



Kondensatoren und  
Bauelemente GmbH Freiberg



## Aluminium-Elektrolytkondensatoren Produktübersicht

## Aluminium-Electrolytic Capacitors Product Summary

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# Aluminium-Electrolytic Capacitors

## Product Summary

### Order details

Order details for FROLYT electrolytic capacitors:

- Series
- Rated capacitance / rated voltage
- Tolerance of rated capacitance
- Dimension (diameter x length)
- Additional requirements, e.g. lead configuration or taping, customer article code with detail declarations

Order example: EKL 220/25, -10 +50%, 10,0x21,0mm, cutted with PAPER

Each detailed specification for FROLYT electrolytic capacitors is indicated with an article number (e.g. E-KL3077).

The complete coding after the internal product key or the article number results in the detail specification for the unique ordering and delivery allocation.

The advantage version is supplied in accordance with data sheet every time if the customer ordered with standard specification without express detail declarations/agreements.

For automatic subsequent treatment electrolytic capacitors can be packed on reels or ammo in boxes. For special application components can be developed and produced electrolytic capacitors with individual requirements. Special agreements are available on request.

### Datasheets

For further specification see FROLYT data sheets and application notes in the DIN technical report 76 "Guide for the application of aluminium electrolytic capacitors"

German version CENELEC Report 040-001: 1998-07 (ISBN 3-410-14471-4, 1999).

→ [www.frolyt.de](http://www.frolyt.de)

### Supply and handling

The quality-receiving and prescribed feed position of packing units for taped capacitors is marked by the print "oben/top". Mechanical stress for leads during the subsequent treatment must be avoided. Make sure the capacitors do not come in mechanical stress.

Aluminium electrolytic capacitors with liquid electrolytes can contain chemicals, which can work with false handling injurious to health. Endangerment exists however only with opened aluminium case!

### RoHS conformity, environmental aspect, disposal

FROLYT produces lead-free electrolytic capacitors with a separate article number and additional identification on the packing in conformity with the RoHS. Materials are explained in Umbrella specifications under

→ [www.frolyt.de](http://www.frolyt.de).

For users with exceptional approval, furthermore previous articles are produced.

Electrolytic capacitors manufactured by FROLYT are free of the substances mentioned in the RoHS, e.g. mercury, chromium(VI), polybrominated biphenyls (PBB), polybrominated diphenyl ethers (PBDE) and cadmium. Aluminium electrolytic capacitors can be disposed after the wastes key no 16 02 16.

### Marketing and sale

You find distributors and sales representatives as well as interlocutors of the company FROLYT on the Internet by → [www.frolyt.de](http://www.frolyt.de).

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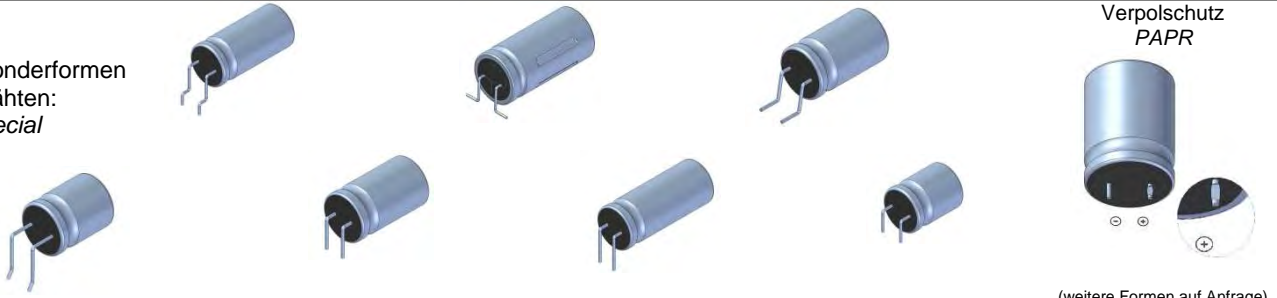
# Radiale Elkos

# Spezialtypen, gepolt, isoliert, schaltfest

## Radial Lead Type

## Special Types, Polarized, Insulated, Pulse-Proof

Beispiele für Sonderformen an Anschlußdrähten:  
samples for special pin forms:



(weitere Formen auf Anfrage)  
(other forms on request)

	ERX							ERY							EKLM *								
<b>Anwendung Besonderheiten</b> <b>Applications, Features</b>	erhöhte Anforderungen, Langlebensdauer <i>long life grade</i>							miniaturisiert, niedriger ESR/Z <i>miniaturized, low ESR/Z</i>							gr. Temp. Bereich, miniaturisiert <i>high temperature, miniaturized</i>								
<b>Temperaturbereich</b> <b>Temperature Range</b>	- 55 ... + 105°C							- 55 ... + 105°C							- 55 ... + 125°C  135°C auf Anfrage / <i>on request</i>								
<b>Brauchbarkeitsdauer</b> <b>Useful Life</b>	min 3 000 h / 105°C 250 000 h / 40°C für D=8,7 mm							min 2 500 h / 105°C 200 000 h / 40°C für D ≤ 8,7 mm							min 1 500 h / 125°C								
<b>Spezifikation</b> <b>Specification</b>	DIN EN 60384-1, DIN EN 60384-4 ohne Gütebestätigung / <i>without quality assesment</i>																						
<b>Kapazitätstoleranz</b> <b>Capacitance Tolerance</b>	± 20 %							± 20 %							± 20 %								
abweichende Kapazitätstoleranzen sind auf Anfrage lieferbar / <i>other capacitance tolerances are available on request</i>																							
<b>Kapazität / Capacitance</b>	<b>Nennspannung / Rated Voltage</b>							<b>Nennspannung / Rated Voltage</b>							<b>Nennspannung / Rated Voltage</b>								
<b>C (µF)</b>	<b>10</b>	<b>16</b>	<b>25</b>	<b>35</b>	<b>40</b>	<b>50</b>	<b>63</b>	<b>10</b>	<b>16</b>	<b>25</b>	<b>35</b>	<b>50</b>	<b>63</b>	<b>100</b>	<b>10</b>	<b>16</b>	<b>25</b>	<b>35</b>	<b>50</b>	<b>63</b>			
<b>0,47</b>																							
<b>1,0</b>								<b>Abmessungen / Size: D x L (mm)</b>															
<b>2,2</b>								<b>1. Stelle = D</b>		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>F</b>	<b>J</b>	<b>H</b>							
<b>3,3</b>										5,5	6,8	8,7	10,0	12,5	16,5	18,0							
<b>4,7</b>								<b>2. Stelle = L</b>		<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>	<b>J</b>	<b>L</b>	<b>R</b>				
<b>6,8</b>										12,5	12,7	16,5	21,0	22,0	25,0	26,0	30,0	36,5	12,0				
<b>10</b>							CC	CC													BB	BB	
<b>15</b>						CC	CC	CC								CC					BB	CC	
<b>22</b>				CC	CC	CC	CC								CC	CC					BB	CC	
<b>33</b>			CC	CC	CC	CC									CC	DC					BB	DC	
<b>47</b>			CC	CC	CC	CC	DC							CC	CC	DD			BB	BB	BB	CC	DD
<b>68</b>		CC	CC				DC	DD					CC	CC	CC	DE			BB	BB	CC	CC	DE
<b>100</b>		CC	CC	DC	DC		DD	DE			CC	CC	CC	DC	FE			BB	BB	CC	CC	DC	FE
<b>150</b>		CC			DD		DE			CC	CC	CC	DC	DD	FG			CC	CC	CC	DC	DD	FE
<b>220</b>		CC	DC	DD	DE		FE	FG	CC	CC	CC	DC	DD	DE	JH			CC	CC	DC	DD	DE	FG
<b>330</b>		DC	DD	DE			FJ	JH	CC	CC	DC	DD	DE	FE	JH			DC	DC	DD	DE	FE	JH
<b>470</b>		DD	DE	FE	FG		JH	JJ	CC	DC	DD	DE	FE	FG	JJ			DC	DD	DE	FE	FG	JJ
<b>680</b>		DE	FE	FG	FJ				DC	DD	DE	FE	FG	JH	HJ			DC	DE	FE	FG	JF	JL
<b>1 000</b>		FE	FG	FJ	JH		JJ	JL	DD	DE	FE	FG	JH	JJ	HL			DE	FE	FG	JH	JJ	HL
<b>1 500</b>		FG	FJ	JH					DE	FE	FG	JH	JJ	HJ				FE	FG	JH	JJ	HJ	
<b>2 200</b>		FJ	JH	JJ	JL				FE	FG	JH	JJ	JL	HL				FG	JH	JJ	JL	HL	
<b>3 300</b>		JH	JJ						FG	JH	JJ	JL	HL					JH	JJ	JL	HL		
<b>4 700</b>		JJ	JL						JH	JJ	JL	HL						JJ	JL	HJ			
<b>6 800</b>									JJ	JL	HL							HJ	HL				
<b>10 000</b>									JL	HJ								HL					
<b>15 000</b>									HL														

\* EKL laut Datenblatt 06/2000 weiterhin verfügbar,  
→ [www.frolyt.de](http://www.frolyt.de) Nicht für Neuentwicklung!

# Radiale Elkos

# Spezialtypen, gepolt, isoliert, schaltfest

## Radial Lead Type

## Special Types, Polarized, Insulated, Pulse-Proof

Lieferformen

Delivery Forms

Kundenspezifische Forderungen und weitere Typen auf Anfrage

Customized products and other types on request

Mäandergurt  
Ammo



Rollengurt  
Reel



Trayverpackung  
Sonderkonfektionierung  
Tray  
Special packing



Blistergurt für  
Pseudo-SMD  
Pseudo-SMD  
in blister



Baureihen	ERF								EKR							ERS							
<b>Anwendung Besonderheiten</b> Applications, Features	miniaturisiert, niedrige Impedanz (Z) miniaturized, low impedance								niedriges Z, für SNT-Einsatz low impedance, for SMPS							Oberflächenmontage, SMD-Elko surface mounting, SMD							
<b>Temperaturbereich</b> Temperature Range	- 55 ... + 105°C								- 40 ... + 105°C							- 55 ... + 105°C							
<b>Brauchbarkeitsdauer</b> Useful Life	min 2 500 h / 105°C 200 000 h / 40°C für D ≤8,7 mm								min 1 000 h / 105°C min 100 000 h / 40°C D=8,7mm							min 3 000 h / 105°C							
<b>Spezifikation</b> Specification	DIN EN 60384-1, DIN EN 60384-4								DIN EN 60384-1, DIN EN 60384-4							DIN EN 60384-1, DIN EN 60384-18 DIN EN 60384-18-2							
<b>Kapazitätstoleranz</b> Capacitance Tolerance	± 20 % abweichende Kapazitätstoleranzen sind auf Anfrage lieferbar / other capacitance tolerances are available on request								- 10 ... + 50 %							± 20 %							
<b>Kapazität / Capacitance</b> C (µF)	<b>Nennspannung / Rated Voltage</b>								<b>Nennspannung / Rated Voltage</b>							<b>Nennspannung / Rated Voltage</b>							
	6,3	10	16	25	35	50	63	100	10	16	25	40	63	100	10	16	25	35	50	63	100		
0,47						AR	AR	AR															
1,0						AR	AR	AR															
2,2						AR	AR	AR															
3,3						AR	AR	AR															
4,7				AR	AR	AR	AR	AR															
6,8				AR	AR	AR	AR	BB															
10			AR	AR	AR	AR	AR	BB					CC	CC							PR	PR	
15			AR	AR	AR	AR	AR	BB					CC	CC							PR	PR	
22		AR	AR	AR	AR	AR	BB	CC				CC	DC	DC							PR	PR	
33		AR	AR	AR	AR	BB	BB	DC				CC	DC	DD							PR	RR	
47		AR	AR	AR	BB	BB	CC	DD			CC	DC	DD	DE							PR	PR	RR
68		AR	AR	AR	BB	BB	CC	DE			CC	CC	DC	DE	FE						PR	RR	
100	AR	AR	BB	BB	CC	CC	DC	FE	CC	DC	DC	DD	FE	FG	PR	PR	PR	PR	PR	RR	RR		
150	AR	AR	BB	BB	CC	DC	DD	FG	CC	DC	DD	DE	FE	FJ	PR	PR	PR	PR	RR	RR			
220	BB	BB	CC	CC	DC	DD	DE	JH	DC	DD	DE	FE	FJ	JH	PR	PR	PR	RR	RR				
330	CC	CC	CC	DC	DD	DE	FE	JH	DD	DE	DE	FE	JH		PR	RR	RR	RR					
470	CC	CC	DC	DD	DE	FE	FG	JJ	DE	FE	FE	FJ	JJ		PR	RR	RR						
680	DC	DE	DD	DE	FE	JF	JH	HJ	DE	FE	FG	JH											
1 000	DD	DD	DE	FE	FG	JH	JJ	HL	FE	FJ	JH	JJ											
1 500	DE	DE	FG	JH	JH	JJ	HJ		FJ	JH	JJ												
2 200	FE	FE	FG	JH	JJ	JL	HL		JH	JJ	JL												
3 300	FG	FG	JH	JJ	JL	HL																	
4 700	JF	JH	JJ	JL	HL																		
6 800	JH	JJ	JL	HL																			
10 000	JL	JL	HJ																				
15 000	HJ	HL																					
															<b>Abmessungen/Size: A/B x L (mm)</b>								
															<b>1. Stelle=A/B</b>			<b>2. Stelle=L</b>					
															<b>P</b>	<b>8,9</b>	<b>R</b>	<b>12,0</b>					
															<b>R</b>	<b>10,2</b>							



