

Stacked Metallized PEN Film Chip Capacitor

Type: **ECWU(C)**

Stacked metallized PEN film as dielectric with simple mold-less construction

■Features

- Small in size
- For reflow soldering
- RoHS directive compliant

■Recommended Applications

- General purpose (Coupling, By-pass)

■Explanation of Part Numbers

1	2	3	4	5	6	7	8	9	10	11	12
E	C	W	U							C	
Product code		Dielectric & construction		Rated voltage		Nominal capacitance			Cap. Tol.	Suffix	Suffix
				1C 16 VDC					J ±5 %		Tape width
				1H 50 VDC					K ±10 %		9 12 mm
				1 100 VDC							V 16 mm
				2 250 VDC							

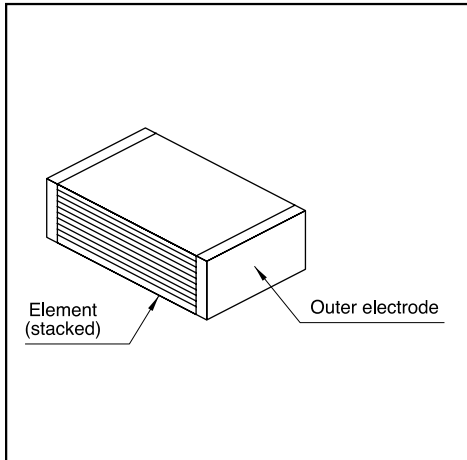
■Specifications

Category temp.range (Including temperature-rise on unit surface)	16 VDC, 50 VDC : -55 °C to +105 °C	
	100 VDC, 250 VDC : -55 °C to +125 °C	
Rated voltage	16 VDC, 50 VDC, 100 VDC, 250 VDC (250 VDC : Derating of rated voltage by 1.25 %/°C more than 85 °C)	
Capacitance range	16 VDC	0.12 μF to 0.47 μF (E12)
	50 VDC	0.056 μF to 0.22 μF (E12)
	100 VDC	0.012 μF to 1.0 μF (E12)
	250 VDC	0.0010 μF to 0.12 μF (E12)
Capacitance tolerance	16 VDC, 50 VDC	±5 % (J)
	100 VDC, 250 VDC	±10 % (K) (100 VDC, C ≤ 0.15 μF ±5 % (J), ±10 % (K))
Withstand voltage	Between terminals 16 VDC, 50 VDC : Rated volt. (VDC) × 175 % 1 s to 5 s 100 VDC, 250 VDC : Rated volt. (VDC) × 150 % 60 s	
Dissipation factor (tan δ)	tan δ ≤ 1.0 % (20 °C, 1 kHz)	
Insulation resistance (IR)	C ≤ 0.33 μF	16 VDC : IR ≥ 3000 MΩ · (20 °C, 10 VDC, 60 s) 50 VDC : IR ≥ 3000 MΩ · (20 °C, 50 VDC, 60 s) 100 VDC, 250 VDC : IR ≥ 3000 MΩ · (20 °C, 100 VDC, 60 s)
	C > 0.33 μF	16 VDC : IR ≥ 1000 MΩ · μF (20 °C, 10 VDC, 60 s) 100 VDC, 250 VDC : IR ≥ 1000 MΩ · μF (20 °C, 100 VDC, 60 s)
Soldering conditions	Reflow soldering : 240 °C max. and 60 s max. at more than 220 °C (Temp. at cap. surface) (Please consult us for Reflow 250 °C max product.)	

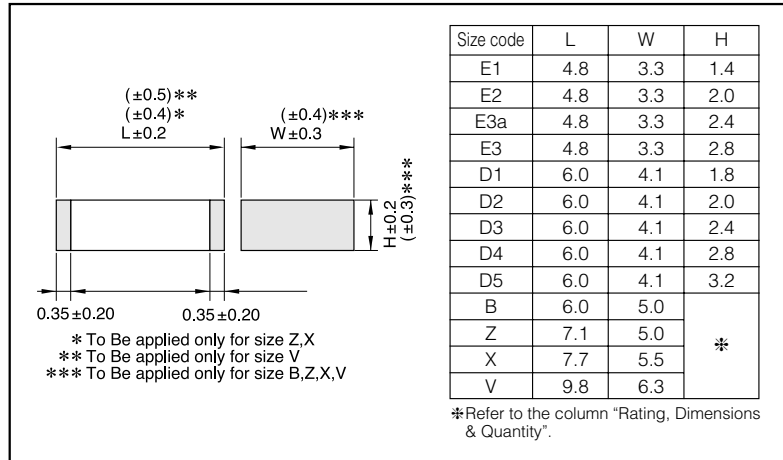
✱ In case of applying voltage in alternating current (50 Hz or 60 Hz sine wave) to a capacitor with DC rated voltage, please refer to the page of "Permissible voltage (R.M.S) in alternating current corresponding to DC rated voltage".

✱ Please consult us for capacitance range between 0.15 μF and 1.0 μF.

■Construction



■Dimensions in mm (not to scale)



■Taping Specification for Automatic Mounting

Refer to the page of taping specifications.

■Rating, Dimensions & Quantity/Reel

●Capacitance tolerance : $\pm 5\%$ (J)

Cap. (μ F)	Rated volt. 16 VDC						Rated volt. 50 VDC						
	Part No	Dimensions (mm)			Size code	Q'ty	Part No	Dimensions (mm)			Size code	Q'ty	
		L	W	H				L	W	H			
0.056	Please use 16 VDC rating of ECHU(X)						ECWU1H563JC9	4.8	3.3	2.0	E2	3000	
0.068							ECWU1H683JC9	4.8	3.3	2.0	E2		
0.082							ECWU1H823JC9	4.8	3.3	2.4	E3a	2000	
0.10							ECWU1H104JC9	4.8	3.3	2.8	E3		
0.12	ECWU1C124JC9	4.8	3.3	1.4	E1	3000	ECWU1H124JC9	6.0	4.1	1.8	D1	3000	
0.15	ECWU1C154JC9	4.8	3.3	2.0	E2		ECWU1H154JC9	6.0	4.1	2.0	D2		
0.18	ECWU1C184JC9	4.8	3.3	2.0	E2	2000	ECWU1H184JC9	6.0	4.1	2.4	D3	2000	
0.22	ECWU1C224JC9	4.8	3.3	2.4	E3a		ECWU1H224JC9	6.0	4.1	2.8	D4		
0.27	ECWU1C274JC9	6.0	4.1	1.8	D1	3000							
0.33	ECWU1C334JC9	6.0	4.1	2.0	D2								
0.39	ECWU1C394JC9	6.0	4.1	2.4	D3	2000							
0.47	ECWU1C474JC9	6.0	4.1	2.8	D4								

Cap. $\leq 0.039 \mu$ F : Please use 50 VDC rating of ECHU(X)
 Cap. $= 0.047 \mu$ F : Please use 50 VDC rating of ECHU(C)

■ Rating, Dimensions & Quantity/Reel

● Capacitance tolerance : $\pm 5\%$ (J), $\pm 10\%$ (K)

Cap. (μ F)	Rated volt. 100 VDC						Rated volt. 250 VDC													
	Part No	Dimensions (mm)			Size code	Q'ty	Part No	Dimensions (mm)			Size code	Q'ty								
		L	W	H				L	W	H										
0.0010	Please use 100 VDC rating ECWU(X)						ECWU2102	C9	4.8	3.3	1.4	E1	3000							
0.0012							ECWU2122	C9	4.8	3.3	1.4	E1								
0.0015							ECWU2152	C9	4.8	3.3	1.4	E1								
0.0018							ECWU2182	C9	4.8	3.3	1.4	E1								
0.0022							ECWU2222	C9	4.8	3.3	1.4	E1								
0.0027							ECWU2272	C9	4.8	3.3	1.4	E1								
0.0033							ECWU2332	C9	4.8	3.3	1.4	E1								
0.0039							ECWU2392	C9	4.8	3.3	1.4	E1								
0.0047							ECWU2472	C9	4.8	3.3	1.4	E1								
0.0056							ECWU2562	C9	4.8	3.3	1.4	E1								
0.0068							ECWU2682	C9	4.8	3.3	1.4	E1								
0.0082							ECWU2822	C9	4.8	3.3	1.4	E1								
0.010							ECWU2103	C9	4.8	3.3	1.4	E1								
0.012							ECWU1123	C9	4.8	3.3	1.4	E1		ECWU2123	C9	4.8	3.3	1.4	E1	2000
0.015							ECWU1153	C9	4.8	3.3	1.4	E1		ECWU2153	C9	4.8	3.3	1.4	E1	
0.018	ECWU1183	C9	4.8	3.3	1.4	E1	ECWU2183	C9	4.8	3.3	2.0	E2								
0.022	ECWU1223	C9	4.8	3.3	1.4	E1	ECWU2223	C9	4.8	3.3	2.0	E2								
0.027	ECWU1273	C9	4.8	3.3	1.4	E1	ECWU2273	C9	4.8	3.3	2.4	E3a	3000							
0.033	ECWU1333	C9	4.8	3.3	1.4	E1	ECWU2333	C9	4.8	3.3	2.8	E3								
0.039	ECWU1393	C9	4.8	3.3	1.4	E1	ECWU2393	C9	6.0	4.1	2.0	D2	2000							
0.047	ECWU1473	C9	4.8	3.3	2.0	E2	ECWU2473	C9	6.0	4.1	2.4	D3								
0.056	ECWU1563	C9	4.8	3.3	2.0	E2	ECWU2563	C9	6.0	4.1	2.8	D4	1500							
0.068	ECWU1683	C9	4.8	3.3	2.4	E3a	ECWU2683	C9	6.0	4.1	3.2	D5								
0.082	ECWU1823	C9	4.8	3.3	2.8	E3	ECWU2823	C9	6.0	5.0	3.2	B	1000							
0.10	ECWU1104	C9	6.0	4.1	1.8	D1	ECWU2104	C9	6.0	5.0	3.8	B								
0.12	ECWU1124	C9	6.0	4.1	2.4	D3	ECWU2124	C9	6.0	5.0	4.5	B								
0.15	ECWU1154	C9	6.0	4.1	2.8	D4	↑Cap. tol. code													
0.18	ECWU1184KC9		7.1	5.0	2.0	Z	↑Cap. tol. code													
0.22	ECWU1224KC9		7.1	5.0	2.4	Z														
0.27	ECWU1274KC9		7.1	5.0	2.9	Z														
0.33	ECWU1334KC9		7.1	5.0	3.5	Z														
0.39	ECWU1394KCV		7.7	5.5	3.4	X														
0.47	ECWU1474KCV		7.7	5.5	4.0	X														
0.56	ECWU1564KCV		9.8	6.3	3.0	V														
0.68	ECWU1684KCV		9.8	6.3	3.6	V														
0.82	ECWU1824KCV		9.8	6.3	4.3	V														
1.0	ECWU1105KCV		9.8	6.3	5.1	V														

■ Recommended for Land Dimensions (mm)

Size code	Land dimensions for reflow soldering		
	A	B	C
E1,E2,E3a,E3	2.6	6.6	3.0
D1,D2,D3,D4,D5	3.8	7.8	3.8
B	3.8	7.8	4.6
Z	4.5	9.0	4.6
X	5.1	9.7	5.0
V	7.2	11.9	5.7