	6.3×6.0	60	6.3×7.7	91	8×10.2	150	8×10.2	150
100	6.3×6.0	67	6.3×6.0	62	6.3×7.7	95	8×10.2	150	8×10.2	160	10×10.2	220
220	6.3×7.7	105	8×10.2	175	8×10.2	175	8×10.2	195	10×10.2	290	12.5×13.5	340
330	8×10.2	195	8×10.2	195	8×10.2	210	10×10.2	290	12.5×13.5	380		
470	8×10.2	210	8×10.2	210	10×10.2	290	12.5×13.5	400			16×16.5	610
680			10×10.2	300			12.5×13.5	415				
1000	10×10.2	300			12.5×13.5	440			16×16.5	620		
1500			12.5×13.5	480			16×16.5	720				
2200	12.5×13.5	490			16×16.5	785						
3300			16×16.5	820								
4700	16×16.5	860										

Please refer to page 15 for the ripple current frequency coefficient.

Rated ripple current mArms(120Hz, 105℃)

Case size:φDxL(mm) 16×16.5:CE-FHT

■ Model No.

FH series

16 CE 470 FH
- FH: Series code
- 470: Rated capacitance code
- CE: Type code
- 16: Rated voltage

FHT

16 CE 2200 FH T
- T: Sn plating terminal code
- FH: Series code
- 2200: Rated capacitance code
- CE: Type code
- 16: Rated voltage

Aluminum Electrolytic Type / Surface Mount Type **RoHS compliance**

CE-GA Series

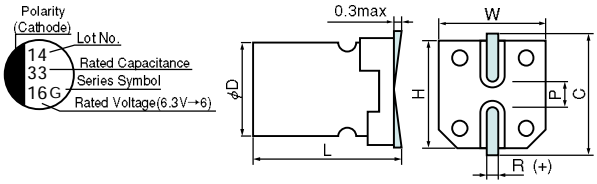
Low Impedance
5.4mm Height

- 105℃, 1,000hrs.
- Solvent proof (within 2 minutes)

■ Specifications

Items	Condition		Specifications						
Rated voltage (V)	–		6.3	10	16	25	35	50	63
Surge voltage (V)	Room temperature		8.0	13	20	32	44	63	79
Category temperature range (℃)	–		−55 to +105						
Capacitance tolerance (%)	120Hz/20℃		M : ±20						
Dissipation Factor (tanδ)	120Hz/20℃		0.24	0.20	0.16	0.14	0.12	0.12	0.12
Leakage current (LC)	μA/after 2minutes (max)		The greater value of either 0.01CV or 3						
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−40℃ Z/Z20℃	3	2	2	2	2	2	2
		−55℃ Z/Z20℃	5	4	4	3	3	3	3
Endurance	105℃, 1,000hrs. rated voltage applied (With the rated ripple current)	△C/C	Within ±25% of the initial value						
		tanδ	≤ 2 times the initial specified value						
		LC	≤ The initial specified value						

■ Marking, Dimensions



(Unit : mm)

D+0.5max	L±0.1 −0.2	W±0.2	H±0.2	C±0.2	R	P±0.2
4	5.4	4.3	4.3	5.0	0.5 to 0.8	1.0
5	5.4	5.3	5.3	6.0	0.5 to 0.8	1.4
6.3	5.4	6.6	6.6	7.3	0.5 to 0.8	2.2

■ Size List, Impedance, Rated Ripple Current

μF \ V	6.3			10			16			25			35			50			63		
1.0													4	3.1	68	4	7.4	37	4	8.0	20
2.2													4	2.9	68	4	6.6	45	4	8.0	24
3.3													4	2.7	68	4	5.4	52	5	3.5	40
4.7										4	2.3	68	4	2.3	68	5	2.9	75	5	3.5	40
10							4	2.3	68	5	1.1	105	5	1.1	105	6.3	1.3	120	6.3	1.6	65
22	4	2.3	68	5	1.1	105	5	1.1	105	6.3	0.6	155	6.3	0.6	155	6.3	1.3	120			
33	5	1.1	105	5	1.1	105	6.3	0.6	155	6.3	0.6	155	6.3	0.6	155						
47	5	1.1	105	6.3	0.6	155	6.3	0.6	155	6.3	0.6	155	6.3	0.6	155						
100	6.3	0.6	155	6.3	0.6	155	6.3	0.6	155												
220	6.3	0.6	155																		

Please refer to page 15 for the ripple current frequency coefficient.

Rated ripple current mArms(100kHz, 105℃)
Case size:φD(mm)
Impedance(Ω) max at 100kHz, 20℃

■ Model No.

16 CE 33 GA
- GA: Series code
- 33: Rated capacitance code
- CE: Type code
- 16: Rated voltage

CE-BJ
CE-BE
CE-BD
CE-BSS
CE-BS
CE-FE
CE-FD
CE-LD
CE-FSS
CE-FU
CE-FS
CE-FH
CE-GA
CE-AX
CE-KX
CE-LX
CE-LS
CE-LH
CE-LL
CE-PC
CE-PH
CE-NP
CE-FN
ME-SWB
ME-UZ·SZ
ME-UAX·SAX
ME-LS
ME-HC
ME-CZ
ME-CA
ME-CX
ME-AX
ME-WX
ME-WA
ME-WL
ME-SWG
ME-WG
ME-PX
ME-HPC·HPD
ME-FC·FD
ME-FAZ
ME-FH
ME-SWN
ME-HWN

Aluminum Electrolytic Type / Surface Mount Type **RoHS compliance**

CE-AX Series

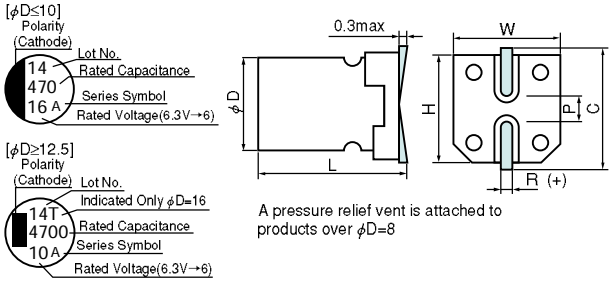
Low Impedance

- 105℃, 1,000 to 2,000hrs.
- Solvent proof (within 2 minutes)

■ Specifications

Items	Condition		Specifications					
Rated voltage (V)	–		6.3	10	16	25	35	50
Surge voltage (V)	Room temperature		8.0	13	20	32	44	63
Category temperature range (℃)	–		−55 to +105					
Capacitance tolerance (%)	120Hz/20℃		M : ±20					
Dissipation Factor (tanδ)	120Hz/20℃	φ4 to φ6.3	0.24	0.20	0.16	0.14	0.12	0.12
		φ8 to φ16	0.28	0.24	0.20	0.16	0.14	0.14
			When rated capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase.					
Leakage current(LC)	μA/after 2minutes (max)		The greater value of either 0.01CV or 3					
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−40℃ Z/Z20℃	3	2	2	2	2	2
		−55℃ Z/Z20℃	5	4	4	3	3	3
Endurance	105℃ rated voltage applied (With the rated ripple current)	Test	φ4 to φ6.3, φ10×7.7 : 1,000hrs., φ8 to φ16 : 2,000hrs.					
		△C/C	Within ±25% of the initial value					
		tanδ	≤ 2 times the initial specified value					
		LC	≤ The initial specified value					

■ Marking, Dimensions



A pressure relief vent is attached to products over φD=8

(Unit : mm)

D +0.5max	L ±0.3	W ±0.2	H ±0.2	C ±0.2	R	P ±0.2
4	6.0	4.3	4.3	5.0	0.5 to 0.8	1.0
5	6.0	5.3	5.3	6.0	0.5 to 0.8	1.4
6.3	6.0	6.6	6.6	7.3	0.5 to 0.8	2.2
6.3	7.7	6.6	6.6	7.3	0.5 to 0.8	2.2
8	10.2	8.3	8.3	9.0	0.7 to 1.0	3.2
10	7.7	10.3	10.3	11.0	1.0 to 1.4	4.6
10	10.2	10.3	10.3	11.0	1.0 to 1.4	4.6
12.5	13.5 ±0.5	12.8	12.8	13.5	1.0 to 1.4	4.6
16	16.5 ±0.5	16.3	16.3	17.3	1.8 to 2.1	7.0

CE-BJ
CE-BE
CE-BD
CE-BSS
CE-BS
CE-FE
CE-FD
CE-LD
CE-FSS
CE-FU
CE-FS
CE-FH
CE-GA
CE-AX
CE-KX
CE-LX
CE-LS
CE-LH
CE-LL
CE-PC
CE-PH
CE-NP
CE-FN
ME-SWB
ME-UZ·SZ
ME-UAX·SAX
ME-LS
ME-HC
ME-CZ
ME-CA
ME-CX
ME-AX
ME-WX
ME-WA
ME-WL
ME-SWG
ME-WG
ME-PX
ME-HPC·HPD
ME-FC·FD
ME-FAZ
ME-FH
ME-SWN
ME-HWN

■ Size List, Impedance, Rated Ripple Current

μF \ V	6.3			10			16			25			35			50		
4.7													4×6.0	1.80	80	4×6.0	2.90	60
10										4×6.0	1.80	80	5×6.0	0.76	150	6.3×6.0	0.88	165
15							4×6.0	1.80	80	5×6.0	0.76	150	5×6.0	0.76	150			
22				4×6.0	1.80	80	5×6.0	0.76	150	5×6.0	0.76	150	5×6.0	0.76	150	6.3×6.0	0.88	165
27	4×6.0	1.80	80															
33	→			5×6.0	0.76	150	→			6.3×6.0	0.44	230	6.3×6.0	0.44	230	6.3×7.7	0.68	195
47	5×6.0	0.76	150	→			6.3×6.0	0.44	230	6.3×6.0	0.44	230	6.3×6.0	0.44	230	6.3×7.7	0.68	195
56	5×6.0	0.76	150							6.3×6.0	0.44	230						
68	→			6.3×6.0	0.44	230	6.3×6.0	0.44	230	6.3×6.0	0.44	230	6.3×7.7	0.34	280			
100	6.3×6.0	0.44	230	→			6.3×6.0	0.44	230	6.3×7.7	0.34	280	8×10.2	0.17	450	8×10.2	0.39	300
150	6.3×6.0	0.44	230	6.3×6.0	0.44	230	6.3×7.7	0.34	280	8×10.2	0.17	450	8×10.2	0.17	450	10×10.2	0.21	450
										→			10×7.7	0.17	450			
220	6.3×6.0	0.44	230	6.3×7.7	0.34	280	6.3×7.7	0.34	280	8×10.2	0.17	450	8×10.2	0.17	450	10×10.2	0.21	450
										10×7.7	0.17	450						
330	6.3×7.7	0.34	280	8×10.2	0.17	450	8×10.2	0.17	450	8×10.2	0.17	450	10×10.2	0.090	670	12.5×13.5	0.14	620
				→			10×7.7	0.17	450									
390																12.5×13.5	0.14	620
470	8×10.2	0.17	450	8×10.2	0.17	450	8×10.2	0.17	450	10×10.2	0.090	670	12.5×13.5	0.066	900			
				10×7.7	0.17	450												
680	8×10.2	0.17	450	→			10×10.2	0.090	670				12.5×13.5	0.066	900			
	10×7.7	0.17	450															
1000	8×10.2	0.17	450	10×10.2	0.090	670				12.5×13.5	0.066	900				16×16.5	0.078	790
1500	10×10.2	0.090	670				12.5×13.5	0.066	900				16×16.5	0.052	1250			
2200				12.5×13.5	0.066	900				16×16.5	0.052	1250						
3300	12.5×13.5	0.066	900				16×16.5	0.052	1250									
4700				16×16.5	0.052	1250												
6800	16×16.5	0.052	1250															

→Use next higher voltage product.
Please refer to page 15 for the ripple current frequency coefficient.

Case size:φDxL(mm)
10×7.7:CE-AXA series
16×16.5:CE-AXT

Impedance(Ω)
max at 100kHz, 20℃

Rated ripple current
mArms(100kHz, 105℃)

■ Model No.

AX series

16 CE 470 AX
- AX: Series code
- 470: Rated capacitance code
- CE: Type code
- 16: Rated voltage

AXA series

10 CE 470 AXA
- AXA: Series code
- 470: Rated capacitance code
- CE: Type code
- 10: Rated voltage

AXT

10 CE 4700 AX T
- T: Sn plating terminal code
- AX: Series code
- 4700: Rated capacitance code
- CE: Type code
- 10: Rated voltage

Aluminum Electrolytic Type / Surface Mount Type **RoHS compliance**

CE-KX Series

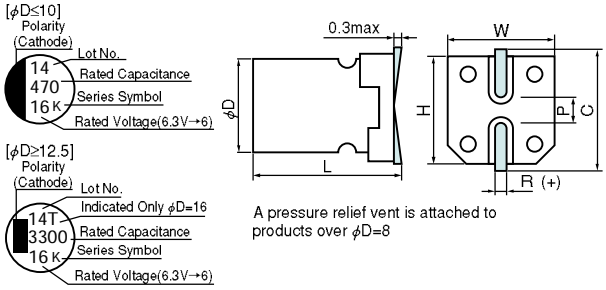
Low Impedance

- This series has 10 to 20% less impedance with same package than CE-AX series.
- 105℃, 1,000 to 2,000hrs. ● Solvent proof (within 2 minutes)

■ Specifications

Items	Condition		Specifications								
Rated voltage (V)	–		6.3	10	16	25	35	50	63	80	100
Surge voltage (V)	Room temperature		8.0	13	20	32	44	63	79	100	125
Category temperature range (℃)	–		−55 to +105								
Capacitance tolerance (%)	120Hz/20℃		M : ±20								
Dissipation Factor (tanδ)	120Hz/20℃	φ4 to φ6.3	0.24	0.20	0.16	0.14	0.12	0.12	0.10	0.08	0.07
		φ8 to φ16	0.28	0.24	0.20	0.16	0.14	0.14	0.12	0.10	0.08
			When rated capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase.								
Leakage current(LC)	μA/after 2minutes (max)		The greater value of either 0.01CV or 3								
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−40℃ Z/Z20℃	3	2	2	2	2	2	2	2	2
		−55℃ Z/Z20℃	5	4	4	3	3	3	3	3	3
Endurance	105℃ rated voltage applied (With the rated ripple current)	Test	φ4 to φ6.3 : 1,000hrs., φ8 to φ16 : 2,000hrs.								
		△C/C	Within ±25% of the initial value								
		tanδ	≤2 times the initial specified value								
		LC	≤The initial specified value								

■ Marking, Dimensions



A pressure relief vent is attached to products over φD=8

(Unit : mm)

D +0.5max	L ±0.3	W ±0.2	H ±0.2	C ±0.2	R	P ±0.2
4	6.0	4.3	4.3	5.0	0.5 to 0.8	1.0
5	6.0	5.3	5.3	6.0	0.5 to 0.8	1.4
6.3	6.0	6.6	6.6	7.3	0.5 to 0.8	2.2
6.3	7.7	6.6	6.6	7.3	0.5 to 0.8	2.2
8	10.2	8.3	8.3	9.0	0.7 to 1.0	3.2
10	10.2	10.3	10.3	11.0	1.0 to 1.4	4.6
12.5	13.5 ±0.5	12.8	12.8	13.5	1.0 to 1.4	4.6
16	16.5 ±0.5	16.3	16.3	17.3	1.8 to 2.1	7.0

■ Size List, Impedance, Rated Ripple Current

μF \ V	6.3			10			16			25			35		
4.7													4×6.0	1.45	90
10										4×6.0	1.45	90	5×6.0	0.70	170
15							4×6.0	1.45	90	5×6.0	0.70	170	5×6.0	0.70	170
22				4×6.0	1.45	90	5×6.0	0.70	170	5×6.0	0.70	170	5×6.0	0.70	170
27	4×6.0	1.45	90												
33	→			5×6.0	0.70	170	→			6.3×6.0	0.39	250	6.3×6.0	0.39	250
47	5×6.0	0.70	170	→			6.3×6.0	0.39	250	6.3×6.0	0.39	250	6.3×6.0	0.39	250
56	5×6.0	0.70	170							6.3×6.0	0.39	250			
68	→			6.3×6.0	0.39	250	6.3×6.0	0.39	250	6.3×6.0	0.39	250	6.3×7.7	0.30	300
100	6.3×6.0	0.39	250	→			6.3×6.0	0.39	250	6.3×7.7	0.30	300	8×10.2	0.15	600
150	6.3×6.0	0.39	250	6.3×6.0	0.39	250	6.3×7.7	0.30	300	8×10.2	0.15	600	8×10.2	0.15	600
220	6.3×6.0	0.39	250	6.3×7.7	0.30	300	6.3×7.7	0.30	300	8×10.2	0.15	600	8×10.2	0.15	600
330	6.3×7.7	0.30	300	8×10.2	0.15	600	8×10.2	0.15	600	8×10.2	0.15	600	10×10.2	0.080	850
470	8×10.2	0.15	600	8×10.2	0.15	600	8×10.2	0.15	600	10×10.2	0.080	850	12.5×13.5	0.058	1150
680	8×10.2	0.15	600	→			10×10.2	0.080	850				12.5×13.5	0.058	1150
1000	8×10.2	0.15	600	10×10.2	0.080	850				12.5×13.5	0.058	1150	16×16.5	0.035	1800
1500	10×10.2	0.080	850				12.5×13.5	0.058	1150				16×16.5	0.035	1800
2200				12.5×13.5	0.058	1150				16×16.5	0.035	1800			
3300	12.5×13.5	0.058	1150				16×16.5	0.035	1800						
4700				16×16.5	0.035	1800									
6800	16×16.5	0.035	1800												

μF \ V	50			63			80			100		
3.3										6.3×6.0	2.40	45
4.7	4×6.0	2.55	64	5×6.0	2.00	55	6.3×6.0	2.40	45	6.3×6.0	2.40	45
10	6.3×6.0	0.52	215	6.3×6.0	1.00	90	6.3×7.7	2.00	65	6.3×7.7	2.00	65
22	6.3×6.0	0.52	215	6.3×7.7	0.80	135	8×10.2	0.90	140	8×10.2	0.90	140
33	6.3×7.7	0.44	243	8×10.2	0.35	280	8×10.2	0.90	140	10×10.2	0.50	220
47	6.3×7.7	0.44	243	8×10.2	0.35	280	10×10.2	0.50	220	12.5×13.5	0.24	500
68							12.5×13.5	0.24	500	12.5×13.5	0.24	500
100	8×10.2	0.22	400	10×10.2	0.20	480	12.5×13.5	0.24	500	16×16.5	0.14	800
150							12.5×13.5	0.24	500	16×16.5	0.14	800
220	10×10.2	0.13	585	12.5×13.5	0.14	800						
330	12.5×13.5	0.10	800				16×16.5	0.14	800			
470				16×16.5	0.065	1410						
1000	16×16.5	0.060	1610									

→Use next higher voltage product.
Please refer to page 15 for the ripple current frequency coefficient.

Case size:φDxL(mm)
16×16.5:CE-KXT

Rated ripple current
mArms(100kHz, 105℃)

Impedance(Ω)
max at 100kHz, 20℃

■ Model No.

KX series

16 CE 470 KX
- KX: Series code
- 470: Rated capacitance code
- CE: Type code
- 16: Rated voltage

KXT

16 CE 3300 KX T
- T: Sn plating terminal code
- KX: Series code
- 3300: Rated capacitance code
- CE: Type code
- 16: Rated voltage

Aluminum Electrolytic Type / Surface Mount Type **RoHS compliance**

CE-LX Series

Low Impedance
Long Life

- 105℃, 2,000 to 5,000hrs.
- Solvent proof (within 2 minutes)

φ18×16.5 NEW

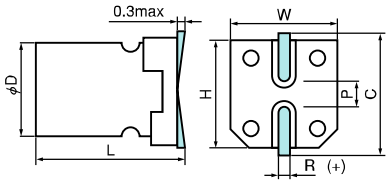
■ Specifications

Items	Condition		Specifications								
Rated voltage (V)	–		6.3	10	16	25	35	50	63	80	100
Surge voltage (V)	Room temperature		8.0	13	20	32	44	63	79	100	125
Category temperature range (℃)	–		−55 to +105								
Capacitance tolerance (%)	120Hz/20℃		M : ±20								
Dissipation Factor (tanδ)	120Hz/20℃	φ4 to φ6.3	0.26	0.20	0.16	0.14	0.12	0.12	—	—	—
		φ8 to φ18	0.28	0.24	0.22	0.16	0.14	0.14	0.08	0.08	0.07
			When rated capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase.								
Leakage current (LC)	μA/after 2minutes (max)		The greater value of either 0.01CV or 3								
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−40℃ Z/Z20℃	3	3	3	3	3	3	2	2	2
		−55℃ Z/Z20℃	4	4	4	3	3	3	3	3	3
Endurance	105℃ rated voltage applied (With the rated ripple current)	Test	φ4 to φ6.3, φ10×7.7 : 2,000hrs., φ8 to φ18 : 5,000hrs.								
		△C/C	Within ±30% of the initial value								
		tanδ	≤ 3 times the initial specified value								
		LC	≤ The initial specified value								

■ Marking, Dimensions

[φD≤10]
Polarity (Cathode)
Lot No.
14
470
16 L
Rated Capacitance
Series Symbol
Rated Voltage(6.3V→6)

[φD≥12.5]
Polarity (Cathode)
Lot No.
Indicated φD=16, 18
14T
3300
16 L
Rated Capacitance
Series Symbol
Rated Voltage(6.3V→6)



A pressure relief vent is attached to products over φD=8

(Unit : mm)

D+0.5max	L±0.3	W±0.2	H±0.2	C±0.2	R	P±0.2
4	6.0	4.3	4.3	5.0	0.5 to 0.8	1.0
5	6.0	5.3	5.3	6.0	0.5 to 0.8	1.4
6.3	6.0	6.6	6.6	7.3	0.5 to 0.8	2.2
6.3	7.7	6.6	6.6	7.3	0.5 to 0.8	2.2
8	10.2	8.3	8.3	9.0	0.7 to 1.0	3.2
10	7.7	10.3	10.3	11.0	1.0 to 1.4	4.6
10	10.2	10.3	10.3	11.0	1.0 to 1.4	4.6
12.5	13.5+0.5	12.8	12.8	13.5	1.0 to 1.4	4.6
16	16.5+0.5	16.3	16.3	17.3	1.8 to 2.1	7.0
18	16.5±1.0	19.0	19.0	20.0	1.7 to 2.1	7.0

■ Model No.

LX series
16 CE 470 LX
- Series code
- Rated capacitance code
- Type code
- Rated voltage

LXT
16 CE 3300 LX T
- Sn plating terminal code
- Series code
- Rated capacitance code
- Type code
- Rated voltage

LXA series
16 CE 330 LXA
- Series code
- Rated capacitance code
- Type code
- Rated voltage

■ Size List, Impedance, Rated Ripple Current

μF \ V	6.3			10			16			25			35		
4.7													4×6.0	1.45	90
10										4×6.0	1.45	90	5×6.0	0.70	170
15							4×6.0	1.45	90	5×6.0	0.70	170	5×6.0	0.70	170
22				4×6.0	1.45	90	5×6.0	0.70	170	5×6.0	0.70	170	5×6.0	0.70	170
27	4×6.0	1.45	90	5×6.0	0.70	170	5×6.0	0.70	170	6.3×6.0	0.39	250	6.3×6.0	0.39	250
33	5×6.0	0.70	170	5×6.0	0.70	170	6.3×6.0	0.39	250	6.3×6.0	0.39	250	6.3×6.0	0.39	250
47	5×6.0	0.70	170	6.3×6.0	0.39	250	6.3×6.0	0.39	250	6.3×6.0	0.39	250	6.3×6.0	0.39	250
56	5×6.0	0.70	170	6.3×6.0	0.39	250	6.3×6.0	0.39	250	6.3×6.0	0.39	250	6.3×7.7	0.30	300
68	6.3×6.0	0.39	250	6.3×6.0	0.39	250	6.3×6.0	0.39	250	6.3×6.0	0.39	250	6.3×7.7	0.30	300
100	5×6.0 ★2	0.70	170										6.3×7.7 ★2	0.30	300
	6.3×6.0	0.39	250	6.3×6.0	0.39	250	6.3×6.0	0.39	250	6.3×7.7	0.30	300	8×10.2	0.17	450
150	6.3×6.0	0.39	250	6.3×6.0	0.39	250	6.3×7.7	0.30	300	8×10.2	0.17	450	8×10.2	0.17	450
													10×7.7 ★1	0.17	450
220	6.3×6.0	0.39	250	6.3×7.7	0.30	300	6.3×7.7	0.30	300	8×10.2	0.17	450	8×10.2	0.17	450
										10×7.7 ★1	0.17	450			
330	6.3×7.7	0.30	300	8×10.2	0.17	450	8×10.2	0.17	450	8×10.2	0.17	450	10×10.2	0.090	670
							10×7.7 ★1	0.17	450						
470	8×10.2	0.17	450	8×10.2	0.17	450	8×10.2	0.17	450	10×10.2	0.090	670			
				10×7.7 ★1	0.17	450							12.5×13.5	0.060	900
680	8×10.2	0.17	450	10×10.2	0.090	670	10×10.2	0.090	670						
	10×7.7 ★1	0.17	450							12.5×13.5	0.060	900	12.5×13.5	0.060	900
1000	8×10.2	0.17	450	10×10.2	0.090	670	12.5×13.5	0.060	900	12.5×13.5	0.060	900	16×16.5	0.035	1800
1500	10×10.2	0.090	670	12.5×13.5	0.060	900	12.5×13.5	0.060	900	16×16.5	0.035	1800	16×16.5	0.035	1800
2200	12.5×13.5	0.060	900	12.5×13.5	0.060	900				16×16.5	0.035	1800	18×16.5	0.033	2060
3300							16×16.5	0.035	1800	18×16.5	0.033	2060			
4700				16×16.5	0.035	1800	18×16.5	0.033	2060						
6800	16×16.5	0.035	1800	18×16.5	0.033	2060									
8200	18×16.5	0.033	2060												
10000	18×16.5	0.033	2060												

μF \ V	50			63			80			100		
4.7	4×6.0	2.90	60									
10	6.3×6.0	0.88	165									
22	6.3×6.0	0.88	165									
27	6.3×7.7	0.68	195									
33	6.3×7.7	0.68	195							10×10.2	0.65	200
47	6.3×7.7	0.68	195	10×7.7 ★1	0.70	200	10×10.2	0.65	200	12.5×13.5	0.32	500
56	8×10.2	0.34	300									
68	8×10.2	0.34	300							12.5×13.5	0.32	500
100	8×10.2	0.34	300	12.5×13.5	0.16	580	12.5×13.5	0.32	500	16×16.5	0.17	793
	10×7.7 ★1	0.34	300									
150	10×10.2	0.18	490	12.5×13.5	0.16	580	12.5×13.5	0.32	500	16×16.5	0.17	793
220	10×10.2	0.18	490	12.5×13.5	0.16	580				18×16.5	0.153	917
330	12.5×13.5	0.12	620				16×16.5	0.17	793			
470	16×16.5	0.073	1610	16×16.5	0.082	1410						
680	16×16.5	0.073	1610	18×16.5	0.080	1690						
1000	16×16.5	0.073	1610									
1200	18×16.5	0.068	1900									

Please refer to page 15 for the ripple current frequency coefficient.

★1 LXA series
★2 LXS series

Case size:φDxL(mm) 16×16.5, 18×16.5:CE-LXT

Impedance(Ω) max at 100kHz, 20℃

Rated ripple current mArms(100kHz, 105℃)

Aluminum Electrolytic Type / Surface Mount Type **RoHS compliance**

CE-LS Series

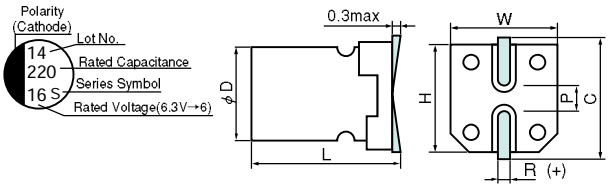
Low Impedance
Long Life

- 105℃, 3,000hrs.
- Solvent proof (within 2 minutes)

■ Specifications

Items	Condition		Specifications					
Rated voltage (V)	–		6.3	10	16	25	35	50
Surge voltage (V)	Room temperature		8.0	13	20	32	44	63
Category temperature range (℃)	–		−40 to +105					
Capacitance tolerance (%)	120Hz/20℃		M : ±20					
Dissipation Factor (tan δ)	120Hz/20℃		0.28	0.24	0.22	0.16	0.13	0.12
Leakage current (LC)	μA/after 2minutes (max)		The greater value of either 0.01CV or 3					
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−25℃ Z/Z20℃	4	3	2	2	2	2
		−40℃ Z/Z20℃	10	7	5	3	3	3
Endurance	105℃, 3,000hrs. rated voltage applied (With the rated ripple current)	△C/C	Within ±30% of the initial value					
		tan δ	≤ 3 times the initial specified value					
		LC	≤ The initial specified value					

■ Marking, Dimensions



(Unit : mm)

D +0.5max	L ±0.3	W ±0.2	H ±0.2	C ±0.2	R	P ±0.2
5	6.0	5.3	5.3	6.0	0.5 to 0.8	1.4
6.3	6.0	6.6	6.6	7.3	0.5 to 0.8	2.2
6.3	7.7	6.6	6.6	7.3	0.5 to 0.8	2.2

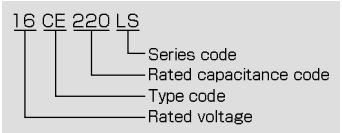
■ Size List, Impedance, Rated Ripple Current

μF \ V	6.3			10			16			25			35			50		
10													5×6.0	1.30	95	6.3×6.0	2.00	70
22							5×6.0	1.30	95	5×6.0	1.30	95	6.3×6.0	0.70	140	6.3×6.0	2.00	70
33				5×6.0	1.30	95				6.3×6.0	0.70	140				6.3×7.7	1.35	100
47	5×6.0	1.30	95				6.3×6.0	0.70	140	6.3×6.0	0.70	140	6.3×7.7	0.60	230			
100	6.3×6.0	0.70	140				6.3×6.0	0.70	140	6.3×7.7	0.60	230						
150				6.3×6.0	0.70	140	6.3×7.7	0.60	230									
220	6.3×7.7	0.60	230				6.3×7.7	0.60	230									
330	6.3×7.7	0.60	230															

Please refer to page 15 for the ripple current frequency coefficient.

Impedance(Ω) max at 100kHz, 20℃
Case size:φDxL(mm)
Rated ripple current mArms(100kHz, 105℃)

■ Model No.



Aluminum Electrolytic Type / Surface Mount Type **RoHS compliance**

CE-LH Series

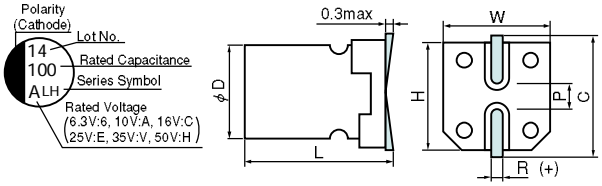
Long Life

- 105℃, 5,000hrs.
- Solvent proof (within 2 minutes)

■ Specifications

Items	Condition		Specifications					
Rated voltage (V)	–		6.3	10	16	25	35	50
Surge voltage (V)	Room temperature		8.0	13	20	32	44	63
Category temperature range (℃)	–		−40 to +105					
Capacitance tolerance (%)	120Hz/20℃		M : ±20					
Dissipation Factor (tanδ)	120Hz/20℃		0.32	0.24	0.20	0.16	0.13	0.12
Leakage current (LC)	μA/after 2minutes (max)		The greater value of either 0.01CV or 3					
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−25℃ Z/Z20℃	4	3	2	2	2	2
		−40℃ Z/Z20℃	10	7	5	3	3	3
Endurance	105℃, 5,000hrs. rated voltage applied (With the rated ripple current)	△C/C	Within ±30% of the initial value					
		tanδ	≤ 3 times the initial specified value					
		LC	≤ The initial specified value					

■ Marking, Dimensions



(Unit : mm)

D+0.5max	L±0.3	W±0.2	H±0.2	C±0.2	R	P±0.2
4	6.0	4.3	4.3	5.0	0.5 to 0.8	1.0
5	6.0	5.3	5.3	6.0	0.5 to 0.8	1.4
6.3	6.0	6.6	6.6	7.3	0.5 to 0.8	2.2
6.3	7.7	6.6	6.6	7.3	0.5 to 0.8	2.2

■ Size List, Rated Ripple Current

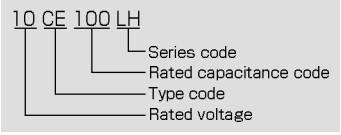
μF \ V	6.3		10		16		25		35		50	
1.0											4×6.0	6.2
2.2											4×6.0	11
3.3											4×6.0	14
4.7									4×6.0	15	5×6.0	19
10					4×6.0	18	5×6.0	25	5×6.0	25	6.3×6.0	30
22			5×6.0	30	5×6.0	30	6.3×6.0	42	6.3×6.0	42	6.3×7.7	49
33	5×6.0	35	5×6.0	35	6.3×6.0	48	6.3×6.0	48	6.3×7.7	57		
47	5×6.0	36	6.3×6.0	50	6.3×6.0	50	6.3×7.7	63				
100	6.3×6.0	60	6.3×7.7	81	6.3×7.7	81						
220	6.3×7.7	101										

Please refer to page 15 for the ripple current frequency coefficient.

Rated ripple current mArms(120Hz, 105℃)

Case size:φDxL(mm)

■ Model No.



CE-BJ
CE-BE
CE-BD
CE-BSS
CE-BS
CE-FE
CE-FD
CE-LD
CE-FSS
CE-FU
CE-FS
CE-FH
CE-GA
CE-AX
CE-KX
CE-LX
CE-LS
CE-LH
CE-LL
CE-PC
CE-PH
CE-NP
CE-FN
ME-SWB
ME-UZ·SZ
ME-UAX·SAX
ME-LS
ME-HC
ME-CZ
ME-CA
ME-CX
ME-AX
ME-WX
ME-WA
ME-WL
ME-SWG
ME-WG
ME-PX
ME-HPC·HPD
ME-FC·FD
ME-FAZ
ME-FH
ME-SWN
ME-HWN

Aluminum Electrolytic Type / Surface Mount Type **RoHS compliance**

CE-LH Series

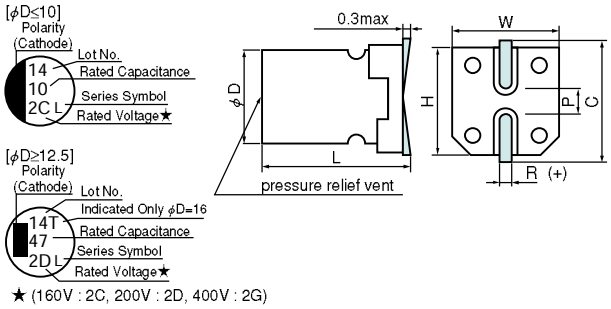
105℃ Long Life
Mid. and High Voltage

- 160 to 400V 105℃, 5,000hrs.
- Do not clean the capacitors using solvent.

■ Specifications

Items	Condition		Specifications		
Rated voltage (V)	–		160	200	400
Surge voltage (V)	Room temperature		200	250	450
Category temperature range (℃)	–		−40 to +105		
Capacitance tolerance (%)	120Hz/20℃		M : ±20		
Dissipation Factor (tan δ)	120Hz/20℃		0.20	0.20	0.25
Leakage current (LC)	μA/after 2minutes (max)	CV ≤ 1,000	0.03CV +15		
		CV > 1,000	0.02CV +25		
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−25℃ Z/Z20℃	3	3	6
		−40℃ Z/Z20℃	6	6	10
Endurance	105℃, 5,000hrs. rated voltage applied (With the rated ripple current)	△C/C	Within ±30% of the initial value		
		tan δ	≤ 3 times the initial specified value		
		LC	≤ The initial specified value		

■ Marking, Dimensions



★ (160V : 2C, 200V : 2D, 400V : 2G)

(Unit : mm)

D +0.5max	L	W ±0.2	H ±0.2	C ±0.2	R	P ±0.2
8	10.5 ±0.3	8.3	8.3	9.0	0.7 to 1.0	3.2
10	10.5 ±0.3	10.3	10.3	11.0	1.0 to 1.4	4.6
12.5	13.5 ±0.5	12.8	12.8	13.5	1.0 to 1.4	4.6
16	16.5 ±0.5	16.3	16.3	17.3	1.8 to 2.1	7.0

■ Size List, Rated Ripple Current

μF \ V	160		200		400	
2.2					8×10.5	25
3.3			8×10.5	31	10×10.5	36
4.7			8×10.5	37	10×10.5	38
10	10×10.5	43	10×10.5	43	12.5×13.5	57
22	12.5×13.5	112	12.5×13.5	112	16×16.5	115
33	12.5×13.5	137	12.5×13.5	137		
47	16×16.5	180	16×16.5	180		
68	16×16.5	215	16×16.5	215		
82	16×16.5	235				

Please refer to page 15 for the ripple current frequency coefficient.

Rated ripple current mArms(120Hz, 105℃)

Case size:φDxL(mm) 16×16.5:CE-LHT

■ Model No.

LH series

160 CE 10 LH
- Series code
- Rated capacitance code
- Type code
- Rated voltage

LHT

200 CE 47 LH T
- Sn plating terminal code
- Series code
- Rated capacitance code
- Type code
- Rated voltage

Aluminum Electrolytic Type / Surface Mount Type **RoHS compliance**

CE-LL Series

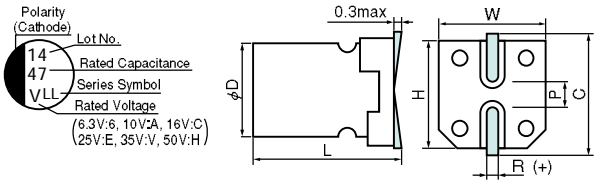
Low Impedance
Long Life

- 105℃, 7,000 to 10,000hrs.
- Solvent proof (within 2 minutes)

■ Specifications

Items	Condition		Specifications					
Rated voltage (V)	–		6.3	10	16	25	35	50
Surge voltage (V)	Room temperature		8.0	13	20	32	44	63
Category temperature range (℃)	–		−25 to +105					
Capacitance tolerance (%)	120Hz/20℃		M : ±20					
Dissipation Factor (tanδ)	120Hz/20℃		0.32	0.28	0.26	0.16	0.14	0.14
Leakage current (LC)	μA/after 2minutes (max)		The greater value of either 0.01CV or 3					
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−25℃ Z/Z20℃	4	3	2	2	2	2
Endurance	105℃, rated voltage applied (With the rated ripple current)	Test	φD ≤ 6.3 : 7,000hrs., φD ≥ 8 : 10,000hrs.					
		△C/C	Within ±30% of the initial value					
		tanδ	≤ 3 times the initial specified value					
		LC	≤ The initial specified value					

■ Marking, Dimensions



A pressure relief vent is attached to products over φD=8

(Unit : mm)

D +0.5max	L ±0.3	W ±0.2	H ±0.2	C ±0.2	R	P ±0.2
5	7.0	5.3	5.3	6.0	0.5 to 0.8	1.4
6.3	7.0	6.6	6.6	7.3	0.5 to 0.8	2.2
6.3	8.4	6.6	6.6	7.3	0.5 to 0.8	2.2
8	10.2	8.3	8.3	9.0	0.7 to 1.0	3.2
10	10.2	10.3	10.3	11.0	1.0 to 1.4	4.6

■ Size List, Impedance, Rated Ripple Current

μF \ V	6.3			10			16			25			35			50		
10													5×7.0	2.2	95			
22							5×7.0	2.2	95	5×7.0	2.2	95	5×7.0	2.2	95			
33				5×7.0	2.2	95				6.3×7.0	1.1	140	6.3×8.4	1.0	230			
47	5×7.0	2.2	95				6.3×7.0	1.1	140	6.3×7.0	1.1	140	6.3×8.4	1.0	230	8×10.2	0.53	350
100	6.3×7.0	1.1	140				6.3×7.0	1.1	140	6.3×8.4	1.0	230	8×10.2	0.22	600	10×10.2	0.35	670
150				6.3×7.0	1.1	140	6.3×8.4	1.0	230	8×10.2	0.22	600						
220	6.3×8.4	1.0	230				6.3×8.4	1.0	230	8×10.2	0.22	600	10×10.2	0.16	850			
330	6.3×8.4	1.0	230				8×10.2	0.22	600	10×10.2	0.16	850						
470	8×10.2	0.22	600				10×10.2	0.16	850									
1000	10×10.2	0.16	850															

Please refer to page 15 for the ripple current frequency coefficient.

Impedance(Ω) max at 100kHz, 20℃

Case size:φDxL(mm)

Rated ripple current mArms (100kHz, 105℃)

■ Model No.

35 CE 47 LL
- LL — Series code
- 47 — Rated capacitance code
- CE — Type code
- 35 — Rated voltage

CE-BJ
CE-BE
CE-BD
CE-BSS
CE-BS
CE-FE
CE-FD
CE-LD
CE-FSS
CE-FU
CE-FS
CE-FH
CE-GA
CE-AX
CE-KX
CE-LX
CE-LS
CE-LH
CE-LL
CE-PC
CE-PH
CE-NP
CE-FN
ME-SWB
ME-UZ·SZ
ME-UAX·SAX
ME-LS
ME-HC
ME-CZ
ME-CA
ME-CX
ME-AX
ME-WX
ME-WA
ME-WL
ME-SWG
ME-WG
ME-PX
ME-HPC·HPD
ME-FC·FD
ME-FAZ
ME-FH
ME-SWN
ME-HWN

Aluminum Electrolytic Type / Surface Mount Type **RoHS compliance**

CE-PC Series

125℃ Long Life

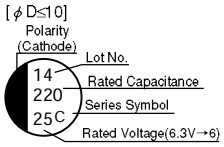
- 125℃, 1,000 to 2,000hrs.
- Solvent proof (within 2 minutes)

■ Specifications

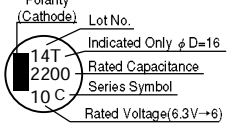
Items	Condition		Specifications							
Rated voltage (V)	–		6.3	10	16	25	35	50	63	100
Surge voltage (V)	Room temperature		8.0	13	20	32	44	63	79	125
Category temperature range (℃)	–		−55 to +125							
Capacitance tolerance (%)	120Hz/20℃		M : ±20							
Dissipation Factor (tanδ)	120Hz/20℃		0.30	0.24	0.20	0.16	0.14	0.14	0.12	0.10
			When rated capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase.							
Leakage current (LC)	μA/after 2minutes (max)		The greater value of either 0.01CV or 3							
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−25℃ Z/Z20℃	4	3	2	2	2	2	2	2
		−40℃ Z/Z20℃	8	6	4	3	3	3	3	3
Endurance	125℃ rated voltage applied (With the rated ripple current)	Test	6.3 to 50V 2,000hrs. (φD=6.3 : 1,000hrs.), 63 to 100V 1,500hrs.							
		△C/C	Within ±30% of the initial value							
		tanδ	≤ 3 times the initial specified value							
		LC	≤ The initial specified value							

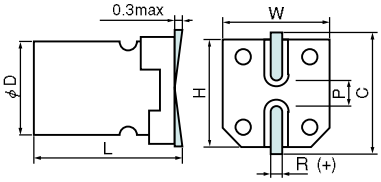
■ Marking, Dimensions

[φD≤10]



[φD≥12.5]





A pressure relief vent is attached to products over φD=8

(Unit : mm)

D +0.5max	L ±0.3	W ±0.2	H ±0.2	C ±0.2	R	P ±0.2
6.3	6.0	6.6	6.6	7.3	0.5 to 0.8	2.2
6.3	7.7	6.6	6.6	7.3	0.5 to 0.8	2.2
8	10.2	8.3	8.3	9.0	0.7 to 1.0	3.2
10	10.2	10.3	10.3	11.0	1.0 to 1.4	4.6
12.5	13.5 ±0.5	12.8	12.8	13.5	1.0 to 1.4	4.6
16	16.5 ±0.5	16.3	16.3	17.3	1.8 to 2.1	7.0

■ Size List, ESR, Rated Ripple Current

μF \ V	6.3			10			16			25		
33										6.3×6.0	1.6	70
47				6.3×6.0	1.6	70	6.3×6.0	1.6	70	6.3×7.7	0.90	110
100							6.3×7.7 ★	0.90	110	6.3×7.7 ★	0.90	110
	6.3×6.0	1.6	70	6.3×7.7	0.90	110	8×10.2	0.40	160	8×10.2	0.40	160
220				6.3×7.7 ★	0.90	110				8×10.2 ★	0.40	160
	6.3×7.7	0.90	110	8×10.2	0.40	160	8×10.2	0.40	160	10×10.2	0.30	220
330										10×10.2 ★	0.30	220
	8×10.2	0.40	160	8×10.2	0.40	160	10×10.2	0.30	220	12.5×13.5	0.12	550
470	8×10.2	0.40	160	10×10.2	0.30	220	12.5×13.5	0.12	550	12.5×13.5	0.12	550
680	10×10.2	0.30	220	12.5×13.5	0.12	550	12.5×13.5	0.12	550	12.5×13.5	0.12	550
1000	12.5×13.5	0.12	550	12.5×13.5	0.12	550	12.5×13.5	0.12	550	16×16.5	0.080	900
1500	12.5×13.5	0.12	550	12.5×13.5	0.12	550	16×16.5	0.080	900	16×16.5	0.080	900
2200	12.5×13.5	0.12	550	16×16.5	0.080	900	16×16.5	0.080	900			
3300	16×16.5	0.080	900	16×16.5	0.080	900						
4700	16×16.5	0.080	900									

μF \ V	35			50			63			100		
1.0				6.3×6.0	3.5	45						
2.2				6.3×6.0	3.5	45						
3.3				6.3×6.0	3.5	45						
4.7	6.3×6.0	2.0	60	6.3×6.0	3.5	45						
10	6.3×6.0	1.6	70	6.3×6.0	2.8	50				8×10.2	1.0	70
22	6.3×6.0	1.6	70	6.3×7.7	2.0	80	8×10.2	1.0	100	8×10.2	1.0	70
33				6.3×7.7 ★	2.0	80						
	6.3×7.7	0.90	110	8×10.2	0.70	140	8×10.2	1.0	100	10×10.2	0.80	115
47	6.3×7.7 ★	0.90	110	8×10.2 ★	0.70	140	8×10.2 ★	1.0	100			
	8×10.2	0.40	160	10×10.2	0.50	240	10×10.2	0.50	150	12.5×13.5	0.33	350
100	8×10.2 ★	0.40	160	10×10.2 ★	0.50	240	10×10.2 ★	0.50	150			
	10×10.2	0.30	220	12.5×13.5	0.23	490	12.5×13.5	0.25	350	16×16.5	0.24	500
220	10×10.2 ★	0.30	220				12.5×13.5 ★	0.25	350			
	12.5×13.5	0.12	550	12.5×13.5	0.23	490	16×16.5	0.18	500			
330				12.5×13.5 ★	0.23	490						
	12.5×13.5	0.12	550	16×16.5	0.15	800	16×16.5	0.18	500			
470	12.5×13.5 ★	0.12	550									
	16×16.5	0.080	900	16×16.5	0.15	800	16×16.5	0.18	500			
680	16×16.5	0.080	900	16×16.5	0.15	800						
1000	16×16.5	0.080	900									

Please refer to page 15 for the ripple current frequency coefficient.

★ PCS series

Case size:φDxL(mm)
16×16.5:CE-PCT

ESR (Ω) max at 100kHz, 20℃

Rated ripple current mArms (100kHz, 125℃)

■ Model No.

PC series

25 CE 220 PC
- Series code
- Rated capacitance code
- Type code
- Rated voltage

PCS series

25 CE 220 PCS
- Series code
- Rated capacitance code
- Type code
- Rated voltage

PCT

10 CE 2200 PC T
- Sn plating terminal code
- Series code
- Rated capacitance code
- Type code
- Rated voltage

CE-PH Series

125℃ Low ESR
High Ripple, High Capacitance

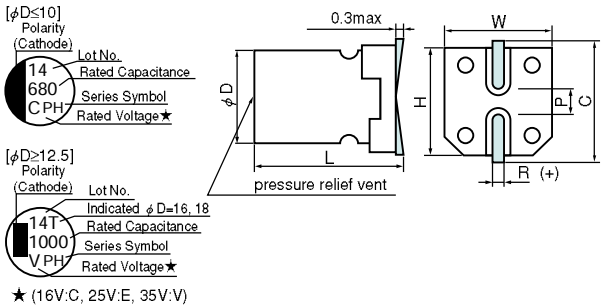
- 125℃, 2,000 to 3,000hrs. ● Suitable for Automotive Application
- Solvent proof (within 2 minutes)

φ18×16.5 NEW

■ Specifications

Items	Condition		Specifications		
Rated voltage (V)	–		16	25	35
Surge voltage (V)	Room temperature		20	32	44
Category temperature range (℃)	–		−40 to +125		
Capacitance tolerance (%)	120Hz/20℃		M : ±20		
Dissipation Factor (tanδ)	120Hz/20℃		0.20	0.16	0.14
			When rated capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase.		
Leakage current(LC)	μA/after 2minutes (max)		0.01CV		
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−25℃ Z/Z20℃	2	2	2
		−40℃ Z/Z20℃	4	3	3
Endurance	125℃ rated voltage applied (With the rated ripple current)	Test	φ8 to φ12.5 : 2,000hrs., φ16, φ18 : 3,000hrs.		
		△C/C	Within ±30% of the initial value		
		tanδ	≤ 3 times the initial specified value		
		LC	≤ The initial specified value		

■ Marking, Dimensions



(Unit : mm)

D +0.5max	L	W ±0.2	H ±0.2	C ±0.2	R	P ±0.2
8	10.5 ±0.3	8.3	8.3	9.0	0.7 to 1.0	3.2
10	10.5 ±0.3	10.3	10.3	11.0	1.0 to 1.4	4.6
12.5	13.5 ±0.5	12.8	12.8	13.5	1.0 to 1.4	4.6
16	16.5 ±0.5	16.3	16.3	17.3	1.8 to 2.1	7.0
18	16.5 ±1.0	19.0	19.0	20.0	1.7 to 2.1	7.0

■ Size List, ESR, Rated Ripple Current

μF \ V	16				25				35			
100									8×10.5	0.18	3.0	300
160									8×10.5	0.18	3.0	300
220					8×10.5	0.18	3.0	300	10×10.5	0.11	2.0	500
270					8×10.5	0.18	3.0	300				
300									10×10.5	0.11	2.0	500
330	8×10.5	0.18	3.0	300	10×10.5	0.11	2.0	500				
390	8×10.5	0.18	3.0	300								
470	10×10.5	0.11	2.0	500	10×10.5	0.11	2.0	500	12.5×13.5	0.08	1.0	1200
620									12.5×13.5	0.08	1.0	1200
680	10×10.5	0.11	2.0	500	12.5×13.5	0.08	1.0	1200	16×16.5	0.05	0.5	1800
910					12.5×13.5	0.08	1.0	1200				
1000	12.5×13.5	0.08	1.0	1200	16×16.5	0.05	0.5	1800	16×16.5	0.05	0.5	1800
1500	12.5×13.5	0.08	1.0	1200	16×16.5	0.05	0.5	1800	18×16.5	0.045	0.45	2000
2200	16×16.5	0.05	0.5	1800	18×16.5	0.045	0.45	2000				
3300	18×16.5	0.045	0.45	2000								

Please refer to page 15 for the ripple current frequency coefficient.

Case size:φDxL(mm)
16×16.5, 18×16.5:CE-PHT

ESR(Ω)
max at 100kHz, 20℃

ESR(Ω)
max at 100kHz, −40℃

Rated ripple current
mArms (100kHz, 125℃)

■ Model No.

PH series

16 CE 680 PH
- Series code
- Rated capacitance code
- Type code
- Rated voltage

PHT

35 CE 1000 PH T
- Sn plating terminal code
- Series code
- Rated capacitance code
- Type code
- Rated voltage

Aluminum Electrolytic Type / Surface Mount Type **RoHS compliance**

CE-NP Series

Bi-polar

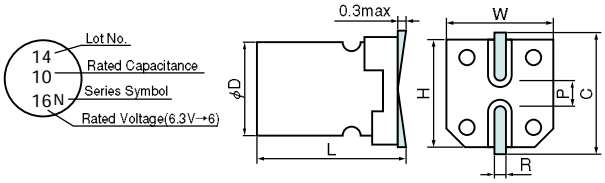
5.4mm Height

- 85℃, 2,000hrs.
- Solvent proof (within 2 minutes)

■ Specifications

Items	Condition		Specifications					
Rated voltage (V)	–		6.3	10	16	25	35	50
Surge voltage (V)	Room temperature		8.0	13	20	32	44	63
Category temperature range (℃)	–		−40 to +85					
Capacitance tolerance (%)	120Hz/20℃		M : ±20					
Dissipation Factor (tan δ)	120Hz/20℃		0.26	0.22	0.20	0.20	0.20	0.18
Leakage current (LC)	μA/after 1 minute (max)		0.03CV + 6					
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−25℃ Z/Z20℃	4	3	2	2	2	2
		−40℃ Z/Z20℃	8	6	4	4	3	3
Endurance	500hrs. x 4(alternately) 85℃,rated voltage applied (With the rated ripple current)	△C/C	Within ±25% of the initial value					
		tan δ	≤ 2 times the initial specified value					
		LC	≤ The initial specified value					

■ Marking, Dimensions



(Unit : mm)

D +0.5max	L ±0.1 −0.2	W ±0.2	H ±0.2	C ±0.2	R	P ±0.2
4	5.4	4.3	4.3	5.0	0.5 to 0.8	1.0
5	5.4	5.3	5.3	6.0	0.5 to 0.8	1.4
6.3	5.4	6.6	6.6	7.3	0.5 to 0.8	2.2

■ Size List, Rated Ripple Current

μF \ V	6.3		10		16		25		35		50	
1.0											4	10
2.2									4	8.4	5	15
3.3							4	10	5	17	5	18
4.7					4	12	5	19	5	20	6.3	23
10			4	17	5	25	6.3	28	6.3	30	6.3	23
22	5	31	6.3	35	6.3	39						
33	6.3	39	6.3	43	6.3	57						
47	6.3	47										

Please refer to page 15 for the ripple current frequency coefficient.

Rated ripple current mArms (120Hz, 85℃)

Case size:φD(mm)

■ Model No.

16 CE 10 NP

- NP — Series code
- 10 — Rated capacitance code
- CE — Type code
- 16 — Rated voltage

CE-BJ
CE-BE
CE-BD
CE-BSS
CE-BS
CE-FE
CE-FD
CE-LD
CE-FSS
CE-FU
CE-FS
CE-FH
CE-GA
CE-AX
CE-KX
CE-LX
CE-LS
CE-LH
CE-LL
CE-PC
CE-PH
CE-NP
CE-FN
ME-SWB
ME-UZ·SZ
ME-UAX·SAX
ME-LS
ME-HC
ME-CZ
ME-CA
ME-CX
ME-AX
ME-WX
ME-WA
ME-WL
ME-SWG
ME-WG
ME-PX
ME-HPC·HPD
ME-FC·FD
ME-FAZ
ME-FH
ME-SWN
ME-HWN

Aluminum Electrolytic Type / Surface Mount Type **RoHS compliance**

CE-FN Series

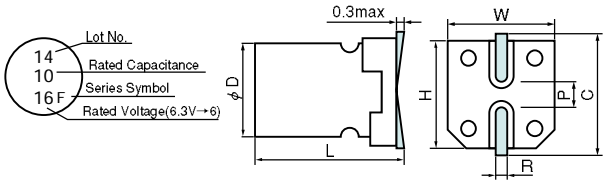
Bi-polar 105℃
5.4mm Height

- 105℃, 1,000hrs.
- Solvent proof (within 2 minutes)

■ Specifications

Items	Condition		Specifications						
Rated voltage (V)	–		6.3	10	16	25	35	50	63
Surge voltage (V)	Room temperature		8.0	13	20	32	44	63	79
Category temperature range (℃)	–		−55 to +105						
Capacitance tolerance (%)	120Hz/20℃		M : ±20						
Dissipation Factor (tan δ)	120Hz/20℃		0.24	0.22	0.20	0.20	0.20	0.18	0.16
Leakage current (LC)	μA/after 1minute (max)		0.03CV + 6						
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−40℃ Z/Z20℃	3	3	2	2	2	2	2
		−55℃ Z/Z20℃	8	6	4	4	3	3	3
Endurance	500hrs.x2(alternately) 105℃,rated voltage applied (With the rated ripple current)	△C/C	Within ±25% of the initial value						
		tan δ	≤ 2 times the initial specified value						
		LC	≤ The initial specified value						

■ Marking, Dimensions



(Unit : mm)

D +0.5max	L +0.1 −0.2	W ±0.2	H ±0.2	C ±0.2	R	P ±0.2
4	5.4	4.3	4.3	5.0	0.5 to 0.8	1.0
5	5.4	5.3	5.3	6.0	0.5 to 0.8	1.4
6.3	5.4	6.6	6.6	7.3	0.5 to 0.8	2.2

■ Size List, Rated Ripple Current

μF \ V	6.3		10		16		25		35		50		63	
1.0											4	7.0	4	7.0
2.2									4	5.9	5	10	5	10
3.3							4	7.0	5	12	5	13	6.3	13
4.7					4	8.0	5	13	5	14	6.3	16	6.3	16
10			4	12	5	17	6.3	20	6.3	21				
22	5	22	6.3	25	6.3	27								
33	6.3	27	6.3	30	6.3	40								
47	6.3	33												

Please refer to page 15 for the ripple current frequency coefficient.

Rated ripple current mArms (120Hz, 105℃)

Case size:φD(mm)

■ Model No.

16 CE 10 FN
- FN — Series code
- 10 — Rated capacitance code
- CE — Type code
- 16 — Rated voltage

Aluminum Electrolytic Type / Radial Lead Type **RoHS compliance**

ME-SWB Series

Standard

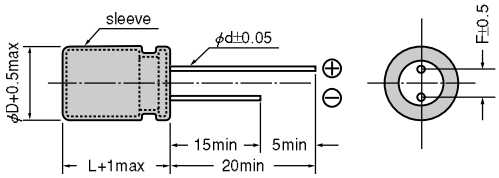
7mm Height

- Solvent proof (within 3 minutes)

■ Specifications

Items	Condition		Specifications							
Rated voltage (V)	–		4.0	6.3	10	16	25	35	50	63
Surge voltage (V)	Room temperature		5.0	8.0	13	20	32	44	63	79
Category temperature range (℃)	–		−40 to +85							
Capacitance tolerance (%)	120Hz/20℃		M : ±20							
Dissipation Factor (DF)	120Hz/20℃		0.35	0.24	0.20	0.16	0.14	0.12	0.10	0.10
Leakage current (LC)	μA/after 2minutes (max)		The greater value of either 0.01CV or 3							
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−25℃ Z/Z20℃	7	4	3	2	2	2	2	2
		−40℃ Z/Z20℃	15	10	7	6	4	4	4	4
Endurance	85℃, 2,000hrs. rated voltage applied (With the rated ripple current)	△C/C	Within ±25% of the initial value							
		tan δ	≤ 2 times the initial specified value							
		LC	≤ The initial specified value							

■ Dimensions



(単位:mm)

φD	4	5	6.3
F	1.5	2.0	2.5
φd	0.45	0.45	0.45

■ Size List, Rated Ripple Current

μF \ V	4.0		6.3		10		16		25		35		50		63	
10							4×7	25	4×7	28	5×7	30	5×7	34	6.3×7	43
22			4×7	31	4×7	35	4×7	39	5×7	52	6.3×7	54	6.3×7	60	6.3×7	65
33	4×7	26	4×7	39	4×7	43	5×7	57	6.3×7	63	6.3×7	65	6.3×7	70		
47	4×7	34	4×7	47	5×7	59	5×7	68	6.3×7	70	6.3×7	75	6.3×7	80		
100	5×7	61	5×7	71	6.3×7	80	6.3×7	91	6.3×7	100	6.3×7	105				
150							6.3×7	105								
220	6.3×7	82	6.3×7	103	6.3×7	110	6.3×7	110								
330	6.3×7	100	6.3×7	110												
470	6.3×7	110														

Please refer to page 15 for the ripple current frequency coefficient.

Rated ripple current mArms (120Hz, 85℃)

Case size:φDxL(mm)

■ Model No.

16 ME 33 SWB
- SWB: Series code
- 33: Rated capacitance code
- ME: Type code
- 16: Rated voltage

CE-BJ
CE-BE
CE-BD
CE-BSS
CE-BS
CE-FE
CE-FD
CE-LD
CE-FSS
CE-FU
CE-FS
CE-FH
CE-GA
CE-AX
CE-KX
CE-LX
CE-LS
CE-LH
CE-LL
CE-PC
CE-PH
CE-NP
CE-FN
ME-SWB
ME-UZ·SZ
ME-UAX·SAX
ME-LS
ME-HC
ME-CZ
ME-CA
ME-CX
ME-AX
ME-WX
ME-WA
ME-WL
ME-SWG
ME-WG
ME-PX
ME-HPC·HPD
ME-FC·FD
ME-FAZ
ME-FH
ME-SWN
ME-HWN

Aluminum Electrolytic Type / Radial Lead Type **RoHS compliance**

ME-UZ·SZ Series

5mm Height, Temperature of Wide Range

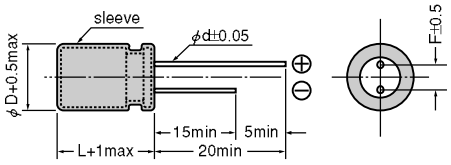
7mm Height, Temperature of Wide Range

- ME-UZ : 105℃, 1,000hrs., Solvent proof (within 2 minutes)
- ME-SZ : 105℃, 1,000hrs., Solvent proof (within 3 minutes)

■ Specifications

Items	Condition		Specifications					
Rated voltage (V)	–		6.3	10	16	25	35	50
Surge voltage (V)	Room temperature		8.0	13	20	32	44	63
Category temperature range (℃)	–		−55 to +105					
Capacitance tolerance (%)	120Hz/20℃		M : ±20					
Dissipation Factor (tanδ)	120Hz/20℃		0.24	0.20	0.16	0.14	0.12	0.10
Leakage current (LC)	μA/after 2minutes (max)		The greater value of either 0.01CV or 3					
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−40℃ Z/Z20℃	3	2	2	2	2	2
		−55℃ Z/Z20℃	5	4	4	3	3	3
Endurance	105℃, 1,000hrs. rated voltage applied (With the rated ripple current)	△C/C	Within ±25% of the initial value					
		tanδ	≤2 times the initial specified value					
		LC	≤ The initial specified value					

■ Dimensions



(Unit : mm)

φD	4	5	6.3
F	1.5	2.0	2.5
φd	0.45	0.45	0.45

■ Size List, Impedance, Rated Ripple Current

●UZ siries

μF \ V	6.3			10			16			25			35			50		
10																6.3×5	2.0	70
22										6.3×5	1.6	100	6.3×5	2.0	70	6.3×5	2.0	70
33							6.3×5	1.6	100	6.3×5	1.6	100	6.3×5	2.0	70			
47				6.3×5	1.6	100	6.3×5	1.6	100	6.3×5	1.6	100	6.3×5	2.0	70			
100	6.3×5	1.6	100	6.3×5	1.6	100	6.3×5	1.6	100									
220	6.3×5	1.6	100															

●SZ series

μF \ V	6.3			10			16			25			35			50		
1.0																4×7	10	30
2.2																4×7	7.8	35
3.3																4×7	6.2	40
4.7										4×7	4.2	50	4×7	6.0	40	5×7	3.1	70
10							4×7	4.2	50	5×7	2.0	85	5×7	3.1	70	6.3×7	1.6	100
22	4×7	4.2	50	5×7	2.0	85	5×7	2.0	85	6.3×7	1.2	120	6.3×7	1.6	100	6.3×7	1.6	100
33	5×7	2.0	85	5×7	2.0	85	6.3×7	1.2	120	6.3×7	1.2	120	6.3×7	1.6	100	6.3×7	1.6	100
47	5×7	2.0	85	6.3×7	1.2	120	6.3×7	1.2	120	6.3×7	1.2	120	6.3×7	1.6	100	6.3×7	1.6	100
100	6.3×7	1.2	120	6.3×7	1.2	120	6.3×7	1.2	120	6.3×7	1.2	120	6.3×7	1.6	100			
220	6.3×7	1.2	120	6.3×7	1.2	120	6.3×7	1.2	120									
330	6.3×7	1.2	120															

Please refer to page 15 for the ripple current frequency coefficient.

Rated ripple current mArms(100kHz, 105℃)

Impedance(Ω) max at 100kHz, 20℃

Case size:φDxL(mm)

■ Model No.

UZ series: 16 ME 33 UZ
- 16 — Rated voltage
- ME — Type code
- 33 — Rated capacitance code
- UZ — Series code

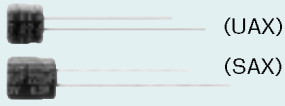
SZ series: 16 ME 10 SZ
- 16 — Rated voltage
- ME — Type code
- 10 — Rated capacitance code
- SZ — Series code

Aluminum Electrolytic Type / Radial Lead Type **RoHS compliance**

ME-UAX·SAX Series

Low Impedance

5mm Height(UAX), 7mm Height(SAX)

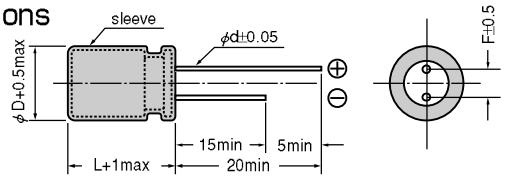


- ME-UAX : 105℃, 1,000hrs., Solvent proof (within 2 minutes)
- ME-SAX : 105℃, 1,000hrs., Solvent proof (within 3 minutes)

■ Specifications

Items	Condition		Specifications				
Rated voltage (V)	–		6.3	10	16	25	35
Surge voltage (V)	Room temperature		8.0	13	20	32	44
Category temperature range (℃)	–		−55 to +105				
Capacitance tolerance (%)	120Hz/20℃		M : ±20				
Dissipation Factor (tanδ)	120Hz/20℃		0.24	0.20	0.16	0.14	0.12
Leakage current (LC)	μA/after 2minutes (max)		The greater value of either 0.01CV or 3				
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−40℃ Z/Z20℃	3	2	2	2	2
		−55℃ Z/Z20℃	5	4	4	3	3
Endurance	105℃, 1,000hrs. rated voltage applied (With the rated ripple current)	△C/C	Within ±25% of the initial value				
		tanδ	≤ 2 times the initial specified value				
		LC	≤ The initial specified value				

■ Dimensions



(Unit : mm)

φD	4	5	6.3
F	1.5	2.0	2.5
φd	0.45	0.45	0.45

■ Size List, Impedance, Rated Ripple Current

●UAX series

μF \ V	6.3			10			16			25			35		
33										6.3×5	0.44	230	6.3×5	0.44	230
47							6.3×5	0.44	230	6.3×5	0.44	230	6.3×5	0.44	230
56										6.3×5	0.44	230			
68				6.3×5	0.44	230	6.3×5	0.44	230						
100	6.3×5	0.44	230				6.3×5	0.44	230						
120							6.3×5	0.44	230						
130				6.3×5	0.44	230									
150	6.3×5	0.44	230												
220	6.3×5	0.44	230												

●SAX series

μF \ V	6.3			10			16			25			35		
4.7													4×7	1.15	90
10										4×7	1.15	90	5×7	0.49	160
15							4×7	1.15	90	5×7	0.49	160	6.3×7	0.29	280
22				4×7	1.15	90	5×7	0.49	160	5×7	0.49	160	6.3×7	0.29	280
33				5×7	0.49	160	5×7	0.49	160	6.3×7	0.24	280	6.3×7	0.29	280
47	5×7	0.49	160	5×7	0.49	160	6.3×7	0.24	280	6.3×7	0.24	280	6.3×7	0.29	280
68										6.3×7	0.24	280			
100				6.3×7	0.24	280	6.3×7	0.24	280	6.3×7	0.29	280			
150				6.3×7	0.24	280	6.3×7	0.29	280						
220	6.3×7	0.24	280	6.3×7	0.29	280	6.3×7	0.29	280						
330	6.3×7	0.29	280												

Please refer to page 15 for the ripple current frequency coefficient.

Rated ripple current mArms(100kHz, 105℃)

Impedance(Ω) max at 100kHz, 20℃

Case size:φDxL(mm)

■ Model No.

UAX series: 16 ME 47 UAX
- Series code
- Rated capacitance code
- Type code
- Rated voltage

SAX series: 16 ME 22 SAX
- Series code
- Rated capacitance code
- Type code
- Rated voltage

ME-LS Series

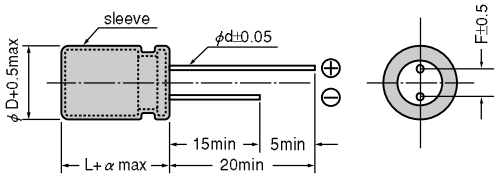
105℃ Long Life

- 105℃, 3,000hrs.
- Solvent proof (φ4 to 6.3 : within 3 minutes, φ8 : within 5 minutes)

■ Specifications

Items	Condition		Specifications					
Rated voltage (V)	–		6.3	10	16	25	35	50
Surge voltage (V)	Room temperature		8.0	13	20	32	44	63
Category temperature range (℃)	–		−40 to +105					
Capacitance tolerance (%)	120Hz/20℃		M : ±20					
Dissipation Factor (tanδ)	120Hz/20℃		0.30	0.28	0.24	0.18	0.16	0.14
Leakage current (LC)	μA/after 2minutes (max)		The greater value of either 0.01CV or 3					
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−25℃ Z/Z20℃	5	4	3	2	2	2
		−40℃ Z/Z20℃	10	8	6	4	3	3
Endurance	105℃, 3,000hrs. rated voltage applied (With the rated ripple current)	△C/C	Within ±30% of the initial value					
		tanδ	≤ 3 times the initial specified value					
		LC	≤ The initial specified value					

■ Dimensions



α : L<7.5 α=1.0, L≥7.5 α=1.5

A pressure relief vent is attached to products φ8×11.5

(Unit : mm)

φD	4	5	6.3	8
F	1.5	2.0	2.5	3.5
φd	0.45	0.45	0.45	0.60

■ Size List, Impedance, Rated Ripple Current

μF \ V	6.3			10			16			25			35			50		
1.0																4×7	17.0	23
2.2																4×7	13.0	26
3.3																4×7	11.0	29
4.7													4×7	6.6	37	5×7	9.0	37
10							4×7	4.2	46	4×7	4.2	46	5×7	2.3	74	6.3×7	2.5	84
22	4×7	4.2	46				5×7	2.3	74	5×7	2.3	74	6.3×7	1.2	120	6.3×7.5	1.6	112
33				5×7	2.3	74				6.3×7	1.2	120	6.3×7.5	0.75	163			
47	5×7	2.3	74				6.3×7	1.2	120	6.3×7.5	0.75	163	6.3×7.5	0.75	163			
100	6.3×7	1.2	120				6.3×7.5	0.75	163									
150				6.3×7.5	0.75	163												
220	6.3×7.5	0.75	163							8×11.5	0.40	298	8×11.5	0.40	298			
330										8×11.5	0.40	298						
470							8×11.5	0.40	298									
1000	8×11.5	0.40	298															

Please refer to page 15 for the ripple current frequency coefficient.

Case size:φDxL(mm)

Rated ripple current mArms(100kHz, 105℃)

Impedance(Ω) max at 100kHz, 20℃

■ Model No.

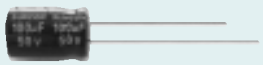
6 ME 1000 LS

- LS — Series code
- 1000 — Rated capacitance code
- ME — Type code
- 6 — Rated voltage

Aluminum Electrolytic Type / Radial Lead Type **RoHS compliance**

ME-HC Series

Standard

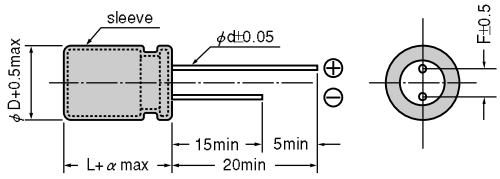


● Solvent proof (within 5 minutes)

■ Specifications

Items	Condition		Specifications							
Rated voltage (V)	–		6.3	10	16	25	35	50	63	100
Surge voltage (V)	Room temperature		8.0	13	20	32	44	63	79	125
Category temperature range (℃)	–		−40 to +85							
Capacitance tolerance (%)	120Hz/20℃		M : ±20							
Dissipation Factor (tanδ)	120Hz/20℃		0.28	0.24	0.20	0.16	0.14	0.12	0.10	0.10
			When rated capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase.							
Leakage current (LC)	μA/after 2minutes (max)		The greater value of either 0.01CV or 3							
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−25℃ Z/Z20℃	5	4	3	2	2	2	2	2
		−40℃ Z/Z20℃	12	10	8	6	4	4	4	4
Endurance	85℃, 2,000hrs. rated voltage applied (With the rated ripple current)	△C/C	Within ±25% of the initial value							
		tan δ	≤ 2 times the initial specified value							
		LC	≤ The initial specified value							

■ Dimensions



α : L<20 α=1.5, L≥20 α=2.0

A pressure relief vent is attached to products over φD=6.3

(Unit : mm)

φD	5	6.3	8	10	12.5	16	18
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8

■ Size List, Rated Ripple Current

μF \ V	6.3		10		16		25		35		50		63		100	
1.0											5x11	10	5x11	10	5x11	21
2.2											5x11	20	5x11	20	5x11	30
3.3											5x11	28	5x11	28	5x11	40
4.7							5x11	25			5x11	38	5x11	40	5x11	50
10					5x11	28	5x11	40	5x11	45	5x11	50	5x11	60	6.3x11	70
22			5x11	38	5x11	50	5x11	60	5x11	75	5x11	90	5x11	105	8x11.5	120
33	5x11	50	5x11	58	5x11	60	5x11	80	5x11	90	5x11	110	6.3x11	130	8x12.5	145
47	5x11	60	5x11	70	5x11	85	5x11	90	5x11	125	6.3x11	135	6.3x11	160	10x12.5	180
100	5x11	120	5x11	125	5x11	165	6.3x11	180	6.3x11	200	8x11.5	250	8x12.5	280	10x20	350
220	5x11	210	5x11	210	6.3x11	260	8x11.5	320	8x11.5	320	10x12.5	410	10x16	450	12.5x25	550
330	6.3x11	260	6.3x11	295	8x11.5	360	8x11.5	380	10x12.5	440	10x16	580	10x20	600	16x25	750
470	6.3x11	330	6.3x11	330	8x11.5	380	10x12.5	540	10x16	585	10x20	750	12.5x20	800	16x30	950
1000	8x11.5	420	10x12.5	620	10x16	740	10x20	940	12.5x20	1000	12.5x25	1150	16x25	1250		
2200	10x16	890	10x20	1000	12.5x20	1150	12.5x25	1350	16x25	1500	16x31.5	1700				
3300	10x20	1080	12.5x20	1300	12.5x25	1500	16x25	1600	16x35.5	1750	18x35.5	1850				
4700	12.5x20	1400	12.5x25	1550	16x25	1750	16x31.5	1900	18x35.5	2000						
6800	12.5x25	1600	16x25	1800	16x31.5	1900	18x35.5	2000								
10000	16x25	1750	16x31.5	1900	18x35.5	2000										
15000	16x35.5	1900	18x35.5	2000												

Please refer to page 15 for the ripple current frequency coefficient.

Rated ripple current mArms (120Hz, 85℃)

Case size:φDxL(mm)

■ Model No.

6 ME 15000 HC
- HC : Series code
- 15000 : Rated capacitance code
- ME : Type code
- 6 : Rated voltage

CE-BJ
CE-BE
CE-BD
CE-BSS
CE-BS
CE-FE
CE-FD
CE-LD
CE-FSS
CE-FU
CE-FS
CE-FH
CE-GA
CE-AX
CE-KX
CE-LX
CE-LS
CE-LH
CE-LL
CE-PC
CE-PH
CE-NP
CE-FN
ME-SWB
ME-UZ·SZ
ME-UAX·SAX
ME-LS
ME-HC
ME-CZ
ME-CA
ME-CX
ME-AX
ME-WX
ME-WA
ME-WL
ME-SWG
ME-WG
ME-PX
ME-HPC·HPD
ME-FC·FD
ME-FAZ
ME-FH
ME-SWN
ME-HWN

Aluminum Electrolytic Type / Radial Lead Type **RoHS compliance**

ME-CZ Series

Temperature of Wide Range

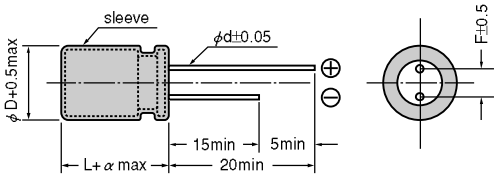
Smaller in Size Miniature Standard

- 105℃, 1,000 to 3,000hrs.
- Solvent proof (within 5 minutes)

■ Specifications

Items	Condition		Specifications							
Rated voltage (V)	–		6.3	10	16	25	35	50	63	100
Surge voltage (V)	Room temperature		8.0	13	20	32	44	63	79	125
Category temperature range (℃)	–		−55 to +105							
Capacitance tolerance (%)	120Hz/20℃		M : ±20							
Dissipation Factor (tanδ)	120Hz/20℃		0.28	0.24	0.20	0.16	0.14	0.12	0.10	0.10
			When rated capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase.							
Leakage current(LC)	μA/after 2minutes (max)		The greater value of either 0.01CV or 3							
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−40℃ Z20℃	4	4	3	3	2	2	2	2
		−55℃ Z20℃	10	8	6	5	4	3	3	3
Endurance	105℃ rated voltage applied (With the rated ripple current)	Test	φ5 to φ8 : 1,000hrs., φ10 : 2,000hrs., φ12.5 to φ18 : 3,000hrs.							
		△C/C	Within ±25% of the initial value							
		tanδ	≤2 times the initial specified value							
		LC	≤ The initial specified value							

■ Dimensions



α : L<20 α=1.5, L≥20 α=2.0

A pressure relief vent is attached to products over φD=6.3

(Unit : mm)

φD	5	6.3	8	10	12.5	16	18
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8

■ Size List, Impedance, Rated Ripple Current

V / Items / Case size φDxL(mm)	6.3			10		
	Capacitance (μF)	Impedance(Ωmax) (20℃/100kHz)	Rated ripple current(mArms) (105℃/100kHz)	Capacitance (μF)	Impedance(Ωmax) (20℃/100kHz)	Rated ripple current(mArms) (105℃/100kHz)
5×11	220	1.4	160	100	1.4	150
6.3×11	330	0.58	240	220	0.58	240
6.3×11	470	0.55	250	330	0.55	250
8×11.5	1000	0.26	450	470	0.39	370
10×12.5				1000	0.16	560
10×16	2200	0.12	760			
10×20	3300	0.10	900	2200	0.10	900
12.5×20	4700	0.072	1100	3300	0.074	1100
12.5×25	6800	0.054	1420	4700	0.054	1420
16×25	10000	0.043	1700	6800	0.043	1700
16×31.5				10000	0.035	1950
16×35.5	15000	0.032	2100			
18×35.5				15000	0.028	2400

■ Model No.

16 ME 100 CZ
- CZ — Series code
- 100 — Rated capacitance code
- ME — Type code
- 16 — Rated voltage

Aluminum Electrolytic Type / Radial Lead Type — RoHS compliance

■ Size List, Impedance, Rated Ripple Current

V / Items / Case size φDxL(mm)	16			25		
	Capacitance (μF)	Impedance(Ωmax) (20℃/100kHz)	Rated ripple current(mArms) (105℃/100kHz)	Capacitance (μF)	Impedance(Ωmax) (20℃/100kHz)	Rated ripple current(mArms) (105℃/100kHz)
5×11	100	1.4	150	47	1.4	150
6.3×11	220	0.55	240	100	0.60	240
8×11.5	330	0.35	370	220	0.39	370
8×11.5	470	0.28	450	330	0.34	400
10×12.5				470	0.17	560
10×16	1000	0.13	760			
10×20				1000	0.10	900
12.5×20	2200	0.075	1100			
12.5×25	3300	0.054	1320	2200	0.062	1320
16×25	4700	0.043	1600	3300	0.043	1600
16×31.5	6800	0.035	1900	4700	0.035	1900
18×35.5	10000	0.028	2300	6800	0.028	2200

V / Items / Case size φDxL(mm)	35			50		
	Capacitance (μF)	Impedance(Ωmax) (20℃/100kHz)	Rated ripple current(mArms) (105℃/100kHz)	Capacitance (μF)	Impedance(Ωmax) (20℃/100kHz)	Rated ripple current(mArms) (105℃/100kHz)
5×11				2.2	5.5	40
5×11				3.3	4.0	50
5×11				4.7	2.8	80
5×11				10	2.3	90
5×11	33	2.1	120	22	2.2	110
5×11	47	2.1	140	33	2.1	120
6.3×11	100	1.1	180	47	1.1	180
8×11.5	220	0.46	360	100	0.55	310
10×12.5	330	0.26	500	220	0.30	500
10×16	470	0.18	650	330	0.20	650
10×20				470	0.13	800
12.5×20	1000	0.11	900			
12.5×25				1000	0.10	1100
16×25	2200	0.056	1400			
16×31.5				2200	0.055	1650
16×35.5	3300	0.038	1800			
18×35.5	4700 ★	0.035	2000	3300	0.035	2000

★ Available 40V (40ME4700CZ)

V / Items / Case size φDxL(mm)	63			100		
	Capacitance (μF)	Impedance(Ωmax) (20℃/100kHz)	Rated ripple current(mArms) (105℃/100kHz)	Capacitance (μF)	Impedance(Ωmax) (20℃/100kHz)	Rated ripple current(mArms) (105℃/100kHz)
5×11	2.2	8.3	42	2.2	11	42
5×11	3.3	6.0	58	3.3	8.0	58
5×11	4.7	4.2	64	4.7	5.6	64
5×11	10	2.8	90			
5×11	22	2.4	140			
6.3×11	33	1.4	200	10	1.7	108
6.3×11	47	1.3	240			
8×11.5				22	0.83	235
8×12.5	100	0.60	300	33	0.60	300
10×12.5				47	0.39	330
10×16	220	0.22	520			
10×20	330	0.17	765	100	0.24	450
12.5×20	470	0.14	960			
12.5×25				220	0.15	700
16×25	1000	0.065	1100	330	0.090	950
16×30				470	0.085	1100

Please refer to page 15 for the ripple current frequency coefficient.

CE-BJ
CE-BE
CE-BD
CE-BSS
CE-BS
CE-FE
CE-FD
CE-LD
CE-FSS
CE-FU
CE-FS
CE-FH
CE-GA
CE-AX
CE-KX
CE-LX
CE-LS
CE-LH
CE-LL
CE-PC
CE-PH
CE-NP
CE-FN
ME-SWB
ME-UZ·SZ
ME-UAX·SAX
ME-LS
ME-HC
ME-CZ
ME-CA
ME-CX
ME-AX
ME-WX
ME-WA
ME-WL
ME-SWG
ME-WG
ME-PX
ME-HPC·HPD
ME-FC·FD
ME-FAZ
ME-FH
ME-SWN
ME-HWN

Aluminum Electrolytic Type / Radial Lead Type **RoHS compliance**

ME-CA Series

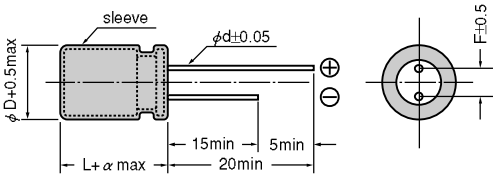
Low Impedance
Miniature

- 105℃, 1,000 to 3,000hrs.
- Solvent proof (within 5 minutes)

■ Specifications

Items	Condition		Specifications					
Rated voltage (V)	–		6.3	10	16	25	35	50
Surge voltage (V)	Room temperature		8.0	13	20	32	44	63
Category temperature range (℃)	–		−55 to +105					
Capacitance tolerance (%)	120Hz/20℃		M : ±20					
Dissipation Factor (tanδ)	120Hz/20℃		0.28	0.24	0.20	0.16	0.14	0.12
			When rated capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase.					
Leakage current (LC)	μA/after 2minutes (max)		The greater value of either 0.01CV or 3					
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−40℃ Z/Z20℃	3	3	2	2	2	2
		−55℃ Z/Z20℃	6	5	4	4	3	3
Endurance	105℃ rated voltage applied (With the rated ripple current)	Test	φ5 to φ8 : 1,000hrs., φ10 : 2,000hrs., φ12.5 to φ16 : 3,000hrs.					
		△C/C	Within ±25% of the initial value					
		tanδ	≤ 2 times the initial specified value					
		LC	≤ The initial specified value					

■ Dimensions



α : L<20 α=1.5, L≥20 α=2.0
A pressure relief vent is attached to products over φD=6.3

(Unit : mm)

φD	5	6.3	8	10	12.5	16
F	2.0	2.5	3.5	5.0	5.0	7.5
φd	0.5	0.5	0.6	0.6	0.6	0.8

■ Size List, Impedance, Rated Ripple Current

V / Items / Case size φDxL(mm)	6.3			10		
	Capacitance (μF)	Impedance(Ωmax) (20℃/100kHz)	Rated ripple current(mArms) (105℃/10k to 200kHz)	Capacitance (μF)	Impedance(Ωmax) (20℃/100kHz)	Rated ripple current(mArms) (105℃/10k to 200kHz)
5×11	220	0.50	180			
6.3×11	330	0.30	280	220	0.30	280
6.3×11	470	0.24	280	330	0.24	280
8×11.5	1000	0.15	560	470	0.16	410
10×12.5				1000	0.086	710
10×16	2200	0.066	950			
10×20	3300	0.047	1150	2200	0.047	1150
12.5×20	4700	0.042	1460	3300	0.042	1460
12.5×25	6800	0.031	1780	4700	0.031	1780
16×25	10000	0.026	2000	6800	0.026	2000
16×31.5				10000	0.022	2200
16×35.5	15000	0.022	2200			

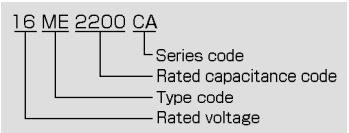
■ Size List, Impedance, Rated Ripple Current

V / Items / Case size φDxL(mm)	16			25		
	Capacitance (μF)	Impedance(Ωmax) (20℃/100kHz)	Rated ripple current(mArms) (105℃/10k to 200kHz)	Capacitance (μF)	Impedance(Ωmax) (20℃/100kHz)	Rated ripple current(mArms) (105℃/10k to 200kHz)
5×11	100	0.50	180			
6.3×11	220	0.24	280	100	0.30	280
8×11.5	330	0.16	410	220	0.16	410
8×11.5	470	0.15	560	330	0.15	560
10×12.5				470	0.086	710
10×16	1000	0.066	950			
10×20				1000	0.047	1150
12.5×20	2200	0.042	1460			
12.5×25	3300	0.035	1780	2200	0.035	1780
16×25	4700	0.026	2000	3300	0.026	2000
16×31.5	6800	0.022	2200	4700	0.022	2200

V / Items / Case size φDxL(mm)	35			50		
	Capacitance (μF)	Impedance(Ωmax) (20℃/100kHz)	Rated ripple current(mArms) (105℃/10k to 200kHz)	Capacitance (μF)	Impedance(Ωmax) (20℃/100kHz)	Rated ripple current(mArms) (105℃/10k to 200kHz)
5×11				2.2	3.0	45
5×11				3.3	2.7	55
5×11				4.7	2.0	90
5×11				10	1.7	110
5×11	33	0.72	180	22	1.2	120
5×11	47	0.50	180	33	0.95	130
6.3×11	100	0.24	280	47	0.56	190
8×11.5	220	0.15	560	100	0.30	320
10×12.5	330	0.086	710	220	0.16	520
10×16	470	0.066	950	330	0.12	670
10×20				470	0.088	820
12.5×20	1000	0.042	1460			
12.5×25				1000	0.053	1200
16×25	2200	0.026	2000			
16×31.5				2200	0.029	1750
16×35.5	3300	0.022	2200			

Please refer to page 15 for the ripple current frequency coefficient.

■ Model No.



CE-BJ
CE-BE
CE-BD
CE-BSS
CE-BS
CE-FE
CE-FD
CE-LD
CE-FSS
CE-FU
CE-FS
CE-FH
CE-GA
CE-AX
CE-KX
CE-LX
CE-LS
CE-LH
CE-LL
CE-PC
CE-PH
CE-NP
CE-FN
ME-SWB
ME-UZ·SZ
ME-UAX·SAX
ME-LS
ME-HC
ME-CZ
ME-CA
ME-CX
ME-AX
ME-WX
ME-WA
ME-WL
ME-SWG
ME-WG
ME-PX
ME-HPC·HPD
ME-FC·FD
ME-FAZ
ME-FH
ME-SWN
ME-HWN

Aluminum Electrolytic Type / Radial Lead Type **RoHS compliance**

ME-CX Series

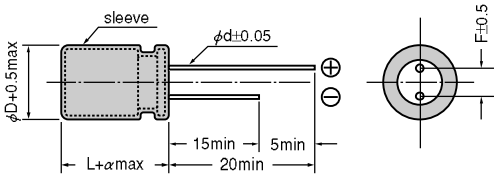
Low Impedance
Miniature, Long Life

- 105℃, 2,000 to 7,000hrs.
- Solvent proof (within 5 minutes)

■ Specifications

Items	Condition		Specifications				
Rated voltage (V)	—		6.3	10	16	25	35
Surge voltage (V)	Room temperature		8.0	13	20	32	44
Category temperature range (℃)	—		−55 to +105				
Capacitance tolerance (%)	120Hz/20℃		M : ±20				
Dissipation Factor (tanδ)	120Hz/20℃		0.22	0.19	0.16	0.14	0.12
			When rated capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase.				
Leakage current (LC)	μA/after 2minutes (max)		0.01CV				
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−40℃ Z/Z20℃	3	2	2	2	2
		−55℃ Z/Z20℃	4	4	3	3	3
Endurance	105℃ rated voltage applied (With the rated ripple current)	Test	φ5 to φ6.3 : 2,000hrs., φ8 : 3,000hrs., φ10 : 4,000hrs., φ12.5 : 5,000hrs., φ16 to φ18 : 7,000hrs.				
		△C/C	Within ±25% of the initial value				
		tanδ	≤ 2 times the initial specified value				
		LC	≤ The initial specified value				

■ Dimensions



α : L<20 α=1.5, L≥20 α=2.0

A pressure relief vent is attached to products over φD=6.3

(Unit : mm)

φD	5	6.3	8	10	12.5	16	18
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φd	0.5	0.5	0.6	0.6	0.6★	0.8	0.8

★φ12.5×30:φd=0.8

■ Size List, Impedance, Rated Ripple Current

V / Items / Case size φDxL(mm)	6.3			10		
	Capacitance (μF)	Impedance(Ωmax) (20℃/100kHz)	Rated ripple current(mArms) (105℃/10k to 200kHz)	Capacitance (μF)	Impedance(Ωmax) (20℃/100kHz)	Rated ripple current(mArms) (105℃/10k to 200kHz)
5×11	180	0.34	205	150	0.34	205
6.3×11	330	0.17	330	270	0.17	330
6.3×11	390	0.17	330	330	0.17	330
8×11.5	680	0.11	580	470	0.11	580
8×11.5				560	0.11	580
8×15	1000	0.080	750	680	0.080	750
8×20	★1 1200	0.060	1000	★1 1000	0.060	1000
8×20	★1 1500	0.060	1000			
10×12.5	1200	0.063	900	820	0.063	900
10×16	1500	0.049	1200	1000	0.049	1200
10×16				1200	0.049	1200
10×20	2200	0.036	1450	1500	0.036	1450
10×22	2700	0.036	1500	1800	0.036	1500
12.5×20	3900	0.035	1660	2700	0.035	1660
12.5×25	4700	0.027	2000	3900	0.027	2000
12.5×25	5600	0.027	2000			
12.5×30	★1 6800	0.024	2450	★1 4700	0.024	2450
16×21	★2 5600	0.032	2000	★2 3900	0.032	2000
16×25	6800	0.022	2560	4700	0.022	2560
16×25	8200	0.022	2560	5600	0.022	2560
16×31.5	10000	0.017	3010	6800	0.017	3010
16×31.5				8200	0.017	3010
16×35.5	12000	0.016	3150	10000	0.016	3150
18×21	★2 6800	0.030	2490	★2 5600	0.030	2490
18×25	★2 10000	0.022	2740	★2 6800	0.022	2740
18×30.5	★2 12000	0.017	3330	★2 10000	0.017	3330
18×35.5	15000	0.016	3680	12000	0.016	3680

Please refer to page 15 for the ripple current frequency coefficient.

★1 CXL series ★2 CXS series

■ Size List, Impedance, Rated Ripple Current

V / Items / Case size φDxL(mm)	16			25		
	Capacitance (μF)	Impedance(Ωmax) (20℃/100kHz)	Rated ripple current(mArms) (105℃/10k to 200kHz)	Capacitance (μF)	Impedance(Ωmax) (20℃/100kHz)	Rated ripple current(mArms) (105℃/10k to 200kHz)
5×11	100	0.34	205	68	0.34	205
6.3×11	180	0.17	330	120	0.17	330
6.3×11	220	0.17	330	150	0.17	330
8×11.5	330	0.11	580	220	0.11	580
8×15	470	0.080	750	330	0.080	750
8×20	680	0.060	1000	470	0.060	1000
10×12.5	560	0.063	900	390	0.063	900
10×16	820	0.049	1200	560	0.049	1200
10×20	1000	0.036	1450	680	0.036	1450
10×20				820	0.036	1450
10×22	1200	0.036	1500	1000	0.036	1500
12.5×20	1500	0.035	1660	1200	0.035	1660
12.5×20	1800	0.035	1660	1500	0.035	1660
12.5×25	2200	0.027	2000	1800	0.027	2000
12.5×25	2700	0.027	2000	2200	0.027	2000
12.5×30	★1 3300	0.024	2450	★1 2200	0.024	2450
16×21	★2 2700	0.032	2000	★2 1800	0.032	2000
16×25	3300	0.022	2560	2700	0.022	2560
16×25	3900	0.022	2560			
16×31.5	4700	0.017	3010	3300	0.017	3010
16×31.5	5600	0.017	3010			
16×35.5	6800	0.016	3150	3900	0.016	3150
18×21	★2 3300	0.030	2490	★2 2200	0.030	2490
18×25	★2 4700	0.022	2740	★2 3300	0.022	2740
18×30.5				★2 3900	0.017	3330
18×35.5	8200	0.016	3680	5600	0.016	3680

V / Items / Case size φDxL(mm)	35		
	Capacitance (μF)	Impedance(Ωmax) (20℃/100kHz)	Rated ripple current(mArms) (105℃/10k to 200kHz)
5×11	47	0.34	205
6.3×11	100	0.17	330
8×11.5	150	0.11	580
8×15	220	0.080	750
8×20	★1 330	0.060	1000
10×12.5	270	0.063	900
10×16	330	0.049	1200
10×16	390	0.049	1200
10×20	470	0.036	1450
10×20	560	0.036	1450
10×22	680	0.036	1500
12.5×20	820	0.035	1660
12.5×25	1200	0.027	2000
12.5×30	★1 1500	0.024	2450
16×21	★2 1200	0.032	2000
16×25	1800	0.022	2560
16×31.5	2700	0.017	3010
16×35.5	3300	0.016	3150
18×21	★2 1500	0.030	2490
18×25	2200	0.022	2740
18×30.5	★2 3300	0.017	3330
18×35.5	3900	0.016	3680

Please refer to page 15 for the ripple current frequency coefficient.

★1 CXL series
★2 CXS series

■ Model No.

CX series

6 ME 1000 CX
- CX: Series code
- 1000: Rated capacitance code
- ME: Type code
- 6: Rated voltage

★1 CXL series

10 ME 1000 CXL
- CXL: Series code
- 1000: Rated capacitance code
- ME: Type code
- 10: Rated voltage

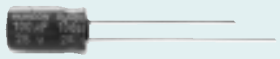
★2 CXS series

10 ME 3900 CXS
- CXS: Series code
- 3900: Rated capacitance code
- ME: Type code
- 10: Rated voltage

Aluminum Electrolytic Type / Radial Lead Type **RoHS compliance**

ME-AX Series

Low Impedance
Long Life

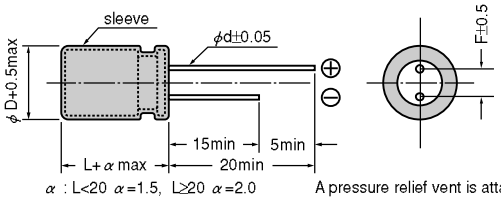


- 105℃, 2,500 to 10,000hrs.
- Solvent proof (within 5 minutes)

■ Specifications

Items	Condition		Specifications							
Rated voltage (V)	–		6.3	10	16	25	35	50	63	100
Surge voltage (V)	Room temperature		8.0	13	20	32	44	63	79	125
Category temperature range (℃)	–		−55 to +105							−40 to +105
Capacitance tolerance (%)	120Hz/20℃		M : ±20							
Dissipation Factor (tanδ)	120Hz/20℃		0.22	0.19	0.16	0.14	0.12	0.10	0.10	0.10
			When rated capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase.							
Leakage current (LC)	μA/after 2minutes (max)		The greater value of either 0.01CV or 3							
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−40℃ Z/Z20℃	3	2	2	2	2	2	2	2
		−55℃ Z/Z20℃	4	4	3	3	3	2	2	–
Endurance	105℃ rated voltage applied (With the rated ripple current)	Test	φ5 : 2,500hrs., φ6.3 : 3,000hrs., φ8×11.5, φ8×12.5 : 3,500hrs., φ8×15, φ8×20 : 4,500hrs., φ10 : 5,000hrs., φ12.5 : 7,000hrs., φ16 to φ18 : 10,000hrs.							
		△C/C	Within ±20% of the initial value							
		tanδ	≤ 2 times the initial specified value							
		LC	≤ The initial specified value							

■ Dimensions



α : L<20 α=1.5, L≥20 α=2.0

A pressure relief vent is attached to products over φD=6.3

(Unit : mm)

φD	5	6.3	8	10	12.5	16	18
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8

■ Size List, Impedance, Rated Ripple Current

V / Items / Case size φDxL(mm)	6.3			10		
	Capacitance (μF)	Impedance (Ωmax) (20℃/100kHz)	Rated ripple current (mArms) (105℃/10k to 200kHz)	Capacitance (μF)	Impedance (Ωmax) (20℃/100kHz)	Rated ripple current (mArms) (105℃/10k to 200kHz)
5×11	150	0.42	190	100	0.42	190
6.3×11	270	0.22	300	220	0.22	300
8×11.5	470	0.11	560	330	0.11	560
8×12.5	560	0.11	570	390	0.11	570
8×15	680	0.085	730	470	0.085	730
8×20	1000	0.069	800	★1 680	0.069	800
10×12.5	820	0.085	800	680	0.085	800
10×16	1200	0.062	1050	820	0.062	1050
10×20	1500	0.044	1250	1200	0.044	1250
10×22	1800	0.039	1450	1500	0.039	1450
12.5×20	2700	0.038	1600	2200	0.038	1600
12.5×25	3900	0.029	1800	2700	0.029	1800
16×25	5600	0.022	2100	3900	0.022	2100
16×31.5	8200	0.018	2350	5600	0.018	2350
16×35	10000	0.018	2550	6800	0.018	2550
18×35.5	12000	0.018	2800	8200	0.018	2800

Please refer to page 15 for the ripple current frequency coefficient.

★1 AXL series

■ Model No.

AX series

10 ME 470 AX
- AX: Series code
- 470: Rated capacitance code
- ME: Type code
- 10: Rated voltage

★1 AXL series

16 ME 470 AXL
- AXL: Series code
- 470: Rated capacitance code
- ME: Type code
- 16: Rated voltage

■ Size List, Impedance, Rated Ripple Current

V / Items / Case size φDxL(mm)	16			25		
	Capacitance (μF)	Impedance(Ωmax) (20℃/100kHz)	Rated ripple current(mArms) (105℃/10k to 200kHz)	Capacitance (μF)	Impedance(Ωmax) (20℃/100kHz)	Rated ripple current(mArms) (105℃/10k to 200kHz)
5×11	68	0.42	190	47	0.42	190
6.3×11	150	0.22	300	100	0.22	300
8×11.5	220	0.11	560	150	0.11	560
8×12.5	270	0.11	570	180	0.11	570
8×15	330	0.085	730	220	0.085	730
8×20	★1 470	0.069	800	330	0.069	800
10×12.5	470	0.085	800	270	0.085	800
10×16	560	0.062	1050	390	0.062	1050
10×20	820	0.044	1250	560	0.044	1250
10×22	1000	0.039	1450	680	0.039	1450
12.5×20	1200	0.038	1600	1000	0.038	1600
12.5×25	1800	0.029	1800	1200	0.029	1800
16×25	2700	0.022	2100	1800	0.022	2100
16×31.5	3900	0.018	2350	2700	0.018	2350
16×35	4700	0.018	2550	3300	0.018	2550
18×35.5	5600	0.018	2800	3900	0.018	2800

V / Items / Case size φDxL(mm)	35			50		
	Capacitance (μF)	Impedance(Ωmax) (20℃/100kHz)	Rated ripple current(mArms) (105℃/10k to 200kHz)	Capacitance (μF)	Impedance(Ωmax) (20℃/100kHz)	Rated ripple current(mArms) (105℃/10k to 200kHz)
5×11	4.7	1.2	115	4.7	2.0	90
5×11	10	0.90	140	10	1.7	110
5×11	22	0.42	190	15	1.2	130
5×11	33	0.42	190	22	0.70	160
6.3×11	68	0.22	300	47	0.43	220
8×11.5	100	0.11	560	68	0.26	360
8×12.5	120	0.11	570	82	0.24	400
8×15	150	0.085	730	100	0.18	500
8×20	★1 220	0.069	800	150	0.16	650
10×12.5	220	0.085	800	120	0.16	550
10×16	270	0.062	1050	180	0.12	760
10×20	330	0.044	1250	270	0.088	950
10×22	470	0.039	1450	330	0.072	1000
12.5×20	680	0.038	1600	470	0.059	1200
12.5×25	1000	0.029	1800	560	0.045	1400
16×25	1500	0.022	2100	1000	0.039	1750
16×31.5	2200	0.018	2350	1200	0.025	2100
16×35	★1 2200	0.018	2550	1500	0.025	2300
18×35.5	2700	0.018	2800	1800	0.024	2400

V / Items / Case size φDxL(mm)	63			100		
	Capacitance (μF)	Impedance(Ωmax) (20℃/100kHz)	Rated ripple current(mArms) (105℃/10k to 200kHz)	Capacitance (μF)	Impedance(Ωmax) (20℃/100kHz)	Rated ripple current(mArms) (105℃/10k to 200kHz)
5×11	18	1.6	140	5.6	2.7	120
6.3×11	33	0.90	200	12	1.4	170
8×11.5	68	0.52	275	22	0.81	230
8×12.5	★1 68	0.47	300	★1 22	0.79	250
8×15	82	0.34	360	27	0.64	295
8×20	★1 120	0.21	510	★1 39	0.36	400
10×12.5	120	0.26	420	39	0.39	360
10×16	150	0.20	525	47	0.35	420
10×20	220	0.15	765	68	0.24	630
10×22	270	0.12	840	82	0.21	700
12.5×20	330	0.10	960	100	0.15	800
12.5×25	470	0.064	1200	150	0.11	920
16×25	680	0.052	1500	220	0.071	1100
16×31.5	1000	0.042	1750	330	0.049	1490
16×35	1200	0.036	1920	390	0.043	1630
18×35.5	1500	0.033	2000	470	0.038	1700

Please refer to page 15 for the ripple current frequency coefficient.

★1 AXL series

Aluminum Electrolytic Type / Radial Lead Type **RoHS compliance**

ME-WX Series

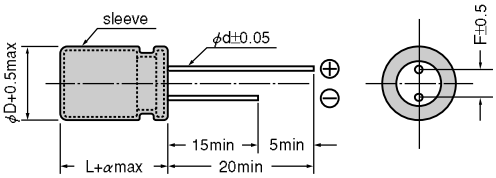
Low Impedance
High Ripple Current

- 105℃, 2,000 to 5,000hrs.
- Do not clean the capacitors using solvent.

■ Specifications

Items	Condition		Specifications					
Rated voltage (V)	–		6.3	10	16	25	35	50
Surge voltage (V)	Room temperature		8.0	13	20	32	44	63
Category temperature range (℃)	–		−40 to +105					
Capacitance tolerance (%)	120Hz/20℃		M : ±20					
Dissipation Factor (tanδ)	120Hz/20℃		0.22	0.19	0.16	0.14	0.12	0.10
			When rated capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase.					
Leakage current(LC)	μA/after 2minutes (max)		0.01CV					
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−25℃ Z/Z20℃	2	2	2	2	2	2
		−40℃ Z/Z20℃	3	3	3	3	3	3
Endurance	105℃ rated voltage applied (With the rated ripple current)	Test	φ5 to φ6.3 : 2,000hrs., φ8 : 3,000hrs., φ10 to φ12.5 : 4,000hrs., φ16 : 5,000hrs.					
		△C/C	Within ±25% of the initial value					
		tanδ	≤ 2 times the initial specified value					
		LC	≤ The initial specified value					

■ Dimensions



α: L<20 α=1.5, L≥20 α=2.0
A pressure relief vent is attached to products over φD=6.3

(Unit : mm)

φD	5	6.3	8	10	12.5	16
F	2.0	2.5	3.5	5.0	5.0	7.5
φd	0.5	0.5	0.6	0.6	0.6★	0.8

★φ12.5×30:φd=0.8

■ Size List, Impedance, Rated Ripple Current

V / Items / Case size φDxL(mm)	6.3 Capacitance (μF)	6.3 Impedance(Ωmax) (20℃/100kHz)	6.3 Rated ripple current(mArms) (105℃/100kHz)	10 Capacitance (μF)	10 Impedance(Ωmax) (20℃/100kHz)	10 Rated ripple current(mArms) (105℃/100kHz)
5×11	150	0.30	250	100	0.30	250
6.3×11	330	0.13	405	220	0.13	405
8×11.5	560	0.072	760	470	0.072	760
8×15	820	0.056	995	★1 680	0.056	995
8×20	★1 1200	0.041	1250	★1 1000	0.041	1250
10×12.5	1000	0.053	1030	680	0.053	1030
10×16	1200	0.038	1430	1000	0.038	1430
10×20	1500	0.023	1820	1200	0.023	1820
10×20	2200	0.023	1820	1500	0.023	1820
10×23	★3 2200	0.022	2150	★3 1500	0.022	2150
12.5×20	3300	0.021	2360	2200	0.021	2360
12.5×25	3900	0.018	2770	3300	0.018	2770
12.5×30	4700	0.016	3290	3900	0.016	3290
16×21	5600	0.018	3140	★2 3900	0.018	3140
16×25	6800	0.016	3460	5600	0.016	3460

★1 WXL series ★2 WXS series ★3 WXV series

■ Size List, Impedance, Rated Ripple Current

V / Items / Case size φDxL(mm)	16			25		
	Capacitance (μF)	Impedance(Ωmax) (20℃/100kHz)	Rated ripple current(mArms) (105℃/100kHz)	Capacitance (μF)	Impedance(Ωmax) (20℃/100kHz)	Rated ripple current(mArms) (105℃/100kHz)
5×11	56	0.30	250	47	0.30	250
6.3×11	120	0.13	405	100	0.13	405
8×11.5	330	0.072	760	220	0.072	760
8×15	★1 470	0.056	995	330	0.056	995
8×20	★1 680	0.041	1250	★1 470	0.041	1250
10×12.5	470	0.053	1030	★2 330	0.053	1030
10×16	680	0.038	1430	470	0.038	1430
10×20	1000	0.023	1820	680	0.023	1820
10×20	1200	0.023	1820	820	0.023	1820
10×23	★3 1200	0.022	2150	★3 820	0.022	2150
12.5×20	1500	0.021	2360	1000	0.021	2360
12.5×25	2200	0.018	2770	1500	0.018	2770
12.5×30	2700	0.016	3290	1800	0.016	3290
16×21	★2 2700	0.018	3140	★2 1800	0.018	3140
16×25	3900	0.016	3460	2700	0.016	3460

V / Items / Case size φDxL(mm)	35			50		
	Capacitance (μF)	Impedance(Ωmax) (20℃/100kHz)	Rated ripple current(mArms) (105℃/100kHz)	Capacitance (μF)	Impedance(Ωmax) (20℃/100kHz)	Rated ripple current(mArms) (105℃/100kHz)
5×11	33	0.30	250	22	0.34	238
6.3×11	56	0.13	405	47	0.14	385
8×12.5	★3 150	0.072	760	100	0.074	724
8×15	220	0.056	995	120	0.061	950
8×20	★1 270	0.041	1250	180	0.046	1190
10×12.5	★2 220	0.053	1030	150	0.061	979
10×16	330	0.038	1430	220	0.042	1370
10×20	470	0.023	1820	270	0.030	1580
10×23	★3 560	0.022	2150	330	0.028	1870
12.5×20	680	0.021	2360	470	0.027	2050
12.5×25	1000	0.018	2770	560	0.023	2410
12.5×30	1200	0.016	3290	680	0.021	2860
16×21	★2 1200	0.018	3140	820	0.023	2730
16×25	1800	0.016	3460	1000	0.021	3010

Please refer to page 15 for the ripple current frequency coefficient.

★1 WXL series ★2 WXS series ★3 WXV series

■ Model No.

WX series

6 ME 1000 WX
- WX: Series code
- 1000: Rated capacitance code
- ME: Type code
- 6: Rated voltage

★1 WXL series

10 ME 1000 WXL
- WXL: Series code
- 1000: Rated capacitance code
- ME: Type code
- 10: Rated voltage

★2 WXS series

25 ME 330 WXS
- WXS: Series code
- 330: Rated capacitance code
- ME: Type code
- 25: Rated voltage

★3 WXV series

35 ME 560 WXV
- WXV: Series code
- 560: Rated capacitance code
- ME: Type code
- 35: Rated voltage

CE-BJ
CE-BE
CE-BD
CE-BSS
CE-BS
CE-FE
CE-FD
CE-LD
CE-FSS
CE-FU
CE-FS
CE-FH
CE-GA
CE-AX
CE-KX
CE-LX
CE-LS
CE-LH
CE-LL
CE-PC
CE-PH
CE-NP
CE-FN
ME-SWB
ME-UZ·SZ
ME-UAX·SAX
ME-LS
ME-HC
ME-CZ
ME-CA
ME-CX
ME-AX
ME-WX
ME-WA
ME-WL
ME-SWG
ME-WG
ME-PX
ME-HPC·HPD
ME-FC·FD
ME-FAZ
ME-FH
ME-SWN
ME-HWN

Aluminum Electrolytic Type / Radial Lead Type **RoHS compliance**

ME-WA Series

105℃, Miniature, Long Life
Low Impedance, High Ripple Current

- 105℃, 8,000 to 10,000hrs.
- Do not clean the capacitors using solvent.

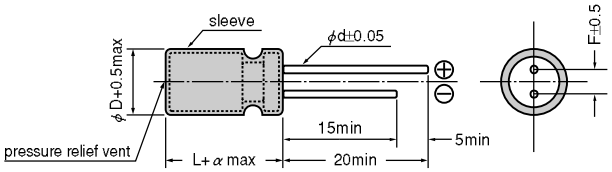
50V NEW

■ Specifications

Items	Condition		Specifications					
Rated voltage (V)	–		6.3	10	16	25	35	50
Surge voltage (V)	Room temperature		8.0	13	20	32	44	63
Category temperature range (℃)	–		−40 to +105					
Capacitance tolerance (%)	120Hz/20℃		M : ±20					
Dissipation Factor (tanδ)	120Hz/20℃		0.22	0.19	0.16	0.14	0.12	0.10
			When rated capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase.					
Leakage current (LC)	μA/after 2minutes (max)		0.03CV					
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−25℃ Z/Z20℃	2	2	2	2	2	2
		−40℃ Z/Z20℃	3	3	3	3	3	3
Endurance	105℃ rated voltage applied (With the rated ripple current)	Test	φ8 : 8,000hrs., φ10 to φ16 : 10,000hrs.					
		△C/C	Within ±25% of the initial value (6.3V, 10V : ±30%)					
		tanδ	≤ 2 times the initial specified value					
		LC	≤ The initial specified value					

■ Dimensions

(Unit : mm)



α : L<20 α=1.5, L≥20 α=2.0 (Only φ8X11.5 α=2.0)

φD	8	10	12.5	16
F	3.5	5.0	5.0	7.5
φd	0.6	0.6	0.6★	0.8

★φ12.5×30:φd=0.8

■ Size List, Impedance, Rated Ripple Current

V / Items / Case size φDxL(mm)	6.3 Capacitance (μF)	6.3 Impedance(Ωmax) (20℃/100kHz)	6.3 Rated ripple current(mArms) (105℃/100kHz)	10 Capacitance (μF)	10 Impedance(Ωmax) (20℃/100kHz)	10 Rated ripple current(mArms) (105℃/100kHz)
8×11.5	820	0.059	945	680	0.059	945
8×15	★1 1200	0.046	1250	★1 1000	0.046	1250
8×20	1500	0.031	1500	★1 1500	0.031	1500
10×12.5	1200	0.043	1330	1000	0.043	1330
10×16	1800	0.030	1760	1500	0.030	1760
10×20	2200	0.021	1960	1800	0.021	1960
10×22	2700	0.020	2250	2200	0.020	2250
12.5×20	3900	0.019	2480	3300	0.019	2480
12.5×25	4700	0.016	2900	3900	0.016	2900
12.5×30	5600	0.014	3450	★1 4700	0.014	3450
16×21	6800	0.018	3250	4700	0.018	3250
16×25	8200	0.014	3630	6800	0.014	3630

★1 WAL series

■ Size List, Impedance, Rated Ripple Current

V / Items / Case size φDxL(mm)	16			25		
	Capacitance (μF)	Impedance(Ωmax) (20℃/100kHz)	Rated ripple current(mArms) (105℃/100kHz)	Capacitance (μF)	Impedance(Ωmax) (20℃/100kHz)	Rated ripple current(mArms) (105℃/100kHz)
8×11.5	470	0.059	945	330	0.059	945
8×15	★1 680	0.046	1250	390	0.046	1250
8×20	★1 1000	0.031	1500	560	0.031	1500
10×12.5	680	0.043	1330	470	0.043	1330
10×16	1000	0.030	1760	680	0.030	1760
10×20	1500	0.021	1960	820	0.021	1960
10×22	1800	0.020	2250	1000	0.020	2250
12.5×20	2200	0.019	2480	1500	0.019	2480
12.5×25	2700	0.016	2900	1800	0.016	2900
12.5×30	★1 3300	0.014	3450	★1 2200	0.014	3450
16×21	3300	0.018	3250	2200	0.018	3250
16×25	4700	0.014	3630	3300	0.014	3630

V / Items / Case size φDxL(mm)	35			50		
	Capacitance (μF)	Impedance(Ωmax) (20℃/100kHz)	Rated ripple current(mArms) (105℃/100kHz)	Capacitance (μF)	Impedance(Ωmax) (20℃/100kHz)	Rated ripple current(mArms) (105℃/100kHz)
8×11.5	220	0.059	945	100	0.074	724
8×15	270	0.046	1250	120	0.061	950
8×20	390	0.031	1500	180	0.046	1190
10×12.5	330	0.043	1330	150	0.061	979
10×16	470	0.030	1760	220	0.042	1370
10×20	560	0.021	1960	270	0.030	1580
10×22	680	0.020	2250	330	0.028	1870
12.5×20	1000	0.019	2480	470	0.027	2050
12.5×25	1200	0.016	2900	560	0.023	2410
12.5×30	★1 1500	0.014	3450	680	0.021	2860
16×21	1500	0.018	3250	820	0.023	2730
16×25	2200	0.014	3630	1000	0.021	3010

Please refer to page 15 for the ripple current frequency coefficient.

★1 WAL series

■ Model No.

WA series

10 ME 1000 WA
- WA: Series code
- 1000: Rated capacitance code
- ME: Type code
- 10: Rated voltage

★1 WAL series

16 ME 1000 WAL
- WAL: Series code
- 1000: Rated capacitance code
- ME: Type code
- 16: Rated voltage

Aluminum Electrolytic Type / Radial Lead Type **RoHS compliance**

ME-WL Series

105℃, Miniature, Low Impedance

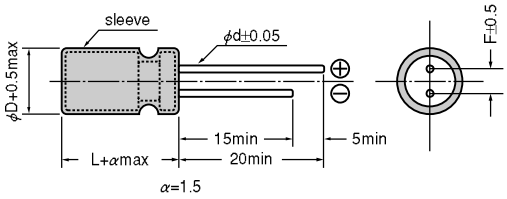
Long Life

- 105℃, 4,000 to 5,000hrs.
- Do not clean the capacitors using solvent.

■ Specifications

Items	Condition		Specifications						
Rated voltage (V)	–		6.3	10	16	25	35	50	63
Surge voltage (V)	Room temperature		8.0	13	20	32	44	63	79
Category temperature range (℃)	–		−40 to +105						
Capacitance tolerance (%)	120Hz/20℃		M : ±20						
Dissipation Factor (tan δ)	120Hz/20℃		0.22	0.19	0.16	0.14	0.12	0.10	0.10
Leakage current (LC)	μA/after 2minutes (max)		The greater value of either 0.01CV or 3						
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−25℃ Z/Z20℃	4	3	2	2	2	2	2
		−40℃ Z/Z20℃	8	6	4	3	3	3	3
Endurance	105℃, rated voltage applied (With the rated ripple current)	test	4,000hrs.		5,000hrs.				
		△C/C	Within ±25% of the initial value						
		tan δ	≤ 2 times the initial specified value						
		LC	≤ The initial specified value						

■ Dimensions



A pressure relief vent is attached to products φD=6.3

(Unit : mm)

φD	5	6.3
F	2.0	2.5
φd	0.5	0.5

■ Size List, Impedance, Rated Ripple Current

μF \ V	6.3	10	16	25	35	50	63
1.0						5×11 4.80 30	
2.2						5×11 3.00 43	
3.3						5×11 2.64 53	
4.7						5×11 2.28 88	
10						5×11 1.80 100	
15							5×11 1.06 165
18							5×11 1.06 165
22						5×11 0.84 180	6.3×11 0.42 265
27						5×11 0.84 180	
33					5×11 0.69 210		6.3×11 0.42 265
47				5×11 0.69 210	5×11 0.69 210	6.3×11 0.40 250	
56			5×11 0.69 210		6.3×11 0.26 340	6.3×11 0.36 295	
100		5×11 0.69 210	5×11 0.69 210	6.3×11 0.26 340	6.3×11 0.26 340		
120			6.3×11 0.26 340				
150	5×11 0.69 210	5×11 0.69 210					
220		6.3×11 0.26 340					
330	6.3×11 0.26 340						

Please refer to page 15 for the ripple current frequency coefficient.

Rated ripple current mArms(100kHz, 105℃)

Impedance(Ω) max at 100kHz, 20℃

Case size:φDxL(mm)

■ Model No.

16 ME 120 WL
- WL: Series code
- 120: Rated capacitance code
- ME: Type code
- 16: Rated voltage

Aluminum Electrolytic Type / Radial Lead Type **RoHS compliance**

ME-SWG Series

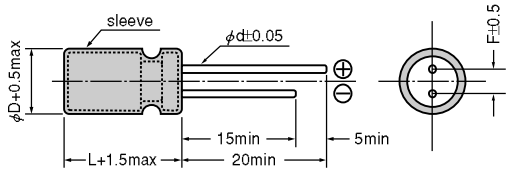
Low ESR, Miniature
7mm Height

- 105℃, 1,000 to 2,000hrs.
- Do not clean the capacitors using solvent.

■ Specifications

Items	Condition		Specifications				
Rated voltage (V)	–		6.3	10	16	25	35
Surge voltage (V)	Room temperature		8.0	13	20	32	44
Category temperature range (℃)	–		−40 to +105				
Capacitance tolerance (%)	120Hz/20℃		M : ±20				
Dissipation Factor (tanδ)	120Hz/20℃		0.24	0.20	0.16	0.14	0.12
Leakage current (LC)	μA/after 2minutes (max)		0.03CV				
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−25℃ Z/Z20℃	2	2	2	2	2
		−40℃ Z/Z20℃	3	3	3	3	3
Endurance	105℃ rated voltage applied (With the rated ripple current)	Test	φ5 : 1,000hrs., φ6.3 : 2,000hrs., (6ME330SWG, 10ME220SWG : 1,000hrs.)				
		△C/C	Within ±25% of the initial value (6.3V, 10V : ±30%)				
		tanδ	≤ 2 times the initial specified value				
		LC	≤ The initial specified value				

■ Dimensions



(Unit : mm)

φD	5	6.3
F	2.0	2.5
φd	0.45	0.45

■ Size List, ESR, Rated Ripple Current

V / Items / μF	6.3			10			16			25			35		
	Case size φDxL (mm)	ESR (Ωmax) 20℃/100kHz	Ripple current (mArms) 105℃/100kHz	Case size φDxL (mm)	ESR (Ωmax) 20℃/100kHz	Ripple current (mArms) 105℃/100kHz	Case size φDxL (mm)	ESR (Ωmax) 20℃/100kHz	Ripple current (mArms) 105℃/100kHz	Case size φDxL (mm)	ESR (Ωmax) 20℃/100kHz	Ripple current (mArms) 105℃/100kHz	Case size φDxL (mm)	ESR (Ωmax) 20℃/100kHz	Ripple current (mArms) 105℃/100kHz
22										5×7	0.17	390	5×7	0.17	390
39							5×7	0.17	390	5×7	0.17	390			
47													6.3×7	0.082	760
56				5×7	0.17	390									
100	5×7	0.17	390	6.3×7	0.082	760	6.3×7	0.082	760	6.3×7	0.082	760			
150	6.3×7	0.082	760	6.3×7	0.082	760	6.3×7	0.082	760						
220	6.3×7	0.082	760	6.3×7	0.082	760									
330	6.3×7	0.082	760												

Please refer to page 15 for the ripple current frequency coefficient.

■ Model No.

25 ME 100 SWG
- SWG — Series code
- 100 — Rated capacitance code
- ME — Type code
- 25 — Rated voltage

Aluminum Electrolytic Type / Radial Lead Type **RoHS compliance**

ME-WG Series

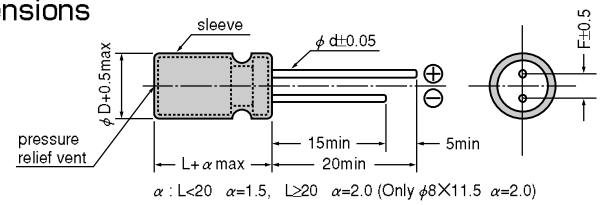
Super Low ESR, Miniature

- 105℃, 2,000 to 4,000hrs.
- Do not clean the capacitors using solvent.

■ Specifications

Items	Condition		Specifications			
Rated voltage (V)	–		6.3	10	16	25
Surge voltage (V)	Room temperature		8.0	13	20	32
Category temperature range (℃)	–		−40 to +105			
Capacitance tolerance (%)	120Hz/20℃		M : ±20			
Dissipation Factor (tanδ)	120Hz/20℃		0.22	0.19	0.16	0.14
			When rated capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase.			
Leakage current (LC)	μA/after 2minutes (max)		0.03CV			
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−25℃ Z/Z20℃	2	2	2	2
		−40℃ Z/Z20℃	3	3	3	3
Endurance	105℃ rated voltage applied (With the rated ripple current)	Test	φ8×11.5, φ8×16, φ10×12.5, φ10×16 : 2,000hrs., φ8×20 : 3,000hrs., φ10×20, φ10×23 : 4,000hrs.			
		△C/C	Within ±25% of the initial value			
		tan δ	≤ 2 times the initial specified value			
		LC	≤ The initial specified value			

■ Dimensions



α : L<20 α=1.5, L≥20 α=2.0 (Only φ8×11.5 α=2.0)

(Unit : mm)

φD	8	10
F	3.5	5.0
φd	0.6	0.6

■ Size List, ESR, Rated Ripple Current

V / Items / μF	6.3			10			16			25		
	Case size φDxL (mm)	ESR (mΩmax) 20℃/100kHz	Ripple current (mArms) 105℃/100kHz	Case size φDxL (mm)	ESR (mΩmax) 20℃/100kHz	Ripple current (mArms) 105℃/100kHz	Case size φDxL (mm)	ESR (mΩmax) 20℃/100kHz	Ripple current (mArms) 105℃/100kHz	Case size φDxL (mm)	ESR (mΩmax) 20℃/100kHz	Ripple current (mArms) 105℃/100kHz
220										8×11.5	30	1110
330							8×11.5	30	1140	8×11.5	32	1080
										10×12.5 ★3	25	1440
470				8×11.5	30	1140	8×11.5	36	1140	8×20 ★1	18	1820
										10×12.5	27	1390
										10×16 ★3	20	1920
680				8×11.5	36	1140	8×16 ★1	28	1490	10×16	22	1830
							10×12.5	26	1540	10×20 ★3	16	2180
820	8×11.5	36	1140									
1000	8×11.5	30	1140	8×16 ★1	28	1490	8×20 ★1	19	1870	10×23 ★1	16	2180
				10×12.5	26	1540	10×16	19	2000			
1200	8×16	28	1490	8×20 ★1	19	1870						
1500	8×20 ★1	19	1870	8×20 ★1	19	1870	10×20	13	2550			
	8×20 ★2	16	1950	10×16	19	2000						
	10×12.5	26	1540									
	10×16 ★3	18	2000									
1800	8×20 ★2	16	1950	10×20	13	2550	10×23	12	2800			
	10×16	19	2000									
2200	10×20	13	2550	10×23	12	2800						
3300	10×23	12	2800									

Please refer to page 15 for the ripple current frequency coefficient.

★1 WGL series ★2 WGL2 series ★3 WGV series

■ Model No.

WG series
10 ME 1000 WG
- WG — Series code
- ME — Rated capacitance code
- 1000 — Type code
- 10 — Rated voltage

★1 WGL series
6 ME 1500 WGL
- WGL — Series code
- ME — Rated capacitance code
- 1500 — Type code
- 6 — Rated voltage

★2 WGL2 series
6 ME 1500 WGL2
- WGL2 — Series code
- ME — Rated capacitance code
- 1500 — Type code
- 6 — Rated voltage

★3 WGV series
25 ME 470 WGV
- WGV — Series code
- ME — Rated capacitance code
- 470 — Type code
- 25 — Rated voltage

Aluminum Electrolytic Type / Radial Lead Type **RoHS compliance**

ME-PX Series

125℃, 4,000Hrs.
High Peformance

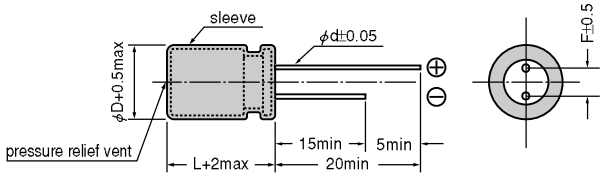
- 125℃, 2,000 to 4,000hrs.
- Solvent proof (within 5 minutes)

■ Specifications

Items	Condition		Specifications					
Rated voltage (V)	–		10	16	25	35	50	100
Surge voltage (V)	Room temperature		13	20	32	44	63	125
Category temperature range (℃)	–		−55 to +125					
Capacitance tolerance (%)	120Hz/20℃		M : ±20					
Dissipation Factor (tanδ)	120Hz/20℃		0.20	0.16	0.14	0.12	0.10	0.08
			When rated capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase.					
Leakage current (LC)	μA/after 2minutes (max)		The greater value of either 0.01CV or 3					
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−40℃ Z/Z20℃	2	2	2	2	2	2
		−55℃ Z/Z20℃	4	3	3	3	2	2
Endurance	125℃ rated voltage applied (With the rated ripple current)	Test	φ8 : 2,000hrs., φ10 : 3,000hrs., φ12.5 to φ18 : 4,000hrs.					
		△C/C	Within ±30% of the initial value					
		tanδ	≤ 3 times the initial specified value					
		LC	≤ The initial specified value					

■ Dimensions

(Unit : mm)



φD	8	10	12.5	16	18
F	3.5	5.0	5.0	7.5	7.5
φd	0.6	0.6	0.6	0.8	0.8

■ Size List, Impedance, Rated Ripple Current

μF \ V	10			16			25			35			50			100		
1.0													8×11.5	2.0	28			
2.2													8×11.5	1.8	42			
3.3													8×11.5	1.5	49			
4.7													8×11.5	1.15	70	8×11.5	2.0	100
10													8×11.5	0.95	150	8×11.5	1.5	150
22													8×11.5	0.65	210	8×12.5	1.5	190
33													8×12.5	0.45	230	10×12.5	0.75	330
47										8×12.5	0.45	230	8×12.5	0.45	230	10×16	0.57	400
100				8×11.5	0.39	250	8×12.5	0.26	280	10×12.5	0.35	315	10×12.5	0.35	315	12.5×20	0.29	580
220	8×12.5	0.26	280	10×12.5	0.20	350	10×12.5	0.17	380	10×16	0.29	420	10×20	0.20	560	16×25	0.22	670
330	10×12.5	0.20	350	10×12.5	0.17	380	10×16	0.15	490	10×20	0.20	560	12.5×20	0.12	630	16×31.5	0.15	810
470	10×12.5	0.17	380	10×16	0.15	490	10×20	0.12	590	12.5×20	0.12	630	12.5×25	0.10	770	18×31.5	0.11	950
1000	10×20	0.12	590	12.5×20	0.073	770	12.5×25	0.050	1050	16×25	0.058	980	16×31.5	0.045	1200			
2200	12.5×25	0.050	1050	16×25	0.044	1150	16×31.5	0.030	1500									
3300	16×25	0.044	1150	16×31.5	0.030	1500												
4700	16×31.5	0.030	1500															

Please refer to page 15 for the ripple current frequency coefficient.

Impedance(Ω) max at 100kHz, 20℃

Case size:φDxL(mm)

Rated ripple current mArms(10k to 100kHz, 125℃)

■ Model No.

50 ME 220 PX
- PX: Series code
- 220: Rated capacitance code
- ME: Type code
- 50: Rated voltage

ME-HPC·HPD Series

Miniature, Mid. and High Voltage

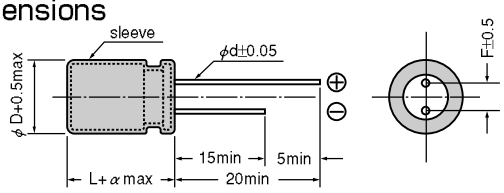
Low Profile, Mid. and High Voltage

● Do not clean the capacitors using solvent.

■ Specifications

Items	Condition		Specifications					
Rated voltage (V)	–		160	200	250	350	400	450
Surge voltage (V)	Room temperature		200	250	300	400	450	500
Category temperature range (℃)	–		−40 to +85			−25 to +85		
Capacitance tolerance (%)	120Hz/20℃		M : ±20					
Dissipation Factor (tanδ)	120Hz/20℃		0.20	0.20	0.20	0.25	0.25	0.25
Leakage current (LC)	μA/after 2minutes (max)	CV ≤ 1,000	0.03CV +15					
		CV > 1,000	0.02CV +25					
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−25℃ Z/Z20℃	3	3	3	4	6	12
		−40℃ Z/Z20℃	6	6	6	–	–	–
Endurance	85℃, 2,000hrs. rated voltage applied (With the rated ripple current)	△C/C	Within ±20% of the initial value					
		tanδ	≤ 2 times the initial specified value					
		LC	≤ The initial specified value					

■ Dimensions



α : L<20 α=1.5, L≥20 α=2.0
A pressure relief vent is attached to products over φD=6.3

(Unit : mm)

φD	5	6.3	8	10	12.5	16	18
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8

■ Size List, Rated Ripple Current

μF \ V	160		200		250		350		400		450	
0.47	5×11	10	5×11	11	5×11	12	6.3×11	14	6.3×11	14		
1.0	5×11	21	5×11	23	5×11	25	6.3×11	29	8×11.5	29	8×12.5	26
2.2	6.3×11	31	6.3×11	34	6.3×11	35	8×11.5	40	8×11.5	40	10×16	40
3.3	6.3×11	40	6.3×11	46	8×11.5	48	8×12.5	52	10×12.5	52	10×20	52
4.7	6.3×11	55	8×11.5	57	8×11.5	59	10×12.5	67	10×16	67	12.5×20	67
10	8×11.5	90	8×12.5	92	10×12.5	94	10×16	100	10×20	100	12.5×25 16×21	100
22	10×12.5	153	10×16	160	10×20	170	12.5×20	175	12.5×25 16×21	180	16×25 18×21	180
33	10×20	195	10×20	210	12.5×20	220	12.5×25 16×21	225	16×25 18×21	230	16×30 18×25	220
47	12.5×20	245	12.5×20	250	12.5×25 16×21	260	16×25 18×21	260	16×30 18×25	270	18×35.5	245
68	12.5×20	310	12.5×25 16×21	325	16×25 18×21	335	16×35.5 18×25	340	16×35.5 18×30.5	345		
82	12.5×25 16×21	380	16×21	390	16×30 18×25	400	18×30.5	405	18×35.5	420		
100	12.5×25 16×21	410	16×25 18×21	430	16×30 18×25	432	18×35.5	440				
150	16×30 18×25	550	16×35.5 18×30.5	575	18×35.5	588						
220	16×35.5 18×30.5	745	18×35.5	760								

Please refer to page 15 for the ripple current frequency coefficient.
Upper : HPC series(0.47μF to 4.7μF:HPC series)
Lower : HPD series

Rated ripple current mArms(120Hz, 85℃)

Case size:φDxL(mm)

■ Model No.

HPC series: 160 ME 33 HPC
- 160 — Rated voltage
- ME — Type code
- 33 — Rated capacitance code
- HPC — Series code

HPD series: 450 ME 10 HPD
- 450 — Rated voltage
- ME — Type code
- 10 — Rated capacitance code
- HPD — Series code

Aluminum Electrolytic Type / Radial Lead Type **RoHS compliance**

ME-FC·FD Series

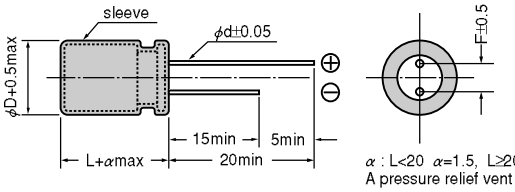
105℃ Miniature, Mid. and High Voltage
105℃ Low Profile, Mid. and High Voltage

- 105℃, 1,000 to 2,000hrs.
- Do not clean the capacitors using solvent.

■ Specifications

Items	Condition		Specifications					
Rated voltage (V)	–		160	200	250	350	400	450
Surge voltage (V)	Room temperature		200	250	300	400	450	500
Category temperature range (℃)	–		−40 to +105					−25 to +105
Capacitance tolerance (%)	120Hz/20℃		M : ±20					
Dissipation Factor (tanδ)	120Hz/20℃		0.20	0.20	0.20	0.25	0.25	0.25
Leakage current (LC)	μA/after 2minutes (max)	CV ≤ 1,000	0.03CV + 15					
		CV > 1,000	0.02CV + 25					
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−25℃ Z/Z20℃	3	3	3	4	6	6
		−40℃ Z/Z20℃	6	6	6	8	10	–
Endurance	105℃ rated voltage applied (With the rated ripple current)	Test	φ5 to φ8 : 1,000hrs., φ10 to φ18 : 2,000hrs.					
		△C/C	Within ±20% of the initial value					
		tanδ	≤ 2 times the initial specified value					
		LC	≤ The initial specified value					

■ Dimensions



α : L<20 α=1.5, L≥20 α=2.0
A pressure relief vent is attached to products over φD=6.3

(Unit : mm)

φD	5	6.3	8	10	12.5	16	18
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8

■ Size List, Rated Ripple Current

μF \ V	160		200		250		350		400		450	
0.47	5×11	7.0	5×11	8.0	5×11	8.0	6.3×11	10	6.3×11	10		
1.0	5×11	15	5×11	16	5×11	18	6.3×11	20	8×11.5	20	8×12.5	18
2.2	6.3×11	22	6.3×11	24	6.3×11	25	8×11.5	28	8×11.5	28	10×16	28
3.3	6.3×11	28	6.3×11	32	8×11.5	34	8×12.5	36	10×12.5	36	10×20	36
4.7	6.3×11	39	8×11.5	40	8×11.5	41	10×12.5	47	10×16	47	12.5×20	47
10	8×11.5	63	8×12.5	64	10×12.5	66	10×20	70	10×20	70	12.5×25 16×21	70
22	10×12.5	107	10×16	112	10×20	119	12.5×25 16×21	123	12.5×25 16×21	126	16×25 18×21	125
33	10×20	137	10×20	147	12.5×20	154	16×25 18×21	158	16×25 18×21	161	16×30 18×25	154
47	12.5×20	172	12.5×20	175	12.5×25 16×21	182	16×30 18×25	182	16×30 18×25	189	18×35.5	172
68	12.5×20	217	12.5×25 16×21	228	16×25 16×21	235	16×35.5 18×30.5	242	18×35.5	249		
82	12.5×25 16×21	270		277	16×30 18×25	284	18×35.5	294				
100	12.5×25 16×21	287	16×25 18×21	301	16×35.5 18×25	302						
150	16×30 18×25	385	16×35.5 18×30.5	403	18×35.5	412						
220	16×35.5 18×30.5	522	18×35.5	532								

Upper:FC series (0.47μF to 4.7μF:FC series)
Lower:FD series
Please refer to page 15 for the ripple current frequency coefficient.

Rated ripple current mArms(120Hz, 105℃)
Case size:φDxL(mm)

■ Model No.

FC series: 160 ME 33 FC
- Series code
- Rated capacitance code
- Type code
- Rated voltage

FD series: 450 ME 10 FD
- Series code
- Rated capacitance code
- Type code
- Rated voltage

Aluminum Electrolytic Type / Radial Lead Type **RoHS compliance**

ME-FAZ Series

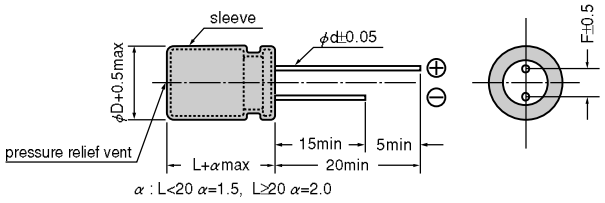
Low Impedance
High Ripple, Mid. Voltage

- 105℃, 1,000 to 2,000hrs.
- Do not clean the capacitors using solvent.

■ Specifications

Items	Condition		Specifications			
Rated voltage (V)	–		160	180	200	250
Surge voltage (V)	Room temperature		200	225	250	300
Category temperature range (℃)	–		−40 to +105			
Capacitance tolerance (%)	120Hz/20℃		M : ±20			
Dissipation Factor (tan δ)	120Hz/20℃		0.10	0.10	0.10	0.10
Leakage current(LC)	μA/after 2minutes (max)	CV ≤ 1,000	0.03CV + 15			
		CV > 1,000	0.02CV + 25			
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−25℃ Z/Z20℃	3	3	3	3
		−40℃ Z/Z20℃	5	5	5	5
Endurance	105℃ rated voltage applied (With the rated ripple current)	Test	φ8 : 1,000hrs., φ10 to φ18 : 2,000hrs.			
		△C/C	Within ±20% of the initial value			
		tan δ	≤ 2 times the initial specified value			
		LC	≤ The initial specified value			

■ Dimensions



(Unit : mm)

φD	8	10	12.5	16	18
F	3.5	5.0	5.0	7.5	7.5
φd	0.6	0.6	0.6	0.8	0.8

■ Size List, Impedance, Rated Ripple Current

μF \ V	160			180			200			250		
1.0							8×11.5	6.30	56	8×11.5	4.83	64
2.2							8×11.5	4.65	79	8×11.5	3.93	86
3.3	8×11.5	3.12	106	8×11.5	3.12	106	8×11.5	3.12	106	8×11.5	3.29	116
4.7	8×11.5	2.58	117	8×11.5	2.58	117	8×12.5	1.65	151	10×12.5	1.89	160
10	8×12.5	2.05	212	8×12.5	2.05	212	10×12.5	1.24	233	10×16	1.32	253
22	10×16	0.96	389	10×16	0.96	389	10×20	0.85	423	12.5×20	0.58	440
33	10×20	0.54	515	10×20	0.54	515	12.5×20	0.50	530	12.5×25	0.54	546
47	12.5×20	0.41	638	12.5×20	0.41	638	12.5×25	0.38	659	16×25	0.39	665
100	16×25	0.24	728	16×25	0.24	728	16×30	0.17	740	16×35.5	0.17	751
150	16×30	0.13	844	16×35.5	0.12	892	18×35.5	0.12	917	18×35.5	0.12	955
220	16×35.5	0.11	1113	18×35.5	0.10	1134						

Please refer to page 15 for the ripple current frequency coefficient.

Case size:φDxL(mm)
Rated ripple current mArms(100kHz, 105℃)
Impedance(Ω) max at 100kHz, 20℃

■ Model No.

250 ME 1 FAZ
- Series code
- Rated capacitance code
- Type code
- Rated voltage

Aluminum Electrolytic Type / Radial Lead Type **RoHS compliance**

ME-FH Series

105℃, Miniature, Long Life
Mid. and High Voltage

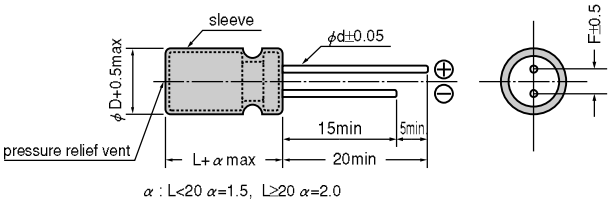
- 105℃, 10,000hrs.
- Do not clean the capacitors using solvent.

■ Specifications

Items	Condition		Specifications					
Rated voltage (V)	–		160	200	250	350	400	450
Surge voltage (V)	Room temperature		200	250	300	400	450	500
Category temperature range (℃)	–		−40 to +105					−25 to +105
Capacitance tolerance (%)	120Hz/20℃		M : ±20					
Dissipation Factor (tan δ)	120Hz/20℃		0.20	0.20	0.20	0.25	0.25	0.25
Leakage current(LC)	μA/after 2minutes (max)		0.02CV + 25					
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−25℃ Z/Z20℃	3	3	3	4	6	6
		−40℃ Z/Z20℃	6	6	6	8	10	–
Endurance	105℃, 10,000hrs. rated voltage applied (With the rated ripple current)	△C/C	Within ±20% of the initial value					
		tan δ	≤ 2 times the initial specified value					
		LC	≤ The initial specified value					

■ Dimensions

(Unit : mm)



φD	10	12.5	16	18
F	5.0	5.0	7.5	7.5
φd	0.6	0.6	0.8	0.8

■ Size List, Rated Ripple Current

μF \ V	160		200		250		350		400		450	
6.8									10×16	88	10×20	58
10					10×16	106	10×16	100	10×20	108	12.5×20	145
22			10×16	173	10×20	184	12.5×20	184	12.5×25	195	16×25	218
33	10×16	190	10×20	227	12.5×20	238	12.5×25	224	16×25	249	16×31.5	243
47	10×20	270	12.5×20	270	12.5×25	282	16×25	282	16×31.5	292	18×31.5	304
68	12.5×20	336	12.5×20	325	16×25	364	16×31.5	334	18×31.5	346	18×41	340
82	12.5×20	346	12.5×25	370	16×25	403	18×31.5	360	18×35.5	420		
100	12.5×25	410	16×25	436	16×31.5	418			18×41	500		
150	16×25	500	16×31.5	470	18×31.5	545						
220	16×31.5	570	18×31.5	660								

Please refer to page 15 for the ripple current frequency coefficient.

Rated ripple current mArms(120Hz, 105℃)

Case size:φDxL(mm)

■ Model No.

200 ME 33 FH
- FH: Series code
- 33: Rated capacitance code
- ME: Type code
- 200: Rated voltage

CE-BJ
CE-BE
CE-BD
CE-BSS
CE-BS
CE-FE
CE-FD
CE-LD
CE-FSS
CE-FU
CE-FS
CE-FH
CE-GA
CE-AX
CE-KX
CE-LX
CE-LS
CE-LH
CE-LL
CE-PC
CE-PH
CE-NP
CE-FN
ME-SWB
ME-UZ·SZ
ME-UAX·SAX
ME-LS
ME-HC
ME-CZ
ME-CA
ME-CX
ME-AX
ME-WX
ME-WA
ME-WL
ME-SWG
ME-WG
ME-PX
ME-HPC·HPD
ME-FC·FD
ME-FAZ
ME-FH
ME-SWN
ME-HWN

Aluminum Electrolytic Type / Radial Lead Type

RoHS compliance

ME-SWN Series

Bi-polar

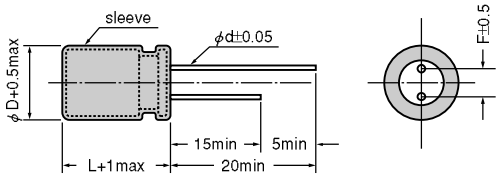
7mm Height

- 85℃, 1,000hrs.
- Solvent proof (within 3 minutes)

■ Specifications

Items	Condition		Specifications					
Rated voltage (V)	–		6.3	10	16	25	35	50
Surge voltage (V)	Room temperature		8.0	13	20	32	44	63
Category temperature range (℃)	–		−40 to +85					
Capacitance tolerance (%)	120Hz/20℃		M : ±20					
Dissipation Factor (tan δ)	120Hz/20℃		0.24	0.22	0.20	0.18	0.16	0.16
Leakage current (LC)	μA/after 1minute (max)		0.03CV + 6					
Endurance	500hrs. x2 (alternately) 85℃,rated voltage applied (With the rated ripple current)	△C/C	Within ±25% of the initial value					
		tan δ	≤ 2 times the initial specified value					
		LC	≤ The initial specified value					

■ Dimensions



(Unit : mm)

φD	4	5	6.3
F	1.5	2.0	2.5
φd	0.45	0.45	0.45

■ Size List, Rated Ripple Current

μF \ V	6.3		10		16		25		35		50	
1.0											4×7	10
2.2									4×7	10	5×7	15
3.3							4×7	16	5×7	17	5×7	18
4.7							4×7	19	5×7	20	6.3×7	23
10			4×7	17	4×7	25	5×7	28	6.3×7	30	6.3×7	34
22	5×7	31	5×7	35	6.3×7	39	6.3×7	52				
33	5×7	39	6.3×7	43	6.3×7	57						
47	6.3×7	47	6.3×7	59	6.3×7	68						

Please refer to page 15 for the ripple current frequency coefficient.

Case size:φDxL(mm)

Rated ripple current mArms(120Hz, 85℃)

■ Model No.

16 ME 33 SWN

- SWN: Series code
- 33: Rated capacitance code
- ME: Type code
- 16: Rated voltage

Aluminum Electrolytic Type / Radial Lead Type **RoHS compliance**

ME-HWN Series

Bi-polar

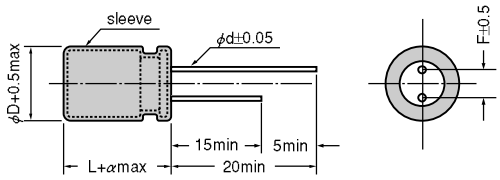
Standard

- 85℃, 2,000hrs.
- Solvent proof (within 5 minutes)

■ Specifications

Items	Condition		Specifications						
Rated voltage (V)	–		6.3	10	16	25	35	50	100
Surge voltage (V)	Room temperature		8.0	13	20	32	44	63	125
Category temperature range (℃)	–		−40 to +85						
Capacitance tolerance (%)	120Hz/20℃		M : ±20						
Dissipation Factor (tanδ)	120Hz/20℃		0.24	0.20	0.18	0.16	0.14	0.13	0.10
			When rated capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase.						
Leakage current (LC)	μA/after 1minute (max)		0.03CV + 6						
Impedance ratio at low temperature	Based the value at 120Hz, +20℃	−25℃ Z/Z20℃	4	3	3	2	2	2	2
		−40℃ Z/Z20℃	10	8	8	6	4	4	4
Endurance	500hrs.×4(alternately) 85℃,rated voltage applied (With the rated ripple current)	△C/C	Within ±25% of the initial value						
		tanδ	≤ 2 times the initial specified value						
		LC	≤ The initial specified value						

■ Dimensions



α: L<20 α=1.5, L≥20 α=2.0

A pressure relief vent is attached to products over φD=6.3

(Unit : mm)

φD	5	6.3	8	10	12.5
F	2.0	2.5	3.5	5.0	5.0
φd	0.5	0.5	0.6	0.6	0.6

■ Size List, Rated Ripple Current

μF \ V	6.3		10		16		25		35		50		100	
2.2											5×11	20	5×11	25
3.3											5×11	28	6.3×11	30
4.7							5×11	25	5×11	30	5×11	38	6.3×11	45
10					5×11	28	5×11	40	5×11	45	6.3×11	50	8×12.5	70
22			5×11	38	5×11	50	5×11	60	6.3×11	75	6.3×11	90	10×16	120
33	5×11	50	5×11	58	5×11	60	6.3×11	80	6.3×11	90	8×11.5	110	10×20	170
47	5×11	60	5×11	70	6.3×11	85	6.3×11	90	8×11.5	125	10×12.5	135	12.5×20	200
100	6.3×11	120	6.3×11	125	8×11.5	165	8×12.5	180	10×12.5	200	10×20	250		
220	8×11.5	210	8×12.5	225	10×12.5	260	10×16	320	10×20	350	12.5×25	410		
330	8×11.5	260	10×12.5	295	10×16	360	10×20	425	12.5×20	440				
470	10×12.5	330	10×16	390	10×20	420	12.5×20	540	12.5×25	585				
1000	10×20	560	12.5×20	620	12.5×25	740								
2200	12.5×25	890												

Please refer to page 15 for the ripple current frequency coefficient.

Rated ripple current mArms(120Hz, 85℃)

Case size:φDxL(mm)

■ Model No.

50 ME 10 HWN
- HWN: Series code
- 10: Rated capacitance code
- ME: Type code
- 50: Rated voltage

CE-BJ
CE-BE
CE-BD
CE-BSS
CE-BS
CE-FE
CE-FD
CE-LD
CE-FSS
CE-FU
CE-FS
CE-FH
CE-GA
CE-AX
CE-KX
CE-LX
CE-LS
CE-LH
CE-LL
CE-PC
CE-PH
CE-NP
CE-FN
ME-SWB
ME-UZ·SZ
ME-UAX·SAX
ME-LS
ME-HC
ME-CZ
ME-CA
ME-CX
ME-AX
ME-WX
ME-WA
ME-WL
ME-SWG
ME-WG
ME-PX
ME-HPC·HPD
ME-FC·FD
ME-FAZ
ME-FH
ME-SWN
ME-HWN

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