



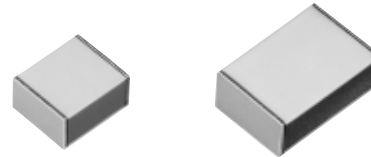
**THE DATASHEET OF  
ECW-U1C224JC9**



### Stacked Metallized PEN Film Chip Capacitor

Type: **ECWU(C)**

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



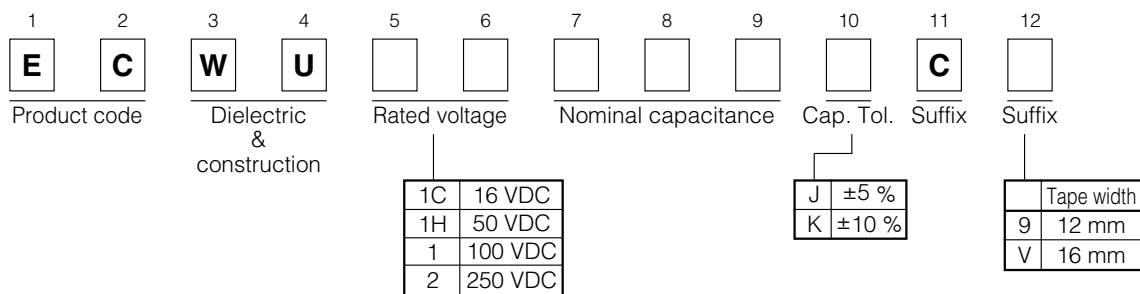
#### ■ Features

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

#### ■ Recommended Applications

- General purpose (Coupling, By-pass)

#### ■ Explanation of Part Numbers



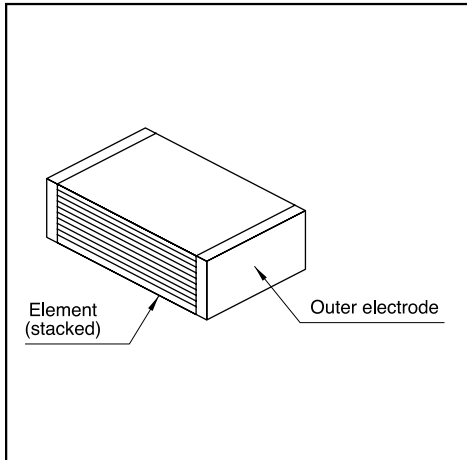
#### ■ Specifications

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.)	

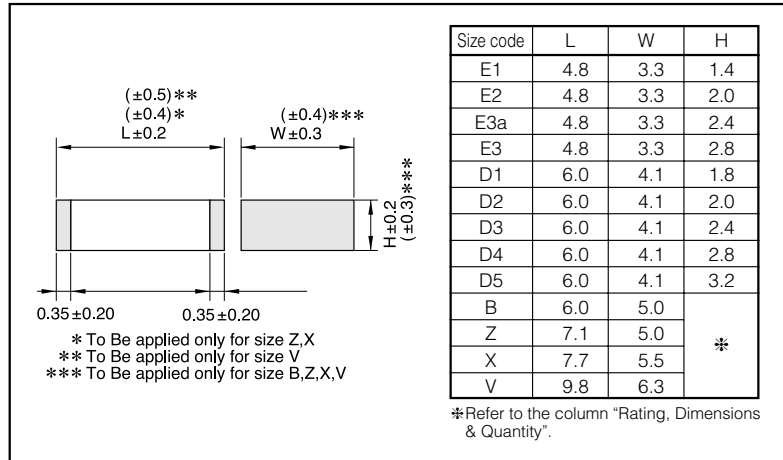
\* In case of applying voltage in alternating current (50 Hz or 60 Hz sine wave) to a capacitor with DC rated voltage, please refer to the page of "Permissible voltage (R.M.S) in alternating current corresponding to DC rated voltage".

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

### ■ 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. ( $\mu$ 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	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	ECWU1H224JC9	6.0	4.1	2.8	D4		
0.27	ECWU1C274JC9	6.0	4.1	1.8	D1	Cap. $\leq 0.047 \mu$ F : 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							
0.47	ECWU1C474JC9	6.0	4.1	2.8	D4							

■ Rating, Dimensions & Quantity/Reel

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

Cap. ( $\mu$ 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		3000
0.015						ECWU1153□C9	4.8	3.3	1.4	E1		
0.018	ECWU1183□C9	4.8	3.3	1.4	E1							
0.022	ECWU1223□C9	4.8	3.3	1.4	E1							
0.027	ECWU1273□C9	4.8	3.3	1.4	E1							
0.033	ECWU1333□C9	4.8	3.3	1.4	E1							
0.039	ECWU1393□C9	4.8	3.3	1.4	E1							
0.047	ECWU1473□C9	4.8	3.3	2.0	E2							
0.056	ECWU1563□C9	4.8	3.3	2.0	E2							
0.068	ECWU1683□C9	4.8	3.3	2.4	E3a							
0.082	ECWU1823□C9	4.8	3.3	2.8	E3							
0.10	ECWU1104□C9	6.0	4.1	1.8	D1	3000						
0.12	ECWU1124□C9	6.0	4.1	2.4	D3	2000						
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	1000						
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							
						ECWU2123□C9	4.8	3.3	1.4	E1	2000	
						ECWU2153□C9	4.8	3.3	1.4	E1		
						ECWU2183□C9	4.8	3.3	2.0	E2		
						ECWU2223□C9	4.8	3.3	2.0	E2		
						ECWU2273□C9	4.8	3.3	2.4	E3a		
						ECWU2333□C9	4.8	3.3	2.8	E3		
						ECWU2393□C9	6.0	4.1	2.0	D2		
						ECWU2473□C9	6.0	4.1	2.4	D3		
						ECWU2563□C9	6.0	4.1	2.8	D4		
						ECWU2683□C9	6.0	4.1	3.2	D5		
						ECWU2823□C9	6.0	5.0	3.2	B		
						ECWU2104□C9	6.0	5.0	3.8	B		
						ECWU2124□C9	6.0	5.0	4.5	B		

↑ Cap. tol. code

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■ 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

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

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