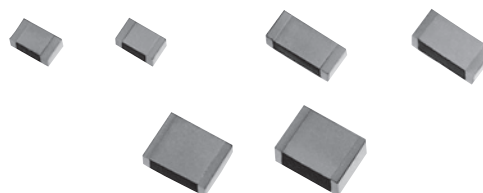


Stacked Metallized PPS Film Chip Capacitor

Series : **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
- Audio circuit

Explanation of part number

1	2	3	4	5	6	7	8	9	10	11	12
E	C	H	U							X	
Product code		Dielectric & construction		Rated voltage		Capacitance			Cap. Tol.	Suffix	Suffix
				1C	16 V.DC		G	±2 %	Code	Tape width	Reel diameter
				1H	50 V.DC		J	±5 %	5	8 mm	φ180 mm
									9	12 mm	φ330 mm

*Tape width 8 mm and diameter φ330 mm reel is prepared

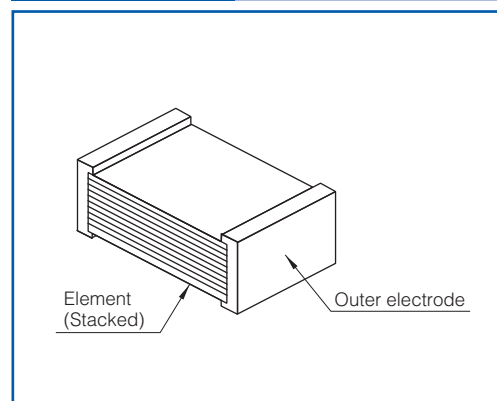
Specifications

Category temp. range (Including temperature-rise on unit surface)	- 55 °C to +125 °C	
Rated voltage	16 V.DC, 50 V.DC (50 V.DC : 0.12 µF or more : Derating or rated voltage by 1.25 % / °C at more than 105 °C)	
Capacitance range	16 V.DC	0.00010 µF to 0.10 µF (E12)
	50 V.DC	0.00010 µF to 0.22 µF (E12)
Capacitance tolerance	±2 % (G), ±5 % (J)	
Dissipation factor (tan δ)	tan δ ≤ 0.6 % (20 °C, 1 kHz)	
Withstand voltage	Between terminals : Rated volt. (V.DC) × 150 %, 60 s	
Insulation resistance (IR)	16 V.DC : IR ≥ 3000 MΩ (20 °C, 10 V.DC, 60 s)	
	50 V.DC : IR ≥ 3000 MΩ (20 °C, 50 V.DC, 60 s)	
Soldering conditions	Reflow soldering : 260 °C max. and 95 sec max. at more than 220 °C (Temp. at capacitor 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

Unit : mm						
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	

$L \pm 0.2$
 $(\pm 0.3) ***$
 $(\pm 0.15) **$
 $W \pm 0.2$
 $H \pm 0.2$
 $(\pm 0.15) **$
 $e \pm 0.30$
 $(\pm 0.25) *$
 $(\pm 0.20) **$
 g
 $e \pm 0.30$
 $(\pm 0.25) *$
 $(\pm 0.20) **$

* 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

Taping specification for automatic mounting

Refer to the page of taping specifications

Rating · Dimensions · Quantity

- Capacitance tolerance : $\pm 2\%$ (G), $\pm 5\%$ (J)

Capacitance (μ F)	Rated voltage 16 V.DC						Rated voltage 50 V.DC					
	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		ECHU1H681□X5	2.0	1.25	0.9	J1	
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	3000	ECHU1H182□X5	2.0	1.25	0.9	J1	2000
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		ECHU1H472□X5	3.2	1.6	0.9	H1	
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	2000	ECHU1H223□X5	3.2	2.5	1.5	G2	3000
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		ECHU1H333□X5	3.2	2.5	2.1	G3	
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	

* □ : Capacitance tolerance code

Recommended for land dimensions

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.