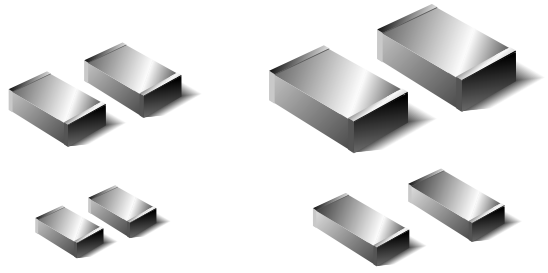
Film Chip Capacitor

Type: ECHU/ Type: ECWU

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



■ Features

- Small in size (minimum size 2.0 x 1.25mm)
- 85°C, 85%RH, W.V x 1.0 for 500 hours

■ Explanation of Part Numbers

1	2	3	4	5	6	7	8	9	10	11	12
E	C	H	U	1	H	1	0	3	J	B	
Product Code		Dielectric		Rated Voltage		Nominal Capacitance			Capacitance Tolerance	B Series	Packaging

Dielectric	
HU	PPS
WU	PEN

Rated Voltage	
1C	16VDC
1H	50VDC
1	100VDC

Nominal Capacitance	
102	0.001µF
103	0.01µF
104	0.1µF

Capacitance Tolerance	
G	±2%
J	±5%

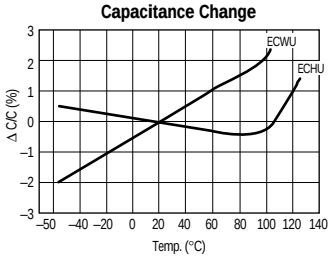
Packaging	Reel Dim.	Tape Width
5	±2%	±5%
9*	±2%	±5%

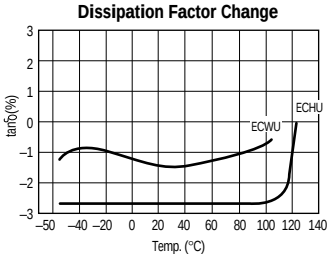
*To be applied only for size code E1, E2, E3, D1, D2, and D3.

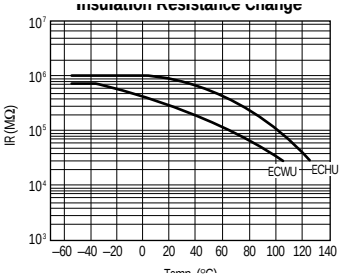
■ Specifications

Item	Type ECHU	Type ECWU
Operating temperature range	–55 to +125 °C	–55 to +105 °C
Rated voltage	16VDC, 50VDC	16VDC, 50VDC, 100VDC
Capacitance range	0.0001 to 0.1 µF (E12)	0.0033 to 0.47 µF (E12)
Capacitance tolerance	±2% (G), ±5% (J)	±5% (J)
Withstand voltage	Between terminals: Rated volt (VDC) x 175% 1 to 5s	Between terminals: Rated volt (VDC) x 175% 1 to 5s
Dissipation factor	≤ 0.1% (20°C, 1kHz)	≤ 1.0% (20‡C, 1kHz)
Insulation resistance	16VDC: ≥ 3000MΩ (20°C, 10VDC 60s) 50VDC: ≥ 3000MΩ (20°C, 50VDC 60s)	C ≤ 0.33µF: 16VDC: ≥ 3000MΩ (20°C, 10VDC 60s) 50VDC: ≥ 3000MΩ (20°C, 50VDC 60s) 100VDC: ≥3000MΩ (20°C, 10VDC 60s)
		C > 0.33µF: 16VDC: ≥ 1000MΩ ·µF min. (20°C, 10VDC 60s)
Soldering conditions	Flow: 260°C max. 5s max. Reflow: 260°C max. and 30s max. at more than 230°C (Temp. at cap. surface)	Reflow: 260°C max. and 30s max. at more than 230°C (Temp. at cap. surface)

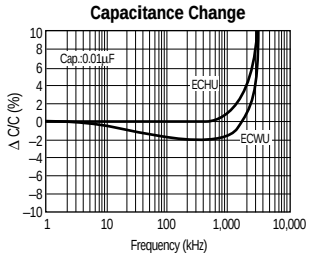
■ Temperature Characteristics (Typical curve)

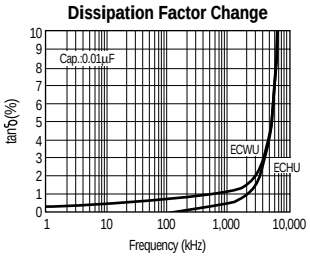


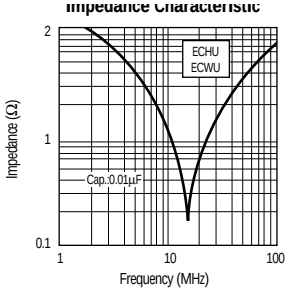




■ Frequency Characteristics (Typical curve)

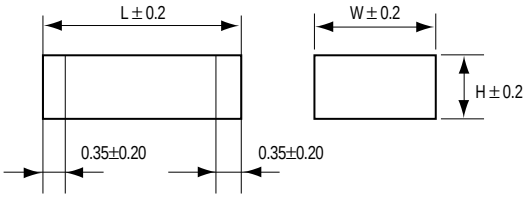




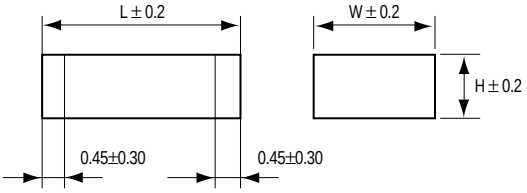


■ Dimensions in mm (not to scale) and Packaging

• Size code for J1, J2, H1, H2, H3, G1, G2, G3, E1, E2, and E3



• Size code for D1, D2, and D3.



Size Code	L	W	H	Tape Width	Reel Size	Qty./ Pack
J1	2.0	1.25	0.8	8	φ178	3000
J2	2.0	1.25	1.0	8	φ178	3000
H1	3.2	1.6	0.8	8	φ178	3000
H2	3.2	1.6	1.0	8	φ178	3000
H3	3.2	1.6	1.4	8	φ178	2000
G1	3.2	2.5	1.0	8	φ178	2000
G2	3.2	2.5	1.4	8	φ178	2000
G3	3.2	2.5	2.0	8	φ178	2000
E1	4.8	3.3	1.4	12	φ330	3000
E2	4.8	3.3	2.0	12	φ330	3000
E3	4.8	3.3	2.8	12	φ330	2000
D1	6.0	4.1	1.8	12	φ330	3000
D2	6.0	4.1	2.0	12	φ330	3000
D3	6.0	4.1	2.4	12	φ330	2000

■ Rating and Size Code

Capacitance (μF)	ECHU		ECWU			Capacitance (μF)	ECHU		ECWU		
	16VDC	50VDC	16VDC	50VDC	100VDC		16VDC	50VDC	16VDC	50VDC	100VDC
0.0001		J1				0.012	H1	G1	H2	G1	E1
0.00012		〃				0.015	〃	〃	〃	〃	〃
0.00015		〃				0.018	〃	G2	〃	G2	〃
0.00018		〃				0.022	〃	〃	〃	〃	E2
0.00022		〃				0.027	H2	〃	〃	〃	〃
0.00027		〃				0.033	〃	G3	H3	G3	E3
0.00033		〃				0.039	H3	〃	〃	〃	〃
0.00039		〃				0.047	〃	E1	〃	〃	〃
0.00047	*For these ratings, use ECHU 50VDC*	〃	*For these ratings, use ECHU 50VDC*	*For these ratings, use ECHU 50VDC*		0.056	G2	〃	G1	E1	
0.00056		〃				0.068	〃	〃	〃	〃	
0.00068		〃				0.082	G3	E2	G3	E2	
0.00082		〃				0.1	〃	〃	〃	〃	
0.001		〃			H2	0.12			E1	D1	
0.0012		〃			〃	0.15			〃	〃	
0.0012		〃			〃	0.18			〃	D2	
0.0015		〃			〃	0.22			E2	D3	
0.0018		〃			〃	0.27			D1		
0.0022		〃			〃	0.33			〃		
0.0027		〃			〃	0.39			D2		
0.0033	J1	H1		H1	H3	0.47			D3		
0.0039	〃	〃	*For these ratings, use ECHU 16VDC*	〃	〃						
0.0047	〃	〃		〃	〃						
0.0056	J1	H1		H1	G2						
0.0068	〃	〃		〃	〃						
0.0082	J2	H2		H2	G3						
0.01	〃	〃		〃	〃						