

Film Chip Capacitor

Type: **ECHU(C)**

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

■ Features

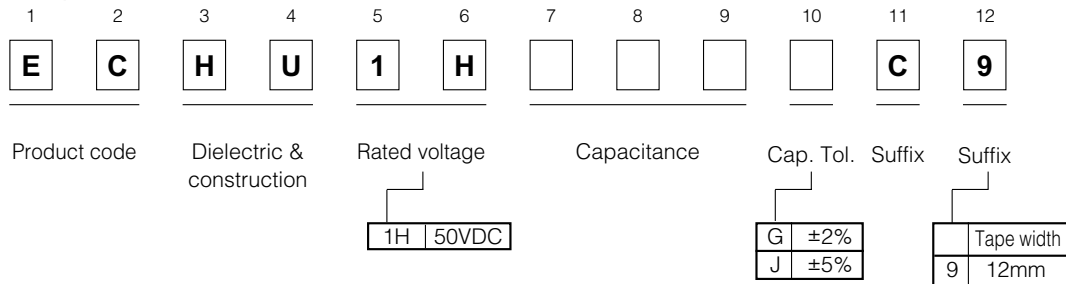
- ◆ Small in size
- ◆ Low loss and excellent frequency characteristics
- ◆ Applicable for both flow and reflow soldering

■ Recommended Applications

- ◆ Time - constant
- ◆ Filtering
- ◆ Oscillation and resonance
- ◆ Resonance circuit for LCD back-lighting inverter unit



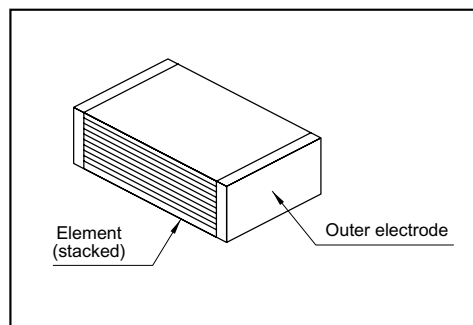
■ Explanation of Numbers



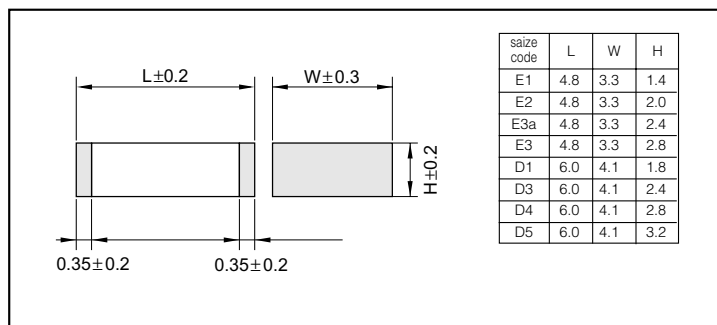
■ Specifications

Category temp. range	-55 to +125°C
Rated voltage	50VD(C≥ 0.12 μF:Derating of rated voltage by 1.25%/°C at more than 105°C)
Capacitance range	0.047 to 0.22 μF (E12)
Capacitance tolerance	±2%(G), ±5%(J)
Withstand voltage	Between terminals : Rated volt. (VDC)×175% 1 to 5s
Dissipation factor	≤0.6% (20°C, 1kHz)
Insulation resistance	≥ 3000MΩ (20°C, 50VDC 60s)
Soldering conditions	Flow soldering : 260°C max.5sec max. Reflow soldering : 260°C max.30sec max. at more than 230°C(Temp.at cap. surface)

■ Construction



■ Dimensions in mm (not to scale)



■Taping Specification for Automatic Insertion(Mounting)

■ Rating, Dimensions & Quantity/Reel

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

Cap.(μ F)	Rated volt. 50VDC					Size Code	Qty
	Part No.	Dimensions (mm)					
		L	W	H			
0.047	ECHU1H473□C9	4.8	3.3	1.4	E1	3000	
0.056	ECHU1H563□C9	4.8	3.3	2.0	E2		
0.068	ECHU1H683□C9	4.8	3.3	2.0	E2		
0.082	ECHU1H823□C9	4.8	3.3	2.4	E3a	2000	
0.1	ECHU1H104□C9	4.8	3.3	2.8	E3		
0.12	ECHU1H124□C9	6.0	4.1	1.8	D1	3000	
0.15	ECHU1H154□C9	6.0	4.1	2.4	D3		
0.18	ECHU1H184□C9	6.0	4.1	2.8	D4	2000	
0.22	ECHU1H224□C9	6.0	4.1	3.2	D5		

□Capacitance tolerance code

■Example for Land Dimensions (mm)

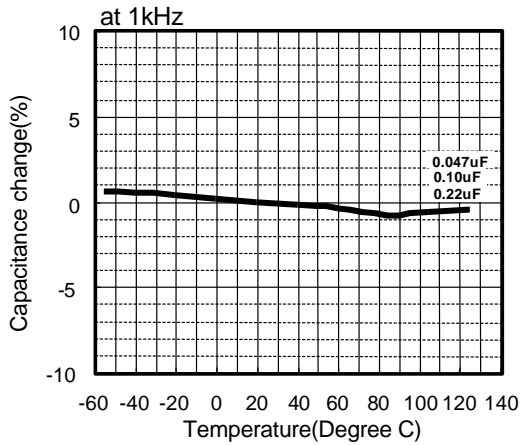
The diagram shows a top-down view of a capacitor land. It consists of two rectangular electrodes separated by a gap. Dimension A is the width of one electrode, B is the total width including the gap, and C is the height. The area between the electrodes is labeled 'Land'. One of the electrodes is labeled 'Electrode'.

Size code	Land dimensions					
	Flow soldering			Reflow soldering		
	A	B	C	A	B	C
E1,E2,E3a,E3	2.6	6.6	3.0	2.6	6.6	3.0
D1,D3,D4,D5	3.8	7.8	3.8	3.8	7.8	3.8

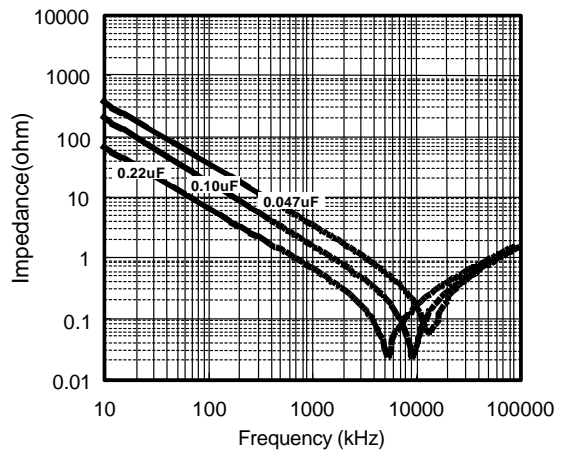
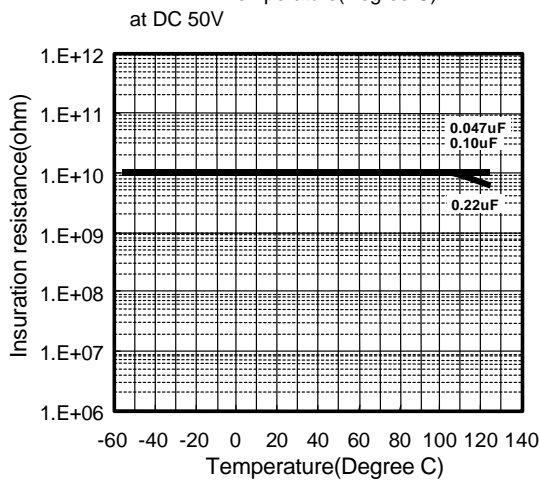
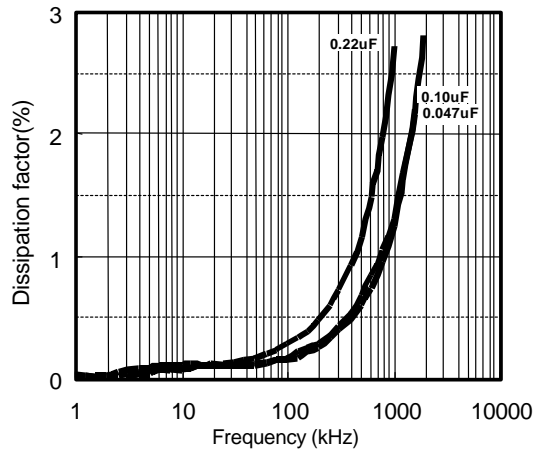
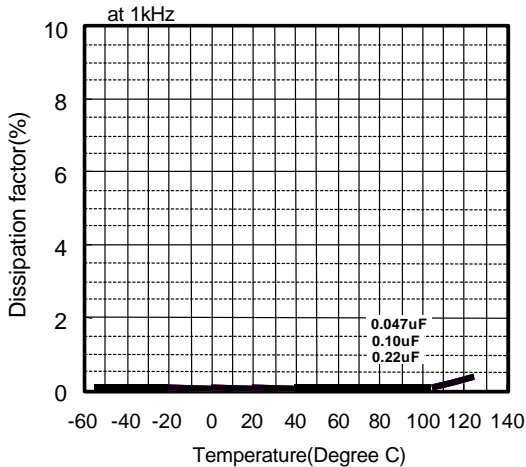
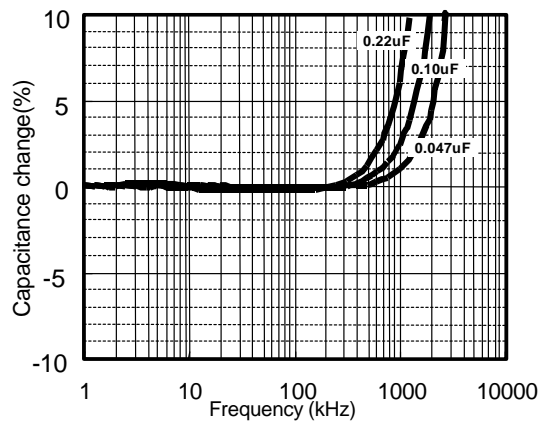
ECHU (C) Type DC50V series (Stacked Metallized Film)

Electrical Characteristics < Typical Data >

Temperature Characteristics

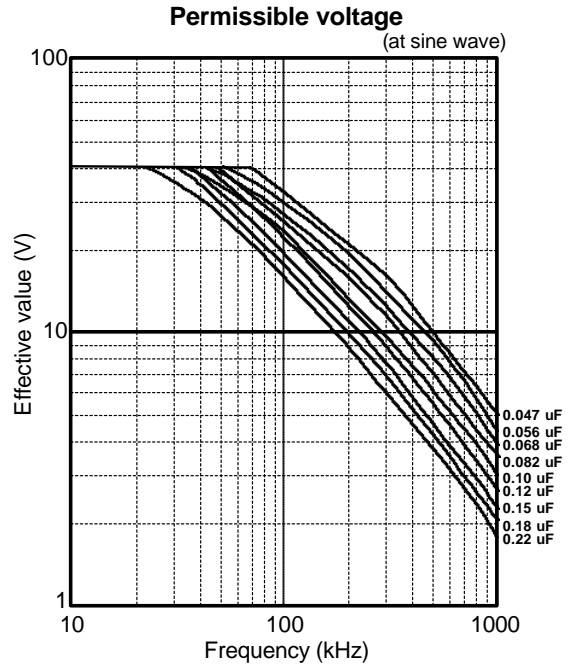
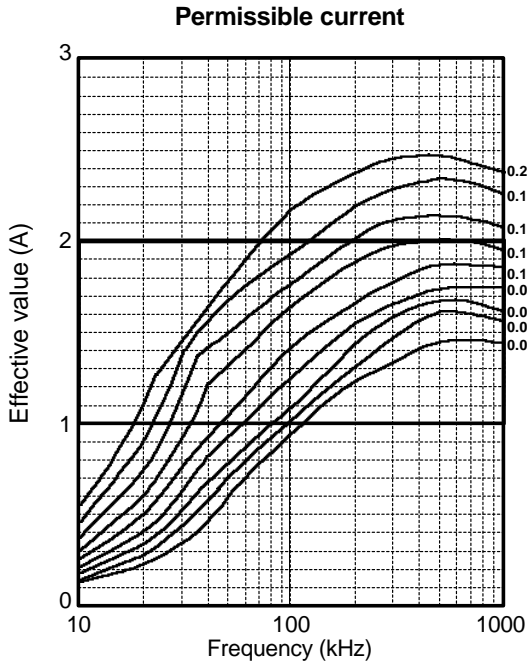


Frequency Characteristics



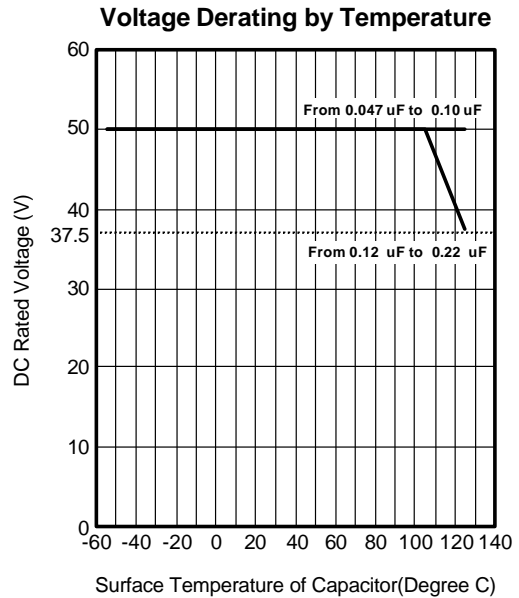
ECHU (C) Type DC50V series (Stacked Metallized Film)

Applicable Specifications



**Pulse Handling Capability (dv/dt)
(Max 10000cycles)**

Rating Voltage	Capacitance Value(μF)	Code	dv/dt (V/μs)	Current _(o-p) (A)
DC 50V	0.047	473	180	8.5
	0.056	563		10.1
	0.068	683		12.2
	0.082	823		14.8
	0.10	104		18.0
	0.12	124	130	15.6
	0.15	154		19.5
	0.18	184		23.4
	0.22	224		28.6



* Please consult Panasonic if your condition exceeds the above spec.

*Permissible voltage graph is the case of sine waveform. When you use this product, peak voltage must not exceed DC rated voltage.

*The current_(o-p) value is calculated using nominal capacitance.