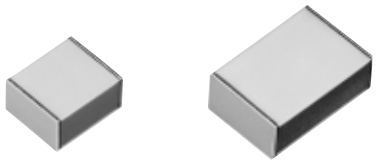
Stacked Metallized PEN Film Chip Capacitor

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
1H	50 VDC
1	100 VDC
2	250 VDC

J	±5 %
K	±10 %

	Tape width
9	12 mm
V	16 mm

■Specifications

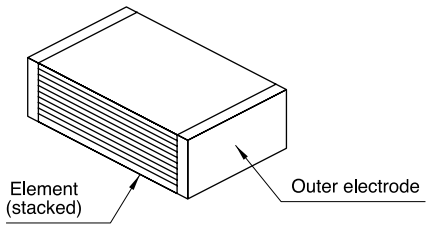
Category temp.range (Including temperature-rise on unit surface)	16 VDC, 50 VDC : -55 ˚C to +105 ˚C	
	100 VDC, 250 VDC : -55 ˚C to +125 ˚C	
Rated voltage	16 VDC, 50 VDC, 100 VDC, 250 VDC (100 VDC, 250 VDC : Derating of rated voltage by 1.25 %/˚C more than 85 ˚C)	
Capacitance range	16 VDC	0.12 μF to 0.47 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	±5 %(J), ±10 %(K) (C≧0.18 μF : ±10 %(K)only)
	250 VDC	±5 %(J), ±10 %(K)
Withstand voltage	Between terminals: Rated volt. (VDC)×150 % 60 s	
Dissipation factor (tanδ)	tanδ≦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 : 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”.

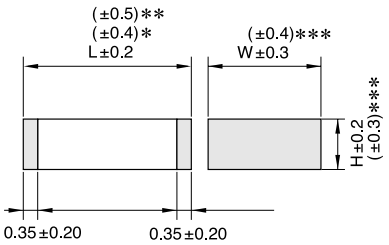
❊ Please consult us for capacitance range between 0.15 μF and 1.0 μF for 250 VDC type.

Design, Specifications are subject to change without notice. Ask factory for technical specifications before purchase and/or use.
Whenever a doubt about safety arises from this product, please inform us immediately for technical consultation without fail.

■Construction



■Dimensions in mm (not to scale)



* To Be applied only for size Z,X
** To Be applied only for size V
*** To Be applied only for size B,Z,X,V

Size code	L	W	H
E1	4.8	3.3	1.4
E2	4.8	3.3	2.0
E3a	4.8	3.3	2.4
E3	4.8	3.3	2.8
D1	6.0	4.1	1.8
D2	6.0	4.1	2.0
D3	6.0	4.1	2.4
D4	6.0	4.1	2.8
D5	6.0	4.1	3.2
B	6.0	5.0	❊
Z	7.1	5.0	
X	7.7	5.5	
V	9.8	6.3	

❊Refer to the column "Rating, Dimensions & Quantity".

■Taping Specification for Automatic Mounting

Refer to the page of taping specifications.

■Rating, Dimensions & Quantity/Reel

●Capacitance tolerance : ±5 %(J)

Cap. (μF)	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		ECWU1H184JC9	6.0	4.1	2.4	D3	2000
0.22	ECWU1C224JC9	4.8	3.3	2.4	E3a	2000	ECWU1H224JC9	6.0	4.1	2.8	D4	
0.27	ECWU1C274JC9	6.0	4.1	1.8	D1	3000	Cap.≦0.047 μF : Please use 50 VDC rating of ECHU(X)					
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							

Design, Specifications are subject to change without notice. Ask factory for technical specifications before purchase and/or use.
Whenever a doubt about safety arises from this product, please inform us immediately for technical consultation without fail.

■ Rating, Dimensions & Quantity/Reel

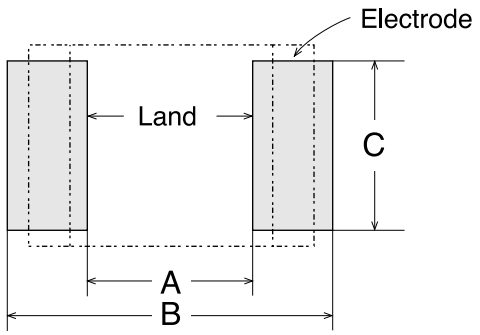
● Capacitance tolerance : ±5 %(J), ±10 %(K)

Cap. (μF)	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	3000	ECWU2123□C9	4.8	3.3	1.4	E1	
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	2000
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	3000
0.047	ECWU1473□C9	4.8	3.3	2.0	E2		ECWU2473□C9	6.0	4.1	2.4	D3	2000
0.056	ECWU1563□C9	4.8	3.3	2.0	E2		ECWU2563□C9	6.0	4.1	2.8	D4	
0.068	ECWU1683□C9	4.8	3.3	2.4	E3a	2000	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	1500
0.10	ECWU1104□C9	6.0	4.1	1.8	D1	3000	ECWU2104□C9	6.0	5.0	3.8	B	
0.12	ECWU1124□C9	6.0	4.1	2.4	D3	2000	ECWU2124□C9	6.0	5.0	4.5	B	
0.15	ECWU1154□C9	6.0	4.1	2.8	D4							
0.18	ECWU1184KC9	7.1	5.0	2.0	Z	1500						
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	1000						
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							

Cap. tol. code

Cap. tol. code

■ Recommened 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

❊ It is not warrantable that you can mount the capacitor without trouble under all the mounting condition when "Recommender for Land dimensions" is adopted.

Design, Specifications are subject to change without notice. Ask factory for technical specifications before purchase and/or use.
Whenever a doubt about safety arises from this product, please inform us immediately for technical consultation without fail.