

Stacked Metallized PPS Film Chip Capacitor

Type: **ECHU(X)**

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

■Features

- Small in size (minimum size 1.6 mm × 0.8 mm)
- 85 °C, 85 %RH, W.V. × 1.0 for 500 hours
- For reflow soldering
- RoHS directive compliant

■Recommended Applications

- Time-constant
- Filtering
- Oscillation and resonance

■Explanation of Part Numbers

1	2	3	4	5	6	7	8	9	10	11	12
E	C	H	U							X	

Product code

Dielectric & construction

Rated voltage

1C	16 VDC
1H	50 VDC

Capacitance

Cap. Tol.

G	±2 %
J	±5 %

Suffix

	Tape width
	Reel diameter
5	8 mm size ø180 mm
9	12 mm size ø330 mm

* Tape width 8 mm and diameter ø330 mm reel is prepared.

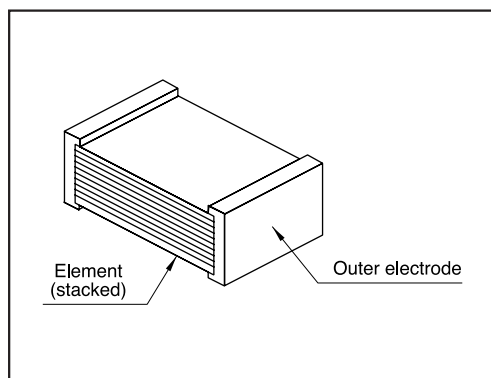
■Specifications

Category temp. range (Including temperature-rise on unit surface)	−55 °C to +125 °C
Rated voltage	16 VDC, 50 VDC (50 VDC: 0.12 µF or more: Derating or rated voltage by 1.25 % / °C at more than 105 °C)
Capacitance range	0.00010 µF to 0.22 µF (E12)
Capacitance tolerance	±2 % (G), ±5 % (J)
Withstand voltage	Between terminals : Rated volt. (VDC) × 150 % 60 s
Dissipation factor (tan δ)	$\tan \delta \leq 0.6 \%$ (20 °C, 1 kHz)
Insulation resistance (IR)	16 VDC : $IR \geq 3000 \text{ M}\Omega$ (20 °C, 10 VDC, 60 s) 50 VDC : $IR \geq 3000 \text{ M}\Omega$ (20 °C, 50 VDC, 60 s)
Soldering conditions	Reflow soldering : 260 °C max. and 95 sec max. at more than 220 °C (Temp. at cap. surface)

* Please consult us for flow soldering

* 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".

■Construction



■Dimensions in mm (not to scale)

	$L \pm 0.2$	$W \pm 0.20$	$H \pm 0.2$	$e \pm 0.30$	g
	$(\pm 0.25) *$	$(\pm 0.15) **$	$(\pm 0.15) **$	$(\pm 0.25) *$	
	$(\pm 0.20) **$			$(\pm 0.20) **$	
	* To be applied only for size code J1 & J2				
	** To be applied only for size code K1				
	*** To be applied only for size code E1, E2, D1, D3, D4				
size code	L	W	H	e	g
K1	1.6	0.8	0.7	0.35	≥ 0.4
J1	2.0	1.25	0.9	0.45	≥ 0.6
J2	2.0	1.25	1.1	0.45	≥ 0.6
H1	3.2	1.6	0.9	0.65	≥ 1.0
H2	3.2	1.6	1.1	0.65	≥ 1.0
H3	3.2	1.6	1.5	0.65	≥ 1.0
G1	3.2	2.5	1.1	0.65	≥ 1.0
G2	3.2	2.5	1.5	0.65	≥ 1.0
G3	3.2	2.5	2.1	0.65	≥ 1.0
E1	4.8	3.3	1.5	0.80	≥ 2.0
E2	4.8	3.3	2.1	0.80	≥ 2.0
D1	6.0	4.1	1.9	0.80	≥ 2.0
D3	6.0	4.1	2.5	0.80	≥ 2.0
D4	6.0	4.1	2.8	0.80	≥ 2.0

■Taping Specification for Automatic Mounting

Refer to the page of taping specifications

■Rating, Dimensions & Quantity/Reel

●Capacitance tolerance : $\pm 2\%$ (G), $\pm 5\%$ (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		
0.00010	ECHU1C101□X5	1.6	0.8	0.7	K1	4000	ECHU1H101□X5	2.0	1.25	0.9	J1	3000
0.00012	ECHU1C121□X5	1.6	0.8	0.7	K1		ECHU1H121□X5	2.0	1.25	0.9	J1	
0.00015	ECHU1C151□X5	1.6	0.8	0.7	K1		ECHU1H151□X5	2.0	1.25	0.9	J1	
0.00018	ECHU1C181□X5	1.6	0.8	0.7	K1		ECHU1H181□X5	2.0	1.25	0.9	J1	
0.00022	ECHU1C221□X5	1.6	0.8	0.7	K1		ECHU1H221□X5	2.0	1.25	0.9	J1	
0.00027	ECHU1C271□X5	1.6	0.8	0.7	K1		ECHU1H271□X5	2.0	1.25	0.9	J1	
0.00033	ECHU1C331□X5	1.6	0.8	0.7	K1		ECHU1H331□X5	2.0	1.25	0.9	J1	
0.00039	ECHU1C391□X5	1.6	0.8	0.7	K1		ECHU1H391□X5	2.0	1.25	0.9	J1	
0.00047	ECHU1C471□X5	1.6	0.8	0.7	K1		ECHU1H471□X5	2.0	1.25	0.9	J1	
0.00056	ECHU1C561□X5	1.6	0.8	0.7	K1		ECHU1H561□X5	2.0	1.25	0.9	J1	
0.00068	ECHU1C681□X5	1.6	0.8	0.7	K1	3000	ECHU1H681□X5	2.0	1.25	0.9	J1	3000
0.00082	ECHU1C821□X5	1.6	0.8	0.7	K1		ECHU1H821□X5	2.0	1.25	0.9	J1	
0.0010	ECHU1C102□X5	1.6	0.8	0.7	K1		ECHU1H102□X5	2.0	1.25	0.9	J1	
0.0012	ECHU1C122□X5	1.6	0.8	0.7	K1		ECHU1H122□X5	2.0	1.25	0.9	J1	
0.0015	ECHU1C152□X5	1.6	0.8	0.7	K1		ECHU1H152□X5	2.0	1.25	0.9	J1	
0.0018	ECHU1C182□X5	1.6	0.8	0.7	K1		ECHU1H182□X5	2.0	1.25	0.9	J1	
0.0022	ECHU1C222□X5	1.6	0.8	0.7	K1		ECHU1H222□X5	2.0	1.25	0.9	J1	
0.0027	ECHU1C272□X5	1.6	0.8	0.7	K1		ECHU1H272□X5	2.0	1.25	0.9	J1	
0.0033	ECHU1C332□X5	2.0	1.25	0.9	J1		ECHU1H332□X5	3.2	1.6	0.9	H1	
0.0039	ECHU1C392□X5	2.0	1.25	0.9	J1		ECHU1H392□X5	3.2	1.6	0.9	H1	
0.0047	ECHU1C472□X5	2.0	1.25	0.9	J1	3000	ECHU1H472□X5	3.2	1.6	0.9	H1	2000
0.0056	ECHU1C562□X5	2.0	1.25	0.9	J1		ECHU1H562□X5	3.2	1.6	0.9	H1	
0.0068	ECHU1C682□X5	2.0	1.25	0.9	J1		ECHU1H682□X5	3.2	1.6	0.9	H1	
0.0082	ECHU1C822□X5	2.0	1.25	1.1	J2		ECHU1H822□X5	3.2	1.6	1.1	H2	
0.010	ECHU1C103□X5	2.0	1.25	1.1	J2		ECHU1H103□X5	3.2	1.6	1.1	H2	
0.012	ECHU1C123□X5	3.2	1.6	0.9	H1		ECHU1H123□X5	3.2	2.5	1.1	G1	
0.015	ECHU1C153□X5	3.2	1.6	0.9	H1		ECHU1H153□X5	3.2	2.5	1.1	G1	
0.018	ECHU1C183□X5	3.2	1.6	0.9	H1		ECHU1H183□X5	3.2	2.5	1.5	G2	
0.022	ECHU1C223□X5	3.2	1.6	0.9	H1		ECHU1H223□X5	3.2	2.5	1.5	G2	
0.027	ECHU1C273□X5	3.2	1.6	1.1	H2		ECHU1H273□X5	3.2	2.5	1.5	G2	
0.033	ECHU1C333□X5	3.2	1.6	1.1	H2	2000	ECHU1H333□X5	3.2	2.5	2.1	G3	3000
0.039	ECHU1C393□X5	3.2	1.6	1.5	H3		ECHU1H393□X5	3.2	2.5	2.1	G3	
0.047	ECHU1C473□X5	3.2	1.6	1.5	H3		ECHU1H473□X9	4.8	3.3	1.5	E1	
0.056	ECHU1C563□X5	3.2	2.5	1.5	G2		ECHU1H563□X9	4.8	3.3	1.5	E1	
0.068	ECHU1C683□X5	3.2	2.5	1.5	G2		ECHU1H683□X9	4.8	3.3	1.5	E1	
0.082	ECHU1C823□X5	3.2	2.5	2.1	G3		ECHU1H823□X9	4.8	3.3	2.1	E2	
0.10	ECHU1C104□X5	3.2	2.5	2.1	G3		ECHU1H104□X9	4.8	3.3	2.1	E2	
0.12							ECHU1H124□X9	6.0	4.1	1.9	D1	
0.15							ECHU1H154□X9	6.0	4.1	1.9	D1	
0.18							ECHU1H184□X9	6.0	4.1	2.5	D3	
0.22							ECHU1H224□X9	6.0	4.1	2.8	D4	2000

Cap. tol. code

■Recommended for Land Dimensions (mm)

Size Code	Land dimensions		
	Reflow soldering		
	A	B	C
K1	0.6	2.0	0.7
J1,J2	0.8	2.4	1.1
H1,H2,H3	1.8	3.6	1.4
G1,G2,G3	1.8	3.6	2.3
E1,E2	3.0	5.6	3.0
D1,D3,D4	4.0	7.0	3.8

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