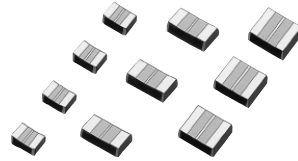


Stacked Metallized Plastic Film Chip Capacitor

0.1UF 16VDC 20% 0805  
ECP-U1C104MA5

Type : **ECP(UA)**

Stacked dielectric and inner electrode with simple mold - less construction



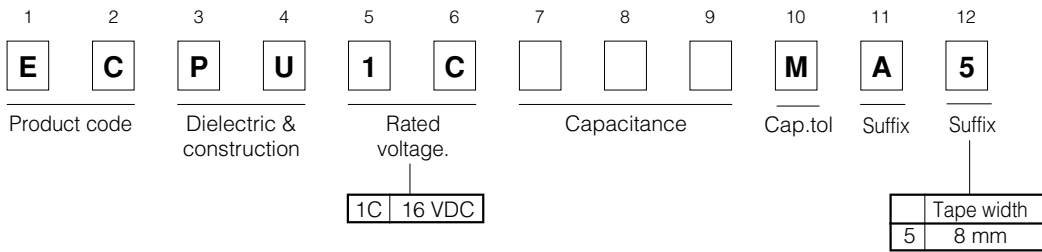
■ Features

- Low ESR
- Max. capacitance values 1.0  $\mu$ F
- Smallest package size in film capacitors 3225/1.0  $\mu$ F
- For reflow soldering
- RoHS directive compliant

■ Recommended Applications

- Noise suppressor
- Coupling

■ Explanation of Part Numbers

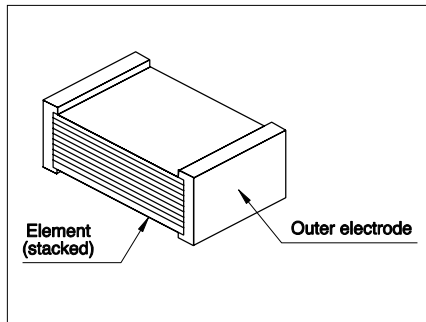


■ Specifications

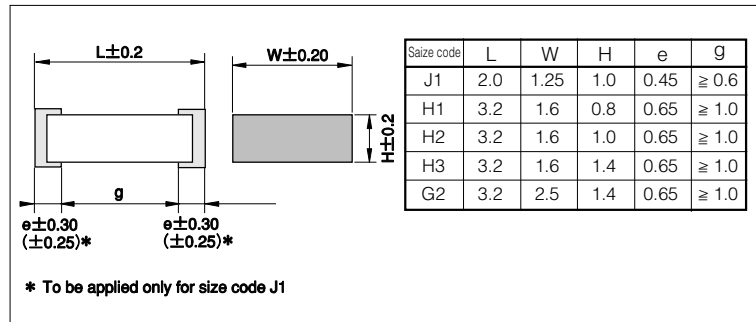
Category temp. range (Including temperature-rise on unit surface)	- 40 °C to + 85 °C
Rated voltage	16 VDC
Capacitance range	0.10 $\mu$ F to 1.0 $\mu$ F (E6)
Capacitance tolerance	$\pm$ 20 % (M)
Dissipation factor ( $\tan\delta$ )	$\tan\delta \leq 1.5$ % (20 °C, 1 kHz)
Withstand voltage	Between terminals: Rated volt (VDC) $\times$ 175 % 1 s to 5 s
Insulation resistance (IR)	C $\leq$ 0.33 $\mu$ F : IR $\geq$ 1000 M $\Omega$ (20 °C, 10 VDC, 60 s) C>0.33 $\mu$ F : IR $\geq$ 300 M $\Omega$ · $\mu$ F (20 °C, 10 VDC, 60 s)
Soldering conditions	Reflow soldering : 240 °C max. and 30 sec max. at more than 220 °C (Temp. at cap. surface)

\* 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)



### ■ Taping Specification for Automatic Mounting

Refer to the page of taping specifications.

### ■ Rating, Dimensions & Quantity/Reel

Part No.	Cap. (μF).	Dimensions (mm)				Quantity
		L	W	H	Size Code	
EPCU1C104MA5	0.10	2.0	1.25	1.0	J1	3000
EPCU1C154MA5	0.15	3.2	1.6	0.8	H1	
EPCU1C224MA5	0.22	3.2	1.6	0.8	H1	
EPCU1C334MA5	0.33	3.2	1.6	1.0	H2	
EPCU1C474MA5	0.47	3.2	1.6	1.4	H3	2000
EPCU1C684MA5	0.68	3.2	1.6	1.4	H3	
EPCU1C105MA5	1.0	3.2	2.5	1.4	G2	

### ■ Recommended for Land Dimensions (mm)

Size Code	Land dimensions for reflow soldering		
	A	B	C
J1	0.8	2.4	1.1
H1	1.8	3.6	1.4
H2	1.8	3.6	1.4
H3	1.8	3.6	1.4
G2	1.8	3.6	2.3

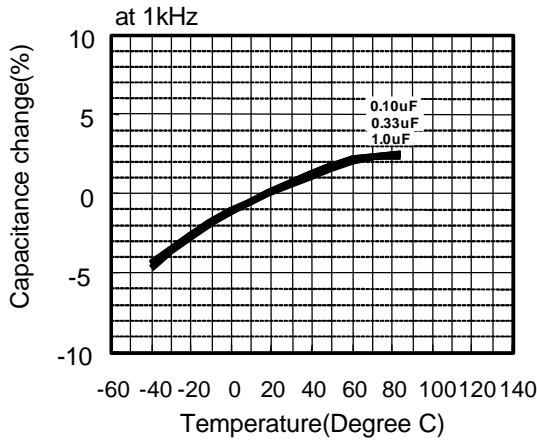
\* It is not warrantable that you can mount the capacitor without trouble under all the mounting condition when "Recommender for Land dimensions" is adopted.



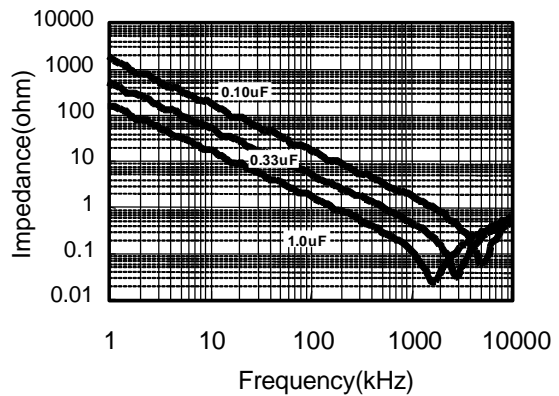
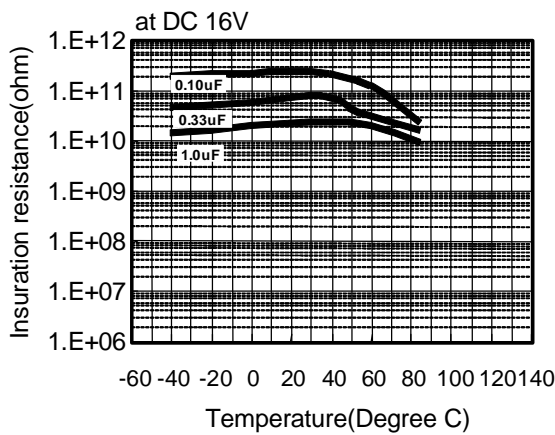
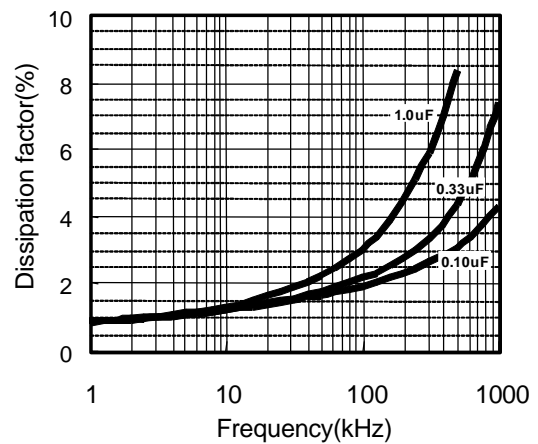
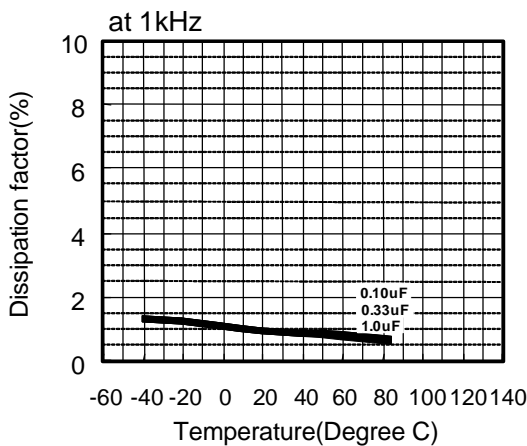
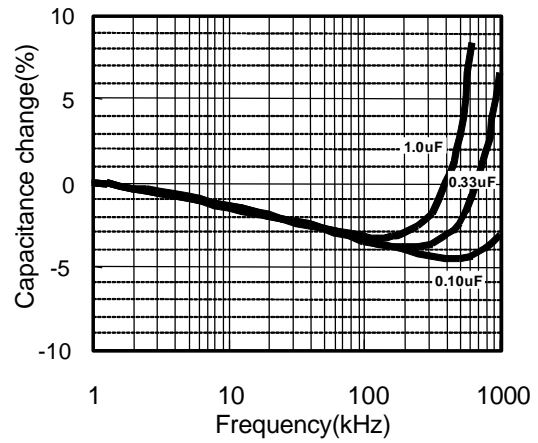
## EPCU (A) Type DC16V series (Stacked Metallized Film)

### Electrical Characteristics <Typical Data >

#### Temperature Characteristics



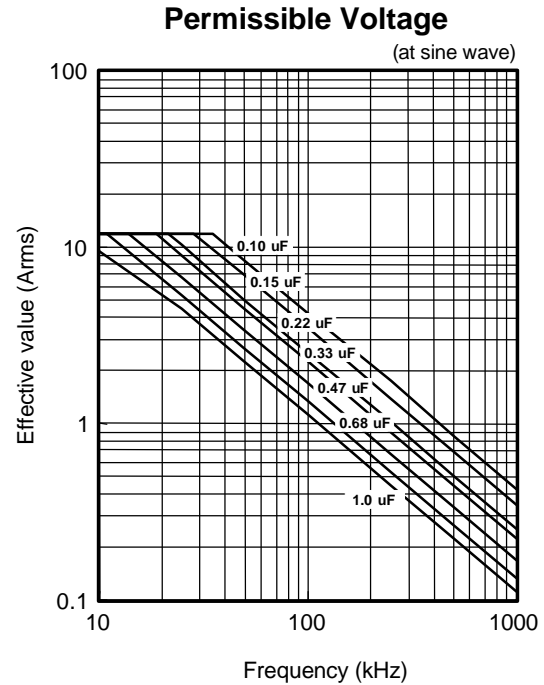
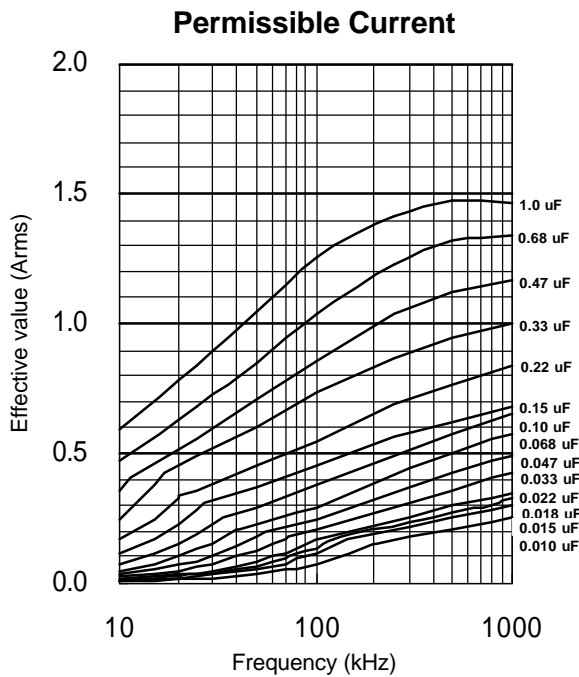
#### Frequency Characteristics





## ECPU (A) Type DC16V series (Stacked Metallized Film)

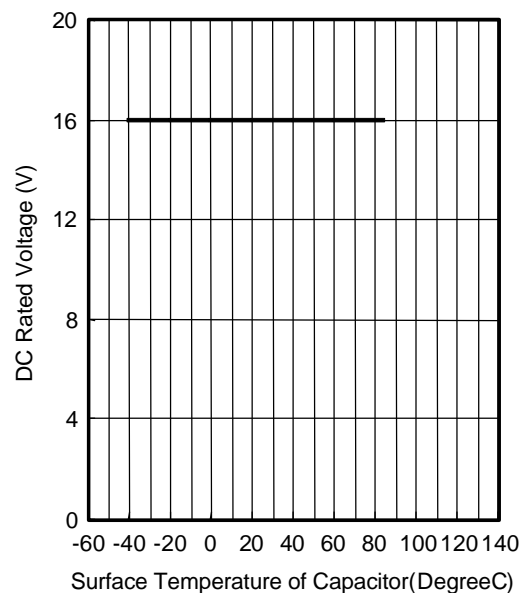
### Applicable Specifications



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

Rating Voltage	Capacitance Value(uF)	Code	dv/dt(V/us)	Current <sub>(o,p)</sub> (A)
DC 16V	0.10	104	19	1.9
	0.15	154	15	2.3
	0.22	224	13	2.9
	0.33	334	10	3.3
	0.47	474	7	3.3
	0.68	684	5	3.4
	1.0	105	3	3.0

#### Voltage Derating by Temperature



\* 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<sub>(o,p)</sub> value is calculated using nominal capacitance.

### 2.4.2 Cautions for use of soldering iron

- Be careful that the soldering irons do not directly touch the main body of the chip film capacitor. In particular, don't touch the side (cut section). If touched by the heated soldering iron, lowering of insulation resistance, shortcircuit or other characteristic deterioration may occur.
- Preheat the printed wiring board land sufficiently with the soldering iron, and then solder. Solder without directly touching the iron tip to the electrode of the capacitor.
- Don't reuse the products once removed by the soldering irons.
- Should not mount the chip film capacitors in the mass production by soldering iron. (The temperature control is difficult, and the characteristics may be deteriorated.)
- Should not resolder with heat directly from bottom side of P. W. Board. because capacitor will likely be damaged.

### 3. Washing the mounted boards

#### <Usable detergent and washing method>

(Usable detergent)

Classification	Detergent name	Maker
Alcohol derivative	IPA (isopropyl alcohol)	(Reagent for general industrial use)
Halogenated hydrocarbon	AK-225AES	Asahi Glass Co.

(Washing method)

Item	Condition	
	Temperature	Time
Immersion washing	50 °C	Within 5 minutes
Steam washing	50 °C	Within 5 minutes
Ultrasonic washing	50 °C	Within 5 minutes

#### <CFC substitute detergent>

As a result of regulation of CFC and chlorine derivative detergents, many substitute detergents come to be used, but the performance of the chip type capacitor may be reduced depending on the type of detergent or washing condition. Check sufficiently beforehand. Consult us in advance if planning to use CFC substitute detergent.

#### <Drying after washing>

Dry after washing so that the detergent is not left over. If drying is insufficient, the detergent is left over on the element surface, and the insulation resistance is measured to be lowered. Dry enough so as not to leave detergent.

### 3.1. Washing of chip type

- Since the chip type capacitor does not have a coating, components of flux or detergent left over on the element at the time of washing may be activated and invade into the inside of the capacitor, and adverse effects may be caused. Observe the following cautions.
- In the case of washing, use flux and cream solder with halogen content of 0.1wt.% or less when mounting.
- In the case of ultrasonic washing, note that peeling of protective film, electrode separation due to resonance, or characteristic deterioration may occur depending on the detergent used or ultrasonic output. Check carefully beforehand.
- When using a CFC substitute detergent, with the washing method of spraying detergent (rinsing water) to the substrate at high pressure, the protective film on the element surface may be peeled off due to the water pressure. Check carefully beforehand.

### 3.2. Washing of leaded type

The film capacitor varies significantly in the effect of washing depending on the structure and material, and generally it is less affected by CFC or alcohol derivative washing solvent, and is likely to be affected by highly polar solvent.

The lead type film capacitor is coated with an epoxy resin excellent in chemical resistance, and is hardly affected by detergent, but it is recommended to be washed for short duration.

Applicability of detergents in film capacitors is listed for reference.

