

Surface Mount Type Tantalum Solid Electrolytic Capacitors

Japan

Series: **TEH**

Type: **T**

Surface mount type	High reliability
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■ Features

- High moisture resistance at +60 °C, 90 to 95 % R.H
- Solder-heat resistance at +260 °C for 10 seconds
- 100 temperature cycles

■ Recommended Applications

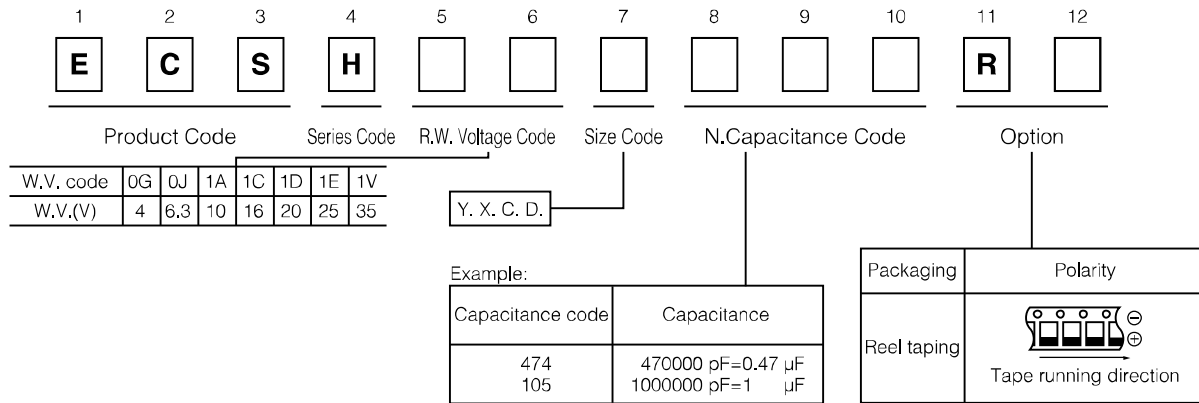
- Automotive applications, industrial equipment, Hybrid IC

■ Specifications

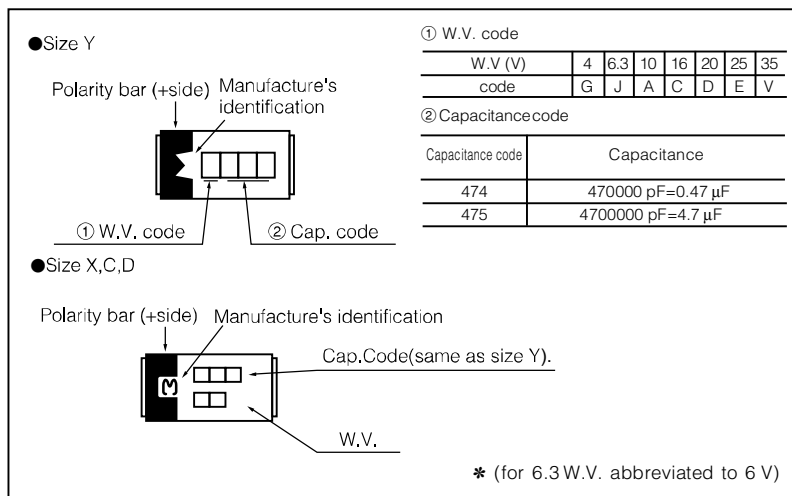
Operating Temp. Range	-55 to +125 °C												
Rated W.V. Range	4 to 35 V.DC												
Nominal Cap. Range	0.1 to 100 μF												
Capacitance Tolerance	±20 % (120 Hz/+20 °C)												
DC Leakage Current	I ≤ 0.01 CV or 0.5 (μA) after 2 minutes application of rated working voltage at +20 °C (Whichever, greater)												
Dissipation Factor	≤ 3.3 μF 0.04 max. 4.7 to 68 μF 0.06 max. (120 Hz/+20 °C) 100 μF 0.08 max.												
Impedance	Cap. (μF)	0.1 to 0.22	0.33 to 0.68	1.0 to 6.8	10 to 33	47 to 100	(100 kHz/ Z (Ω) max. +20 °C)						
		60	15	8	3	1							
Resistance to Soldering Heat	The capacitor shall withstand dipping into solder for 10±1 seconds at +260±5 °C												
Moisture Resistance	After 1000 hours exposure at +60 °C and 90 to 95 % R.H. without load, the capacitor shall meet the following limits. <table border="1" style="width: 100%; margin-top: 10px;"> <tr> <td>Capacitance change</td> <td>±10 % of initial measured value</td> </tr> <tr> <td>D.F.</td> <td>≤ Initial specified value</td> </tr> <tr> <td>DC leakage current</td> <td>≤ 200 % of initial specified value</td> </tr> </table>							Capacitance change	±10 % of initial measured value	D.F.	≤ Initial specified value	DC leakage current	≤ 200 % of initial specified value
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D.F.	≤ Initial specified value												
DC leakage current	≤ 200 % of initial specified value												
Endurance	After 2000 hours application of rated DC working voltage at +85 °C or derated voltage at +125 °C, the capacitor shall meet the following limits. <table border="1" style="width: 100%; margin-top: 10px;"> <tr> <td>Capacitance change</td> <td>±10 % of initial measured value</td> </tr> <tr> <td>D.F.</td> <td>≤ Initial specified value</td> </tr> <tr> <td>DC leakage current</td> <td>≤ 125 % of initial specified value</td> </tr> </table>							Capacitance change	±10 % of initial measured value	D.F.	≤ Initial specified value	DC leakage current	≤ 125 % of initial specified value
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D.F.	≤ Initial specified value												
DC leakage current	≤ 125 % of initial specified value												
Temperature Cycle	After 100 cycles at -55 °C/+125 °C, the capacitor shall meet the following limits. <table border="1" style="width: 100%; margin-top: 10px;"> <tr> <td>Capacitance change</td> <td>±5 % of initial measured value</td> </tr> <tr> <td>D.F.</td> <td>≤ Initial specified value</td> </tr> <tr> <td>DC leakage current</td> <td>≤ 125 % of initial specified value</td> </tr> </table>							Capacitance change	±5 % of initial measured value	D.F.	≤ Initial specified value	DC leakage current	≤ 125 % of initial specified value
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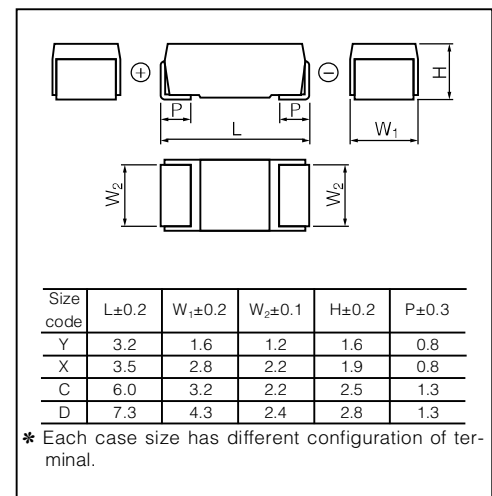
Explanation of Part Numbers



Marking



Dimensions in mm (not to scale)



Case size

Cap.(μ F)	W.V. (V.DC)		4 (0G)		6.3 (0J)		10 (1A)		16 (1C)		20 (1D)		25 (1E)		35 (1V)	
	Standard	Miniature	Standard	Miniature	Standard	Miniature	Standard	Miniature	Standard	Miniature	Standard	Miniature	Standard	Miniature	Standard	Miniature
0.10 (104)																Y
0.15 (154)																Y
0.22 (224)																Y
0.33 (334)																Y
0.47 (474)																X Y
0.68 (684)									Y		Y				X	Y
1.0 (105)									Y					Y	X	
1.5 (155)									Y		Y	X			C	X
2.2 (225)							Y		X	Y	X			X	C	X
3.3 (335)					Y			Y	X	Y		X		C	X	D C
4.7 (475)	Y				Y		X	Y	X		C	X		C	D	
6.8 (685)		Y	X	Y			X		C	X	C				D	
10 (106)	X	Y		X			C	X	C			C	D			D
15 (156)		X	C	X			C			C	D			D		
22 (226)		X	C				C				D					
33 (336)	C			C			D				D					
47 (476)		C					D									
68 (686)	D		D													
100 (107)	D															

- Note: 1. () shows W.V. and capacitance code.
 2. When selecting W.V., see the page 230.
 3. We would like to recommend current sizes in above table for new design, but conventional case sizes is available on request.
 4. Other rating upon request (voltage, capacitance, tolerance, size)

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■ Standard Products

W.V. (V)	Cap. (±20%) (μF)	Case Size		Specification		Part No.	Min. Packaging Qty
		LxWxH (mm)	Size Code	D.F.	L.C (μA)		Taping (pcs)
4	4.7	3.2x1.6x1.6	Y	0.06	0.5	ECSH0GY475R	2000
	6.8	3.2x1.6x1.6	Y	0.06	0.5	ECSH0GY685R	2000
	10	3.2x1.6x1.6	Y	0.06	0.5	ECSH0GY106R	2000
		3.5x2.8x1.9	X	0.06	0.5	ECSH0GX106R	2000
	15	3.5x2.8x1.9	X	0.06	0.6	ECSH0GX156R	2000
	22	3.5x2.8x1.9	X	0.06	0.9	ECSH0GX226R	2000
	33	6.0x3.2x2.5	C	0.06	1.4	ECSH0GC336R	750
	47	6.0x3.2x2.5	C	0.06	1.9	ECSH0GC476R	750
	68	7.3x4.3x2.8	D	0.06	2.8	ECSH0GD686R	750
100	7.3x4.3x2.8	D	0.08	4.0	ECSH0GD107R	750	
6.3	3.3	3.2x1.6x1.6	Y	0.04	0.5	ECSH0JY335R	2000
	4.7	3.2x1.6x1.6	Y	0.06	0.5	ECSH0JY475R	2000
	6.8	3.2x1.6x1.6	Y	0.06	0.5	ECSH0JY685R	2000
		3.5x2.8x1.9	X	0.06	0.5	ECSH0JX685R	2000
	10	3.5x2.8x1.9	X	0.06	0.7	ECSH0JX106R	2000
	15	3.5x2.8x1.9	X	0.06	1.0	ECSH0JX156R	2000
		6.0x3.2x2.5	C	0.06	1.0	ECSH0JC156R	750
	22	6.0x3.2x2.5	C	0.06	1.4	ECSH0JC226R	750
	33	6.0x3.2x2.5	C	0.06	2.1	ECSH0JC336R	750
47	7.3x4.3x2.8	D	0.06	3.0	ECSH0JD476R	750	
68	7.3x4.3x2.8	D	0.06	4.3	ECSH0JD686R	750	
10	2.2	3.2x1.6x1.6	Y	0.04	0.5	ECSH1AY225R	2000
	3.3	3.2x1.6x1.6	Y	0.04	0.5	ECSH1AY335R	2000
	4.7	3.2x1.6x1.6	Y	0.06	0.5	ECSH1AY475R	2000
		3.5x2.8x1.9	X	0.06	0.5	ECSH1AX475R	2000
	6.8	3.5x2.8x1.9	X	0.06	0.7	ECSH1AX685R	2000
	10	3.5x2.8x1.9	X	0.06	1.0	ECSH1AX106R	2000
		6.0x3.2x2.5	C	0.06	1.0	ECSH1AC106R	750
	15	6.0x3.2x2.5	C	0.06	1.5	ECSH1AC156R	750
	22	6.0x3.2x2.5	C	0.06	2.2	ECSH1AC226R	750
33	7.3x4.3x2.8	D	0.06	3.3	ECSH1AD336R	750	
47	7.3x4.3x2.8	D	0.06	4.7	ECSH1AD476R	750	
16	0.68	3.2x1.6x1.6	Y	0.04	0.5	ECSH1CY684R	2000
	1	3.2x1.6x1.6	Y	0.04	0.5	ECSH1CY105R	2000
	1.5	3.2x1.6x1.6	Y	0.04	0.5	ECSH1CY155R	2000
	2.2	3.2x1.6x1.6	Y	0.04	0.5	ECSH1CY225R	2000
		3.5x2.8x1.9	X	0.04	0.5	ECSH1CX225R	2000
	3.3	3.2x1.6x1.6	Y	0.04	0.6	ECSH1CY335R	2000
		3.5x2.8x1.9	X	0.04	0.6	ECSH1CX335R	2000
	4.7	3.5x2.8x1.9	X	0.06	0.8	ECSH1CX475R	2000
	6.8	3.5x2.8x1.9	X	0.06	1.1	ECSH1CX685R	2000
6.0x3.2x2.5		C	0.06	1.1	ECSH1CC685R	750	

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■ Standard Products

W.V. (V)	Cap. (±20%) (μF)	Case Size		Specification		Part No.	Min. Packaging Qty
		LxWxH (mm)	Size Code	D.F.	L.C (μA)		Taping (pcs)
16	10	6.0x3.2x2.5	C	0.06	1.6	ECSH1CC106R	750
	15	6.0x3.2x2.5	C	0.06	2.4	ECSH1CC156R	750
	22	7.3x4.3x2.8	D	0.06	3.6	ECSH1CD226R	750
	33	7.3x4.3x2.8	D	0.06	5.3	ECSH1CD336R	750
20	0.68	3.2x1.6x1.6	Y	0.04	0.5	ECSH1DY684R	2000
	1.5	3.2x1.6x1.6	Y	0.04	0.5	ECSH1DY155R	2000
	2.2	3.5x2.8x1.9	X	0.04	0.5	ECSH1DX225R	2000
	3.3	3.5x2.8x1.9	X	0.04	0.7	ECSH1DX335R	2000
	4.7	3.5x2.8x1.9	X	0.06	1.0	ECSH1DX475R	2000
		6.0x3.2x2.5	C	0.06	1.0	ECSH1DC475R	750
	6.8	6.0x3.2x2.5	C	0.06	1.4	ECSH1DC685R	750
	10	6.0x3.2x2.5	C	0.06	2.0	ECSH1DC106R	750
	15	7.3x4.3x2.8	D	0.06	3.0	ECSH1DD156R	750
22	7.3x4.3x2.8	D	0.06	4.4	ECSH1DD226R	750	
25	0.47	3.2x1.6x1.6	Y	0.04	0.5	ECSH1EY474R	2000
	1	3.2x1.6x1.6	Y	0.04	0.5	ECSH1EY105R	2000
	1.5	3.5x2.8x1.9	X	0.04	0.5	ECSH1EX155R	2000
	2.2	3.5x2.8x1.9	X	0.04	0.6	ECSH1EX225R	2000
	3.3	3.5x2.8x1.9	X	0.04	0.9	ECSH1EX335R	2000
		6.0x3.2x2.5	C	0.04	0.9	ECSH1EC335R	750
	4.7	6.0x3.2x2.5	C	0.06	1.2	ECSH1EC475R	750
	10	7.3x4.3x2.8	D	0.06	2.5	ECSH1ED106R	750
15	7.3x4.3x2.8	D	0.06	3.8	ECSH1ED156R	750	
35	0.1	3.2x1.6x1.6	Y	0.04	0.5	ECSH1VY104R	2000
	0.15	3.2x1.6x1.6	Y	0.04	0.5	ECSH1VY154R	2000
	0.22	3.2x1.6x1.6	Y	0.04	0.5	ECSH1VY224R	2000
	0.33	3.2x1.6x1.6	Y	0.04	0.5	ECSH1VY334R	2000
	0.47	3.2x1.6x1.6	Y	0.04	0.5	ECSH1VY474R	2000
		3.5x2.8x1.9	X	0.04	0.5	ECSH1VX474R	2000
	0.68	3.2x1.6x1.6	Y	0.04	0.5	ECSH1VY684R	2000
		3.5x2.8x1.9	X	0.04	0.5	ECSH1VX684R	2000
	1	3.5x2.8x1.9	X	0.04	0.5	ECSH1VX105R	2000
		3.5x2.8x1.9	X	0.04	0.6	ECSH1VX155R	2000
	1.5	6.0x3.2x2.5	C	0.04	0.6	ECSH1VC155R	750
		3.5x2.8x1.9	X	0.04	0.8	ECSH1VX225R	2000
	2.2	6.0x3.2x2.5	C	0.04	0.8	ECSH1VC225R	750
		3.5x2.8x1.9	X	0.04	1.2	ECSH1VC335R	750
	3.3	6.0x3.2x2.5	C	0.04	1.2	ECSH1VD335R	750
		7.3x4.3x2.8	D	0.04	1.2	ECSH1VD335R	750
4.7	7.3x4.3x2.8	D	0.06	1.7	ECSH1VD475R	750	
6.8	7.3x4.3x2.8	D	0.06	2.4	ECSH1VD685R	750	
10	7.3x4.3x2.8	D	0.06	3.5	ECSH1VD106R	750	

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