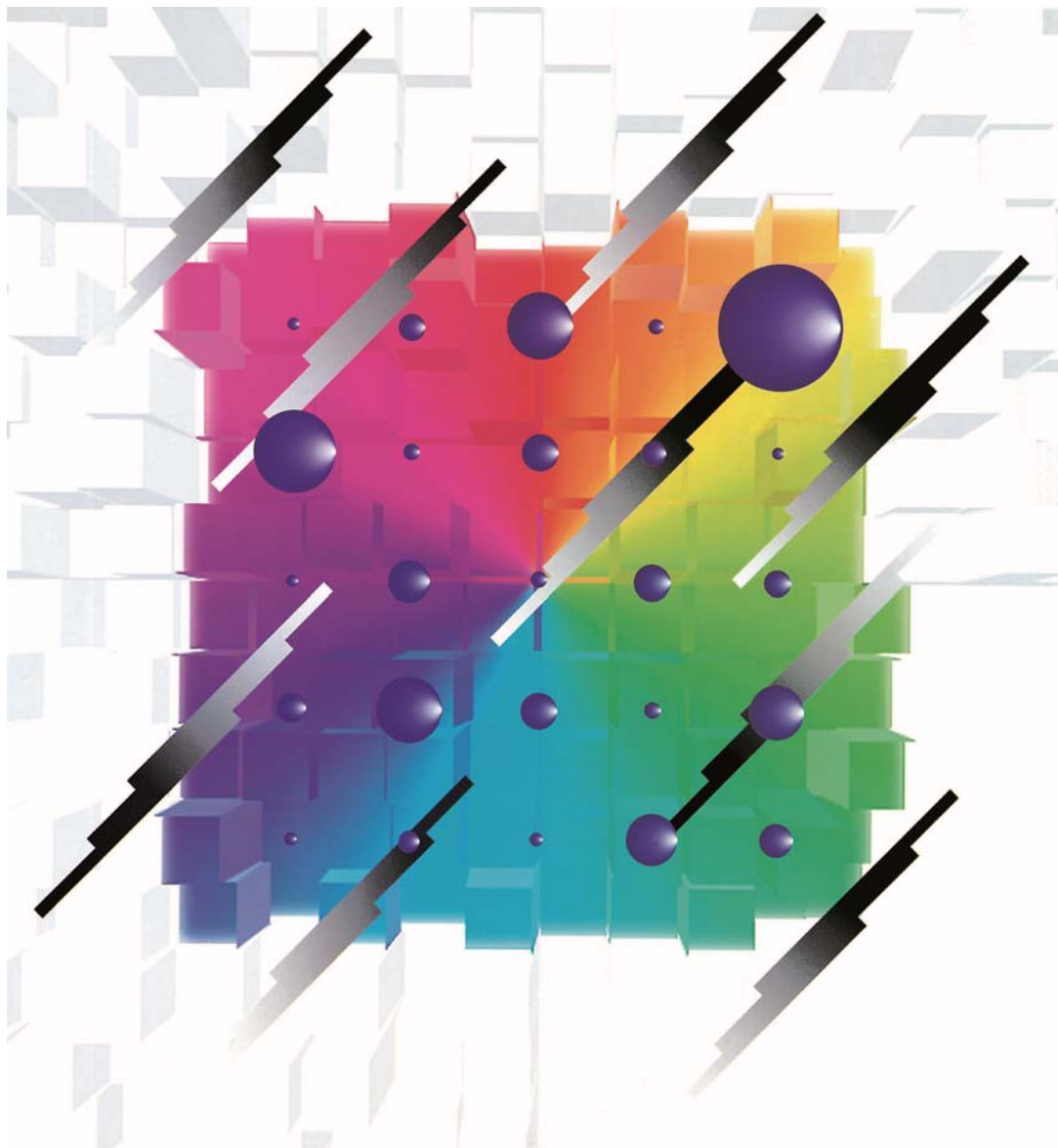


### Plastic Film Capacitor

Electronic Equipment Use

AC Motor Use

Automotive, Industrial and Infrastructure Use




## • Electronic Equipment Use

Dielectric	Series
Stacked Metallized PPS Film Chip Capacitor	ECHU (X)
	ECHU (C)
Stacked Metallized PEN Film Chip Capacitor	ECWU (X)
	ECWU (C)
	ECWU (V16)
Stacked Metallized Plastic Film Chip Capacitor	ECPU (A)
Metallized Polyester Film Capacitor	ECQE (F)
	ECQE (B)
	ECQE (T)
Metallized Polypropylene Film Capacitor	ECWF (L)
	ECWF (A)
	ECWFD
	ECWFE
	ECWH (V)
	ECWH (A)
	ECWH (C)
	TMF
Metallized Polypropylene Film Capacitor	ECQUA
Metallized Polyester Film Capacitor	ECQUL
	ECQUG





















## • AC Motor Use

Dielectric	Series
Film Capacitor for AC Motor	AMF
	DMF
	PMF/SMF

## • Automotive, Industrial and Infrastructure Use

Dielectric	Series
Metallized Polyester Film Capacitor for Noise Suppression of Automobile	ECQE
DC-Link Film Capacitor	Type1
Metallized Polypropylene Film Capacitor	EZPE
	EZPE (Low profile type)
	 EZPQ




## Electronic Equipment Use

	Dielectric	Type	Appearance	Operating Temp*	Rating	Feature	Application
Stacked Metallized Film Chip Capacitor	Stacked Metallized PPS Film Chip Capacitor	ECHU(X)		-55 °C to +125 °C	0.00010 µF to 0.22 µF 16 V.DC, 50 V.DC	<ul style="list-style-type: none"> <li>Non-inductive, Stacked</li> <li>Tight C-Tol.</li> <li>Reflow soldering</li> </ul>	<ul style="list-style-type: none"> <li>High density mounting</li> </ul>
		ECHU(C)		-55 °C to +105 °C	0.010 µF to 0.22 µF 100 V.DC	<ul style="list-style-type: none"> <li>Non-inductive, Stacked</li> <li>Tight C-Tol.</li> <li>Reflow soldering</li> </ul>	<ul style="list-style-type: none"> <li>High density mounting</li> <li>Resonance circuit for LCD B/L inverter unit</li> </ul>
	Stacked Metallized PEN Film Chip Capacitor	ECWU(X)		-55 °C to +105 °C	0.0010 µF to 0.010 µF 100 V.DC	<ul style="list-style-type: none"> <li>Non-inductive</li> <li>Reflow soldering</li> </ul>	<ul style="list-style-type: none"> <li>High density mounting</li> </ul>
		ECWU(C)		-55 °C to +125 °C	0.0010 µF to 1.0 µF 100 V.DC to 630 V.DC	<ul style="list-style-type: none"> <li>Non-inductive</li> <li>Reflow soldering</li> </ul>	<ul style="list-style-type: none"> <li>Ringer circuit telephone PBX</li> <li>DC Blocking for xDSL</li> </ul>
		ECWU(V16)		-55 °C to +85 °C	0.0010 µF to 0.12 µF 250 V.DC	<ul style="list-style-type: none"> <li>Non-inductive</li> <li>Reflow soldering</li> </ul>	<ul style="list-style-type: none"> <li>Ringer circuit telephone PBX</li> <li>DC Blocking for xDSL</li> </ul>
	Stacked Metallized Plastic Film Chip Capacitor	ECPU(A)		-40 °C to +85 °C	0.10 µF to 1.0 µF 16 V.DC	<ul style="list-style-type: none"> <li>Non-inductive</li> <li>Reflow soldering</li> </ul>	<ul style="list-style-type: none"> <li>Noise suppressor</li> <li>Audio circuit</li> </ul>
Metallized Type	Metallized Polyester Film Capacitor	ECQE(F)		-40 °C to +105 °C	0.0010 µF to 10 µF 100 V.DC to 1250 V.DC, 125 V.AC, 250 V.AC	<ul style="list-style-type: none"> <li>Epoxy resin coating</li> <li>Wide capacitance range</li> </ul>	<ul style="list-style-type: none"> <li>General purpose</li> <li>Noise suppressor</li> </ul>
		ECQE(B)		-40 °C to +105 °C	0.010 µF to 4.7 µF 250 V.DC 125 V.AC	<ul style="list-style-type: none"> <li>Epoxy resin coating</li> <li>Miniaturization of ECQE(F) type</li> </ul>	<ul style="list-style-type: none"> <li>General purpose</li> <li>Noise suppressor</li> </ul>
		ECQE(T)		-40 °C to +105 °C	0.010 µF to 10 µF 250 V.DC to 630 V.DC 125 V.AC, 250 V.AC	<ul style="list-style-type: none"> <li>Epoxy resin coating</li> <li>Excellent moisture resistance</li> </ul>	<ul style="list-style-type: none"> <li>Electric circuit of high humidity equipment</li> </ul>
	Metallized Polypropylene Film Capacitor	ECWF(L)		-40 °C to +105 °C	0.010 µF to 2.4 µF 400 V.DC, 630 V.DC	<ul style="list-style-type: none"> <li>Epoxy resin coating</li> <li>Low D.F</li> <li>Excellent moisture resistance</li> </ul>	<ul style="list-style-type: none"> <li>High frequency high current circuit</li> </ul>
		ECWF(A)		-40 °C to +105 °C	0.10 µF to 6.8 µF 250 V.DC to 630 V.DC	<ul style="list-style-type: none"> <li>Miniaturization of ECWF(L) type</li> <li>Low D.F</li> </ul>	<ul style="list-style-type: none"> <li>Active filtering circuit</li> <li>High frequency high current circuit</li> </ul>
		ECWFD		-40 °C to +110 °C	0.1 µF to 4.7 µF 450 V.DC	<ul style="list-style-type: none"> <li>Epoxy resin coating</li> <li>Low D.F</li> <li>Miniaturization of ECWF(A) type</li> </ul>	<ul style="list-style-type: none"> <li>Active filtering circuit</li> <li>High frequency high current circuit</li> </ul>
				-40 °C to +105 °C	0.047 µF to 4.7 µF 630 V.DC		
		ECWFE		-40 °C to +105 °C	0.10 µF to 4.7 µF 450 V.DC, 630 V.DC	<ul style="list-style-type: none"> <li>Box type</li> <li>Low D.F</li> </ul>	<ul style="list-style-type: none"> <li>Active filtering circuit</li> <li>High frequency high current circuit</li> </ul>
		ECWH(V)		-40 °C to +105 °C	0.0010 µF to 0.10 µF 1000 V.DC to 2000 V.DC	<ul style="list-style-type: none"> <li>Epoxy resin coating</li> <li>Low D.F</li> <li>Small in size</li> </ul>	<ul style="list-style-type: none"> <li>High frequency high current circuit</li> </ul>
		ECWH(A)		-40 °C to +105 °C	0.0010 µF to 0.047 µF 800 V.DC, 1600 V.DC	<ul style="list-style-type: none"> <li>Epoxy resin coating</li> <li>Low D.F</li> <li>Miniaturization of ECWH(V) type</li> </ul>	<ul style="list-style-type: none"> <li>General resonance circuit</li> </ul>
		ECWH(C)		-40 °C to +105 °C (+85 °C)	0.0024 µF to 0.33 µF 630 V.DC to 3000 V.DC	<ul style="list-style-type: none"> <li>Epoxy resin coating</li> <li>Low D.F</li> </ul>	<ul style="list-style-type: none"> <li>General resonance circuit</li> <li>Microwave oven</li> <li>IH resonance circuit</li> </ul>
		TMF		-25 °C to +85 °C	Smoothing circuit 1 µF to 10 µF 150 V.AC to 220 V.AC 350 V.DC to 630 V.DC Resonance circuit 0.01 µF to 4.0 µF 300 V.AC to 2300 V.AC 500 V.DC to 1200 V.DC	<ul style="list-style-type: none"> <li>Wide voltage range up to 2300 V.AC</li> <li>High frequency and high current capability</li> <li>Low loss/Low ESR</li> <li>Long life time/High reliability</li> <li>Flame retardant</li> </ul>	<ul style="list-style-type: none"> <li>General resonance and smoothing circuits for IH and Industry</li> </ul>
Interference Suppressors (Safety standard approval capacitors)	Metallized Polypropylene Film Capacitor	ECQUA		-40 °C to +110 °C	0.10 µF to 4.7 µF 275 V.AC	<ul style="list-style-type: none"> <li>Box type</li> <li>UL, CSA, VDE Approved (ClassX2)</li> </ul>	<ul style="list-style-type: none"> <li>Worldwide</li> <li>Noise suppressor for AC line</li> </ul>
	Metallized Polyester Film Capacitor	ECQUL		-40 °C to +100 °C	0.0010 µF to 2.2 µF 275 V.AC (250 V.AC)	<ul style="list-style-type: none"> <li>Box type</li> <li>UL, CSA, VDE Approved (ClassX2)</li> </ul>	<ul style="list-style-type: none"> <li>Worldwide</li> <li>Noise suppressor for AC line</li> </ul>
		ECQUG		-40 °C to +100 °C	0.010 µF to 1.0 µF 300 V.AC (250 V.AC)	<ul style="list-style-type: none"> <li>Equipped with a safety mechanism</li> <li>UL, CSA, VDE, ENEC Approved (ClassX1)</li> </ul>	<ul style="list-style-type: none"> <li>Worldwide</li> <li>Noise suppressor for AC line</li> </ul>

\* Operating temp. : Including temperature-rise on unit surface.






\* Refer to each product page for details.

## AC Motor Use

Dielectric	Type	Appearance	Operating Temp*	Rating	Feature	Application
Film Capacitor for AC Motor	AMF		-25 °C to +70 °C	10 µF to 40 µF 180 V.AC to 440 V.AC	<ul style="list-style-type: none"> <li>● High safety (safety function installed)</li> <li>● High reliability</li> <li>● Small size, lightness, and low loss</li> </ul>	● Motor and compressor (for running)
	DMF		-25 °C to +70 °C	10 µF to 60 µF 180 V.AC to 450 V.AC	<ul style="list-style-type: none"> <li>● High safety (with built-in safety device)</li> <li>● High reliability, safety standard approval</li> <li>● Small size, lightness, and low loss</li> </ul>	● Motor and compressor (for running)
	PMF/SMF		-25 °C to +70 °C	0.5 µF to 65 µF 150 V.AC to 500 V.AC	<ul style="list-style-type: none"> <li>● High safety (safety function installed)</li> <li>● High reliability, safety standard approval</li> <li>● Small size, lightness, and low loss</li> </ul>	● Motor and small compressor (for running)

\* The range of IEC approval is different depending on each approval.

## Automotive, Industrial and Infrastructure Use

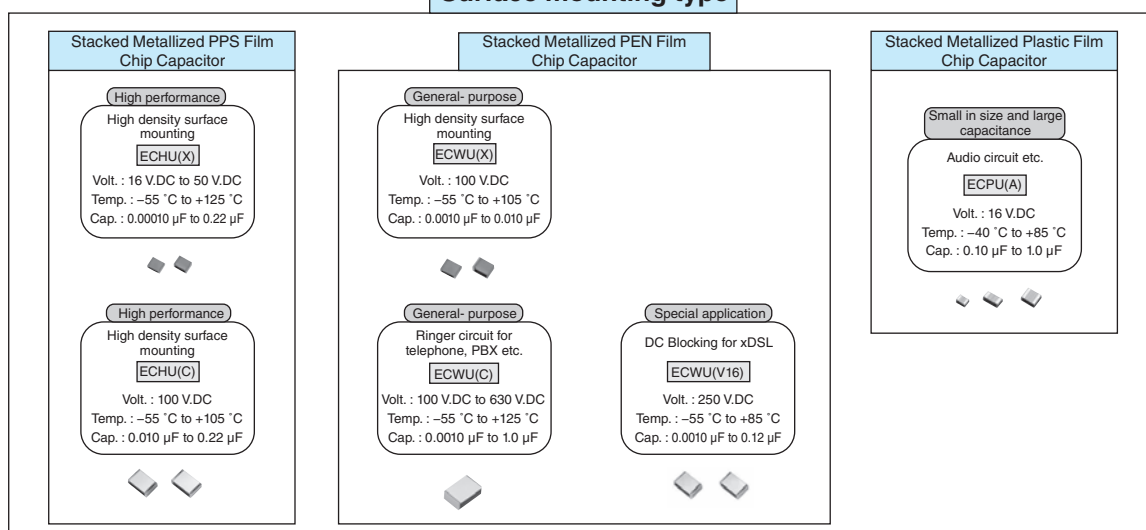
Dielectric	Type	Appearance	Operating Temp*	Rating	Feature	Application
Metallized Polyester Film Capacitor for Noise Suppression of Automobile	ECQE		-40 °C to +130 °C	0.47 µF, 2.2 µF, 4.7 µF 250 V.DC	<ul style="list-style-type: none"> <li>● Box type</li> </ul>	● Noise suppressor for automobile
DC-Link Film Capacitor	Type1		-40 °C to +105 °C	581 µF 450 V.DC	<ul style="list-style-type: none"> <li>● High safety, Self-healing and Self-protecting function built in.</li> <li>● No catastrophic failure upon natural end of life due to inbuilt fuse function</li> </ul>	● Any automotive and/or other application requiring DC Linkage
Metallized Polypropylene Film Capacitors	EZPE		-40 °C to +85 °C	10 µF to 110 µF 500 V.DC to 1300 V.DC	<ul style="list-style-type: none"> <li>● High safety, Self-healing and Self-protecting function built-in</li> <li>● Long product life, High reliability</li> <li>● Low loss, Low ESR</li> <li>● Flame retardant</li> </ul>	<ul style="list-style-type: none"> <li>● DC filtering</li> <li>● DC link circuit</li> </ul>
	EZPE (Low profile type)		-40 °C to +85 °C	29 µF : 450 V.DC 66 µF : 525 V.DC 12 µF : 575 V.DC 10 µF : 630 V.DC	<ul style="list-style-type: none"> <li>● High safety, Self-healing and Self-protecting function built-in</li> <li>● Long product life, High reliability, High moisture resistance</li> <li>● Low loss, Low ESR</li> <li>● Flame retardant</li> </ul>	<ul style="list-style-type: none"> <li>● Solar inverters, Micro inverters</li> <li>● Wind power generation</li> <li>● Industrial power supplies</li> <li>● Inverter circuit in appliances (Air Conditioners etc.)</li> </ul>
	<b>NEW</b> EZPQ		-40 °C to +85 °C	12 µF to 36 µF 250 V.AC	<ul style="list-style-type: none"> <li>● High safety, Self-healing and Self-protecting function built-in</li> <li>● Long product life, High reliability,</li> <li>● Low loss, Low ESR</li> <li>● Flame retardant</li> <li>● Super high moisture resistance (85 °C, 85 %RH)</li> </ul>	● AC Filter

\* Operating temp. : Including temperature-rise on unit surface.

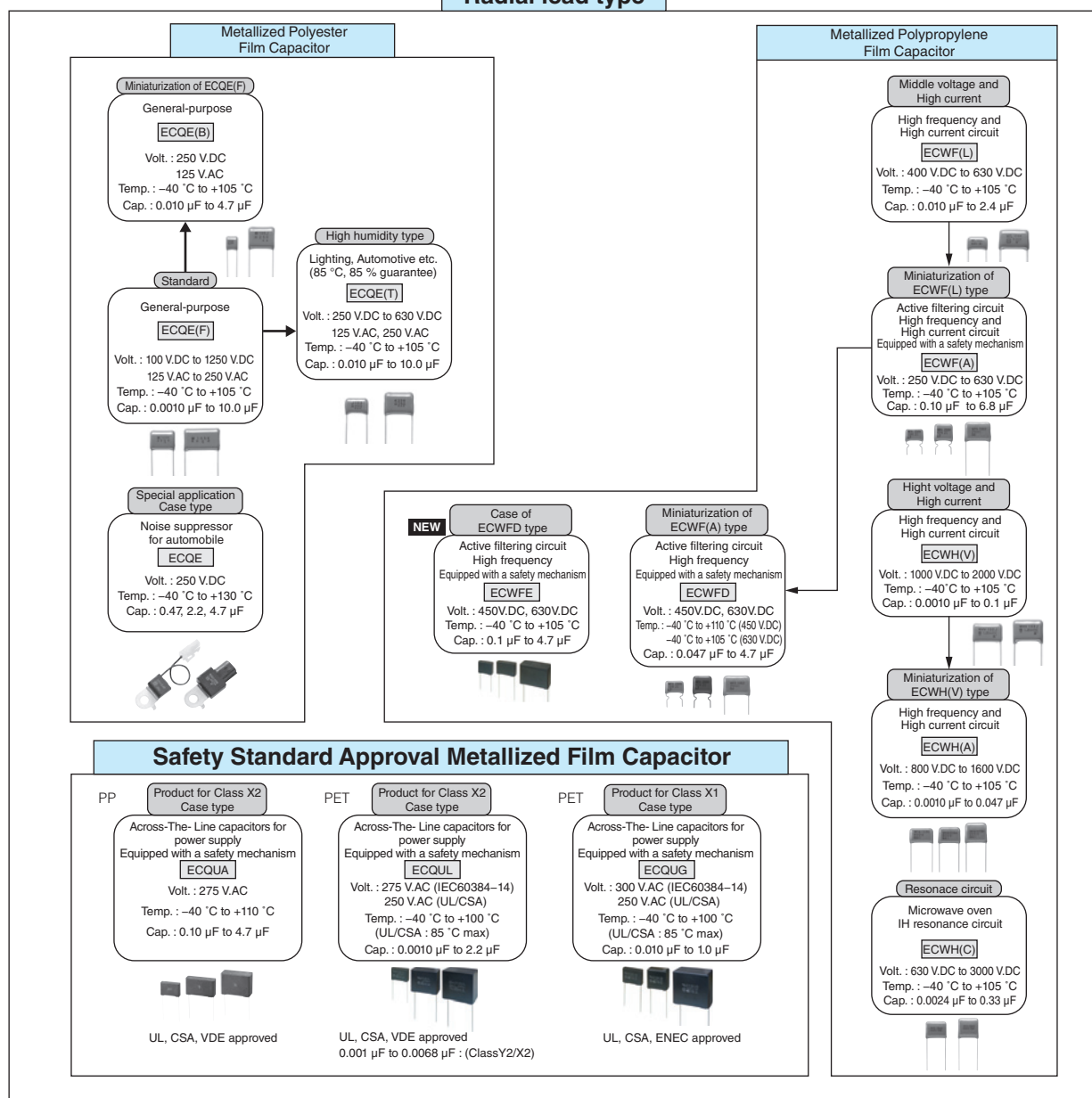
\* Refer to each product page for details.

## Series system diagram

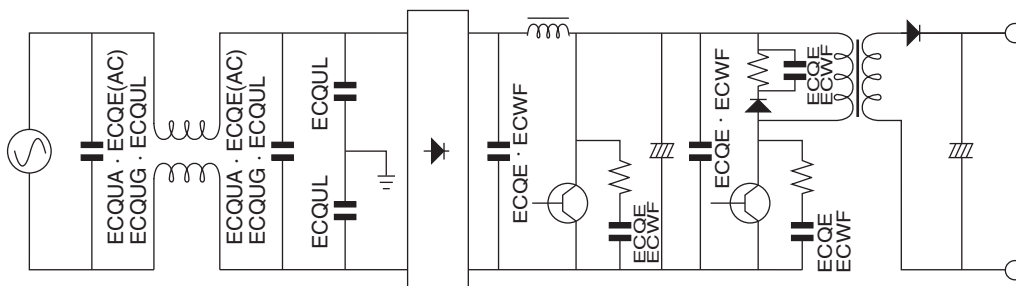
### Surface mounting type



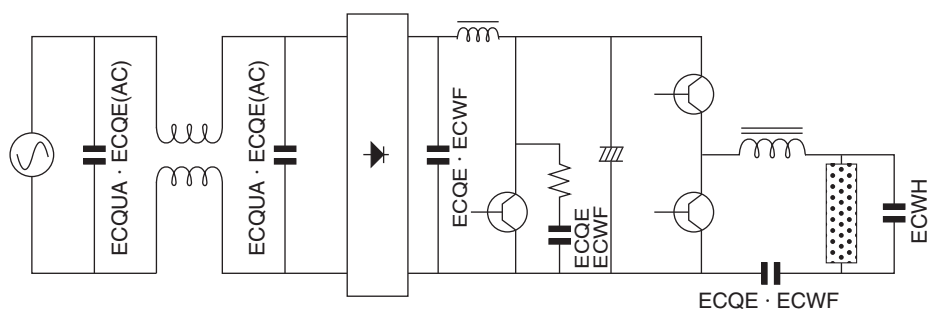
### Radial lead type



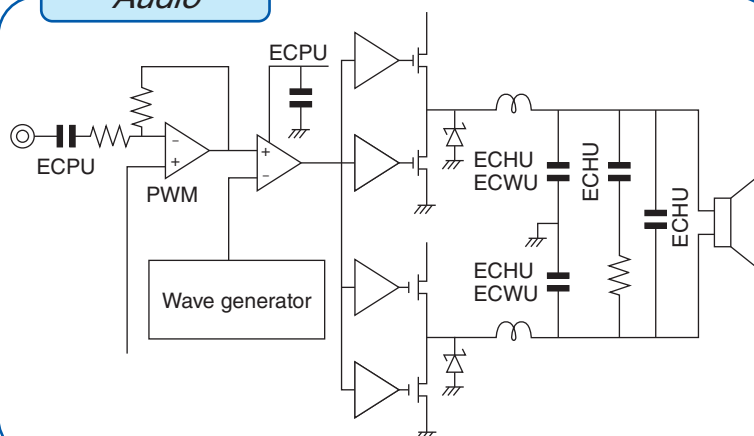
### Switching Power Supply



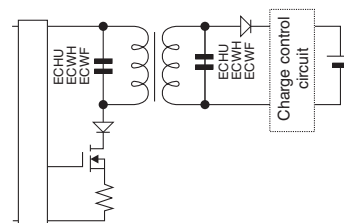
### Lighting



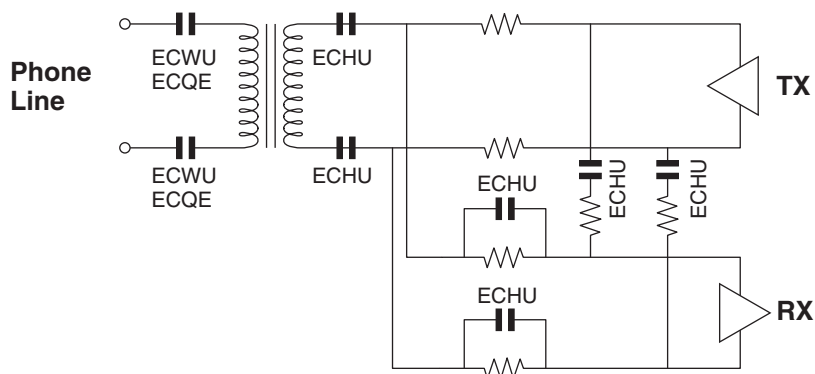
### Audio



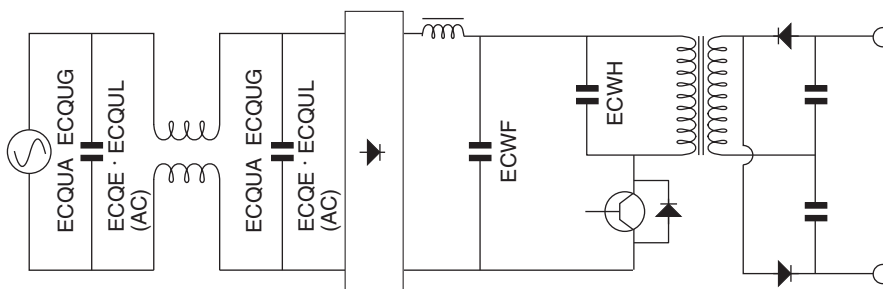
### Non-contact charger



### xDSL

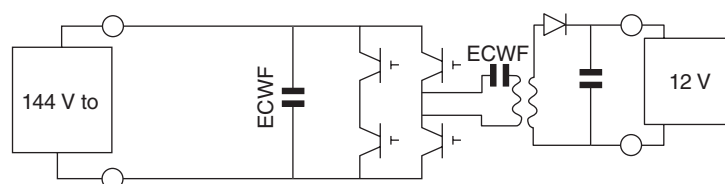


### Microwave oven(IH)

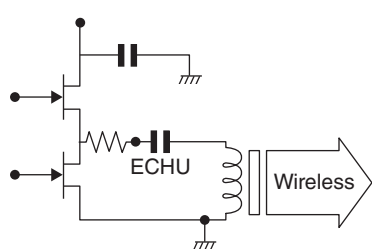


### Automobile

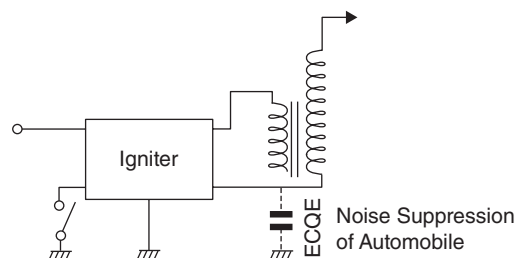
#### Hybrid car DC/DC Converters



#### Smart Keyless



#### Ignition



### Permissible voltage (R.M.S) in alternating current corresponding to DC Rated voltage

1. In case of applying voltage in alternating current (50 Hz or 60 Hz sine wave) to a capacitor, permissible voltage (R.M.S) in alternating current is shown in the following table.
2. Permissible voltage (R.M.S) in alternating current is not an AC rated voltage.
3. The capacitor of DC rating should not be used at the primary side of power supplies.
4. The peak value (zero-to-peak) including pulse of voltage applied capacitor of DC rating should be less than DC rated voltage.  
The permissible pulse current is different in each type of the capacitor, please request the product specifications.
5. Please request the product specifications or consult us about details of permissible voltage (R.M.S) in alternating current.

Type & Series		Rated voltage (V.DC)	Permissible voltage (R.M.S) in alternating current (V.AC)
ECHU(X)	ECHU1C(X)	16	11
	ECHU1H(X)	50	30
ECHU(C)	ECHU1(C)	100	40
ECWU(X)	ECWU1(X)	100	40
ECWU(C)	ECWU1(C)	100	40
	ECWU2(C)	250	125
	ECWUC2J	630	250
ECPU(A)	ECPU1C(A)	16	12
ECQE(F)	ECQE1(F)	100	63
	ECQE2(F)	250	150
	ECQE4(F)	400	200
	ECQE6(F)	630	250
	ECQE10(F)	1000	400
	ECQE12(F)	1250	500
ECQE(B)	ECQE2(B)	250	125
ECQE(T)	ECQE2(T)	250	150
	ECQE4(T)	400	200
	ECQE6(T)	630	250
ECWF(A)	ECWF2(A)	250	125
	ECWF2W(A)	450	84
	ECWFA2J	630	141
ECWFD	ECWFD2W	450	84
	ECWFD2J	630	141
ECWFE	ECWFE2W	450	84
	ECWFE2J	630	141
ECWF(L)	ECWF4(L)	400	141
	ECWF6(L)	630	223
ECWH(A)	ECWH8(A)	800	283
	ECWHA3C	1600	700
ECWH(C)	ECWH6(C)	630	223
	ECWHC3B	1250	450
	ECWHC3F	3000	1060
ECWH(V)	ECWH10(V)	1000	283
	ECWH12(V)	1250	354
	ECWH16(V)	1600	424
	ECWH20(V)	2000	531

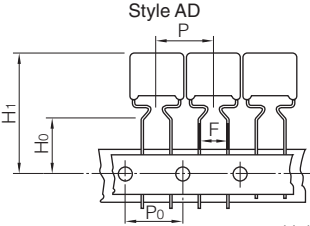
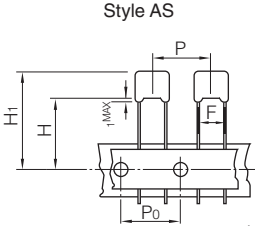
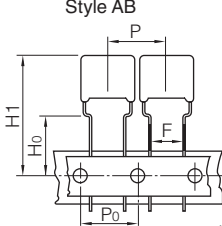


## Taping type

Shape	Name	Specification	Taping style
Radial type	Standard taping	5 mm lead spacing with 12.7 mm body width	AD, AS, AB
	Odd size taping (I)	5 mm, 7.5 mm lead spacing with 15 mm & up body width	B, C, D, E, F
	Odd size taping (II)	Other than above	Please consult
Chip type	Embossed taping	Apply for chip type	8 mm, 12 mm, 16 mm, 24 mm carrier tape

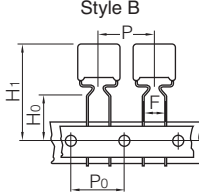
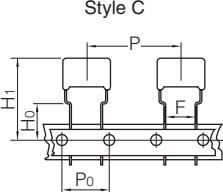
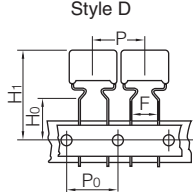
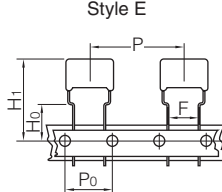
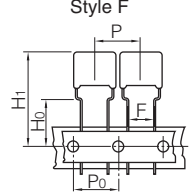
## Radial type taping

### ● Standard taping

					
P	12.7	P	12.7	P	12.7
P <sub>0</sub>	12.7	P <sub>0</sub>	12.7	P <sub>0</sub>	12.7
F	5.0	F	5.0	F	5.0
H <sub>0</sub>	16.0	(H)18.0 — 20.0		H <sub>0</sub>	16.0
H <sub>1</sub>	34.0 max.	34.0 max.		H <sub>1</sub>	34.0 max.

Note : H<sub>1</sub> dimension is based on insertion machine "Panaset RH series" made by Panasonic.  
Consult with Panasonic technical staff when using other insertion machines.

### ● Odd size taping (I)

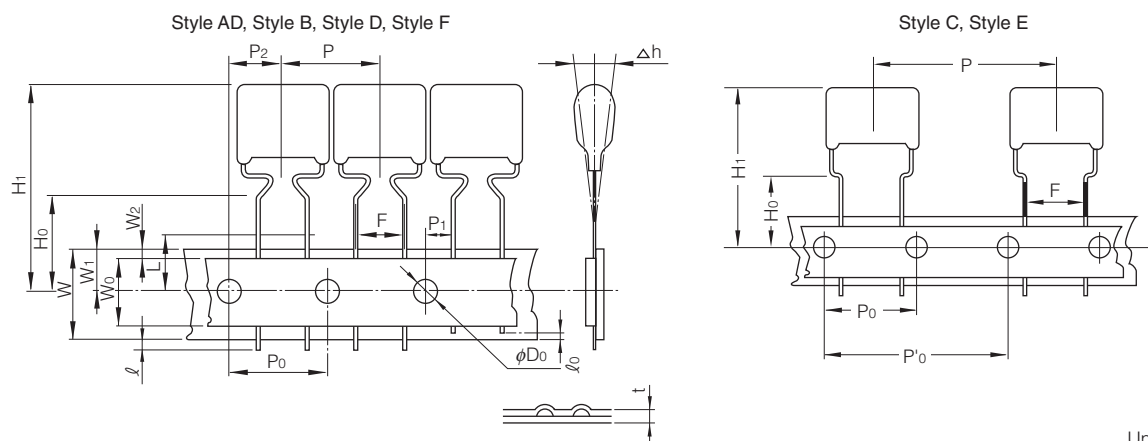
Style B		Style C		Style D		Style E		Style F	
									
Unit : mm		Unit : mm		Unit : mm		Unit : mm		Unit : mm	
P	15.0	25.4		15.0		30.0		15.0	
P <sub>0</sub>	15.0	12.7		15.0		15.0		15.0	
F	5.0	5.0		7.5		7.5		7.5	
H <sub>0</sub>	16.0	16.0		16.0		16.0		16.0	
H <sub>1</sub>	39.0 max	39.0 max.		44.0 max.		44.0 max.		44.0 max.	

Note : H<sub>1</sub> dimension is based on insertion machine "Panaset RH series" made by Panasonic.  
Consult with Panasonic technical staff when using other insertion machines.

### ● Odd size taping (II)

If the specification of taping is changed by various conditions, including, dimensions, lead spacing and insertion machine, please contact the nearest sales office for further information.

## Dimensions



Unit : mm

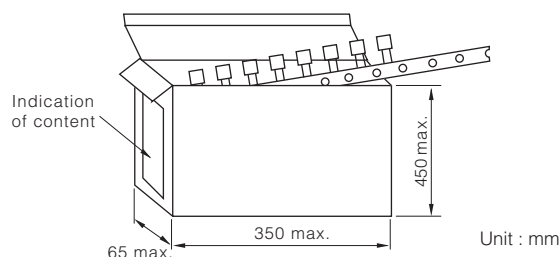
Code	Style AB, AD, AS	Style B	Style C	Style D, F	Style E
P	12.7±1.0	15.0±1.0	25.4±1.0	15.0±1.0	30.0±1.0
P <sub>0</sub>	12.7±0.2	15.0±0.2	12.7±0.2	15.0±0.2	15.0±0.2
P' <sub>0</sub>	—	—	25.4±0.2	—	30.0±0.2
P <sub>1</sub>	3.85±0.50	5.0±0.5	3.85±0.50	3.75±0.50	3.75±0.50
P <sub>2</sub>	6.35±1.30	7.5±1.3	6.35±1.30	7.5±1.3	7.5±1.3
F	5.0 <sup>+0.8</sup> <sub>-0.2</sub>	5.0 <sup>+0.8</sup> <sub>-0.2</sub>	5.0 <sup>+0.8</sup> <sub>-0.2</sub>	7.5 <sup>+0.8</sup> <sub>-0.2</sub>	7.5 <sup>+0.8</sup> <sub>-0.2</sub>
Δh	0±2.0				
W	18.0±0.5				
W <sub>0</sub>	9.5 min.				
W <sub>1</sub>	9.0±0.5				
W <sub>2</sub>	0 — 3.0				
H <sub>0</sub>	16.0±0.5*	16.0±0.5	16.0±0.5	16.0 <sup>+1.0</sup> <sub>0.0</sub>	16.0 <sup>+1.0</sup> <sub>0.0</sub>
H <sub>1</sub>	34.0 max.	39.0 max.	39.0 max.	44.0 max.	44.0 max.
l	0				
l <sub>0</sub>	7.0 max.				
φD <sub>0</sub>	4.0±0.2				
t	0.7±0.2				
L	11.0 max.				

\* Style AS is 18.0 – 20.0 in code H.

Note : H<sub>1</sub> dimension is based on insertion machine "Panaset RH series" made by Panasonic.  
Consult with Panasonic technical staff when using other insertion machines.

## Packing

### Ammo Packing

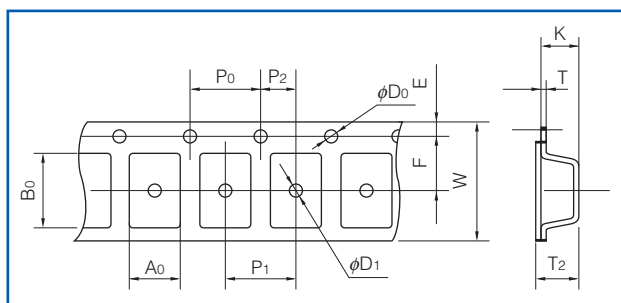


Ammo Box depends on capacitor's dimensions, taping style and quantity.

# Panasonic Taping Specification for Automatic Insertion (Mounting)

## Chip type embossed taping

### ● Embossed taping



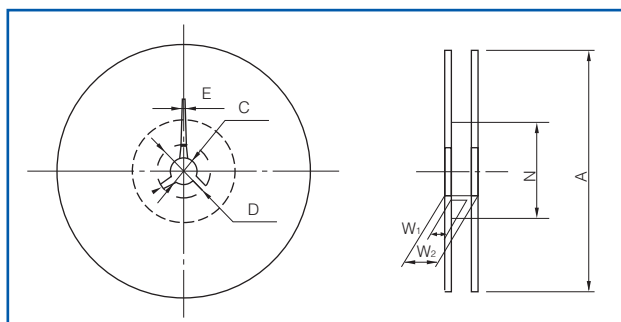
### ● Standard packaging quantities

Size code	Reel	Quantity
K1	ϕ180	4000 pcs/reel
J1, J2, H1, H2	ϕ180	3000 pcs/reel
H3, G1, G2, G3	ϕ180	2000 pcs/reel
E1, E2, D1, D2	ϕ330	3000 pcs/reel
E3a, E3, D3, D4, D5	ϕ330	2000 pcs/reel
B, Z	ϕ330	1500 pcs/reel
X, Y, V	ϕ330	1000 pcs/reel

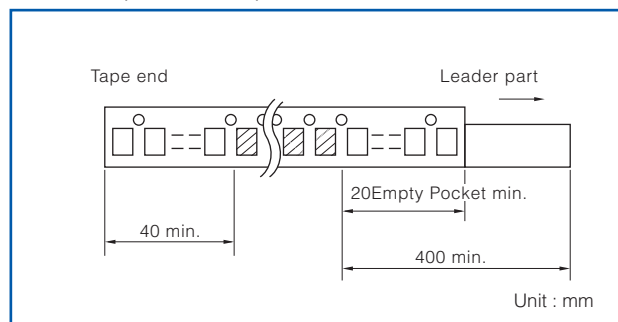
Size code	Dimensions (mm)												
	A <sub>0</sub> ±0.10	B <sub>0</sub> ±0.10	W±0.3	F±0.05	E±0.10	P <sub>1</sub> ±0.1	P <sub>2</sub> ±0.05	P <sub>0</sub> ±0.1	ϕD <sub>0</sub> <sup>+0.1</sup> <sub>0</sub>	ϕD <sub>1</sub> <sup>+0.2</sup> <sub>0</sub>	T±0.05	T <sub>2</sub> ±0.2	K±0.1
K1	1.00	1.85	8.0	3.50	1.75	4.0	2.00	4.0	1.5	1.0	0.25	1.0	0.9
J1	1.55	2.30										1.3	1.2
J2	1.55	2.30										1.5	1.4
H1, H2	1.90	3.50										1.5	1.4
H3	1.90	3.50										1.9	1.8
G1, G2	2.80	3.50										1.9	1.8
G3	2.80	3.50	12.0	5.50	1.75	8.0	2.00	4.0	1.5	1.5	0.30	2.5	2.4
E1	3.80	5.10										2.0	1.9
E2	3.80	5.10										2.6	2.5
E3a, E3	3.80	5.10										3.4	3.3
D1, D2	4.60	6.30										2.7	2.6
D3, D4	4.60	6.30										3.5	3.4
D5	4.60	6.30	12.0	5.50	1.75	8.0	2.00	4.0	1.5	-	0.30	4.6	4.5
B	5.50	6.30										5.1	5.0
Z	5.50	7.50										4.7	4.6

Size code	Dimensions (mm)												
	A <sub>0</sub> ±0.1	B <sub>0</sub> ±0.1	W <sup>+0.3</sup> <sub>-0.1</sub>	F±0.1	E±0.10	P <sub>1</sub> ±0.1	P <sub>2</sub> ±0.1	P <sub>0</sub> ±0.1	ϕD <sub>0</sub> <sup>+0.10</sup> <sub>0</sub>	ϕD <sub>1</sub> <sup>+0.25</sup> <sub>0</sub>	T±0.02	T <sub>2</sub> ±0.2	K±0.1
X, Y	6.9	8.4	16.0	7.5	1.75	12.0	2.0	4.0	1.50	1.50	0.34	5.7	5.7
V	8.9	10.5										5.9	5.8

### ● Reel dimensions



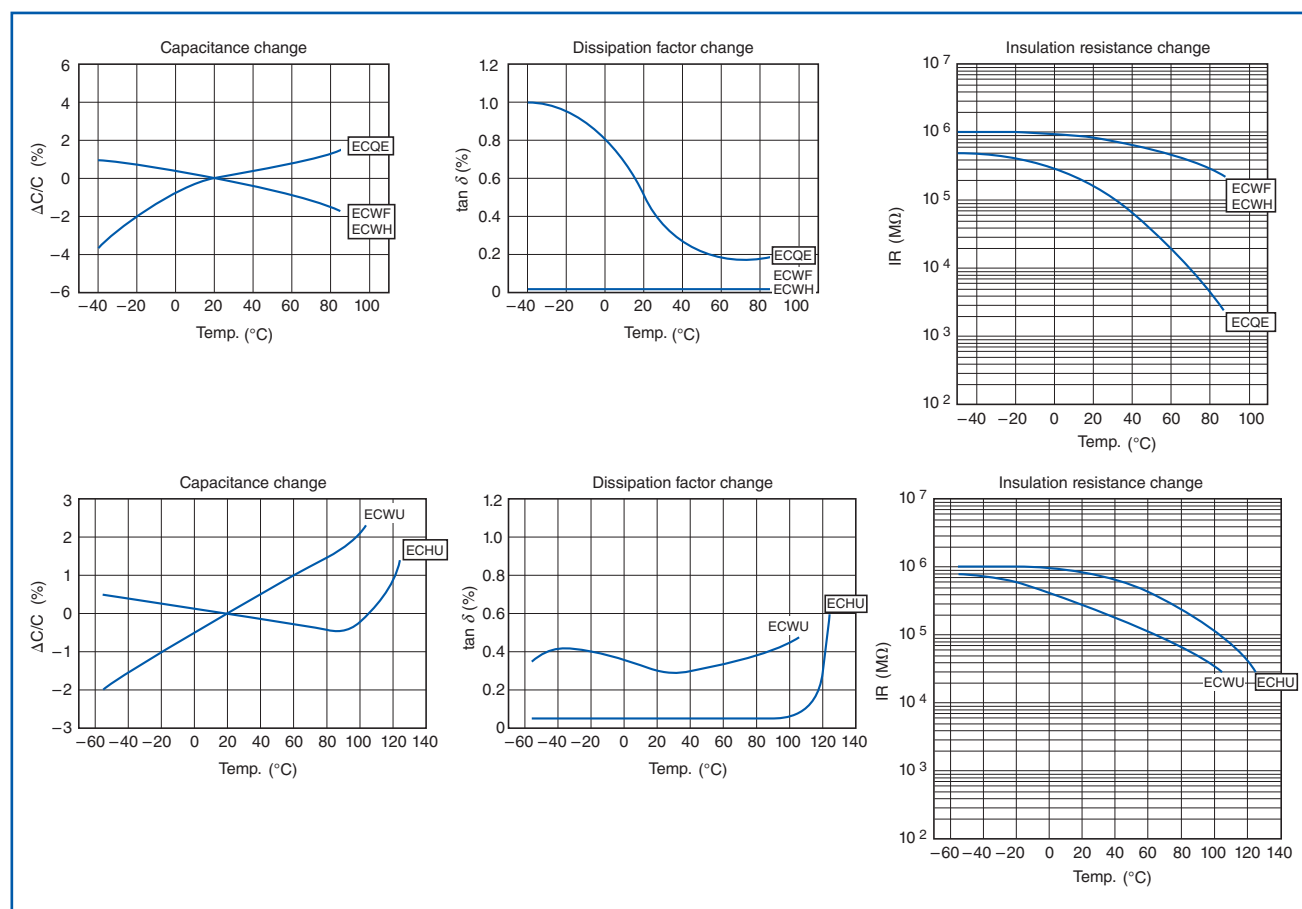
### ● Leader part and tape end



Code	Dimensions (mm)		
	Reel size ϕ180		Reel size ϕ330
	Tape width 8		Tape width 12      Tape width 16
A	180.0 <sup>0</sup> <sub>-1.5</sub>		330.0±2.0
C	13.0±0.2		13.0±0.2
D	21.0±0.8		21.0±0.8
E	2.0±0.5		2.0±0.5
N	60.0 <sup>+1.0</sup> <sub>0</sub>		80.0±1.0
W <sub>1</sub>	9.0 <sup>+1.0</sup> <sub>0</sub>		13.4±1.0      17.4±1.0
W <sub>2</sub>	11.4±1.0		17.4±1.0      21.4±1.0

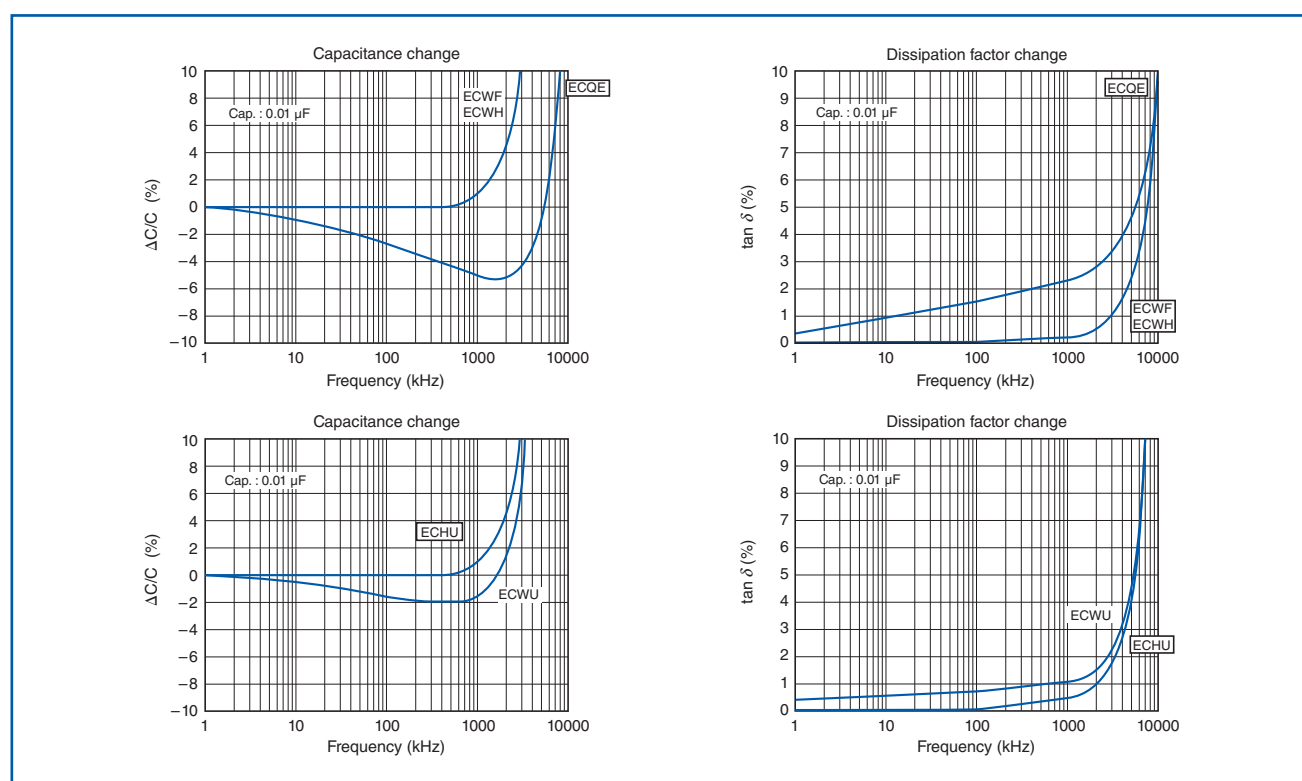
## Temperature characteristics

Typical curve



## Frequency Characteristics

Typical curve



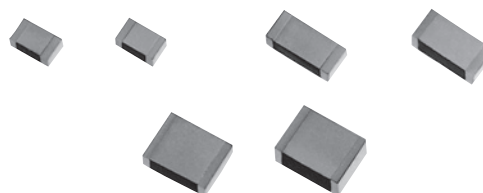
Dielectric	PPS						PEN										Thermoset resin	
Type	ECHU(X)				ECHU(C)		ECWU(C)						ECWU(C)V16		ECWU(X)		ECPU(A)	
Rated. volt	16 V.DC		50 V.DC*		100 V.DC		100 V.DC*		250 V.DC*		630 V.DC*		250 V.DC		100 V.DC		16 V.DC	
Category/temp. range	-55 °C to +125 °C				-55 °C to +105 °C		-55 °C to +125 °C						-55 °C to +85 °C		-55 °C to +105 °C		-40 °C to +85 °C	
Cap. tol.	±2 %, ±5 %						±5 %, ±10 %				±5 %		±5 %				±20 %	
Soldering	Reflow						Reflow										Reflow	
Cap.	Size code	H	Size code	H	Size code	H	Size code	H	Size code	H	Size code	H	Size code	H	Size code	H	Size code	H
0.00010	1608	0.7	2012	0.9														
0.00012	1608	0.7	2012	0.9														
0.00015	1608	0.7	2012	0.9														
0.00018	1608	0.7	2012	0.9														
0.00022	1608	0.7	2012	0.9														
0.00027	1608	0.7	2012	0.9														
0.00033	1608	0.7	2012	0.9														
0.00039	1608	0.7	2012	0.9														
0.00047	1608	0.7	2012	0.9														
0.00056	1608	0.7	2012	0.9														
0.00068	1608	0.7	2012	0.9														
0.00082	1608	0.7	2012	0.9														
0.0010	1608	0.7	2012	0.9														
0.0012	1608	0.7	2012	0.9														
0.0015	1608	0.7	2012	0.9														
0.0018	1608	0.7	2012	0.9														
0.0022	1608	0.7	2012	0.9														
0.0027	1608	0.7	2012	0.9														
0.0033	2012	0.9	3216	0.9														
0.0039	2012	0.9	3216	0.9														
0.0047	2012	0.9	3216	0.9														
0.0056	2012	0.9	3216	0.9														
0.0068	2012	0.9	3216	0.9														
0.0082	2012	1.1	3216	1.1														
0.010	2012	1.1	3216	1.1	4833	1.4												
0.012	3216	0.9	3225	1.1	4833	1.4	4833	1.4	4833	1.4								
0.015	3216	0.9	3225	1.1	4833	2.0	4833	1.4	4833	1.4								
0.018	3216	0.9	3225	1.5	4833	2.0	4833	1.4	4833	2.0								
0.022	3216	0.9	3225	1.5	4833	2.4	4833	1.4	4833	2.0	7163	3.6	4833	2.0				
0.027	3216	1.1	3225	1.5	4833	2.8	4833	1.4	4833	2.4	7163	4.1	4833	2.4				
0.033	3216	1.1	3225	2.1	6041	1.8	4833	1.4	4833	2.8	7163	5.1	4833	2.8				
0.039	3216	1.5	3225	2.1	6041	2.0	4833	1.4	6041	2.0								
0.047	3216	1.5	4833	1.5	6041	2.4	4833	2.0	6041	2.4								
0.056	3225	1.5	4833	1.5	6041	2.8	4833	2.0	6041	2.8								
0.068	3225	1.5	4833	1.5	6041	3.2	4833	2.4	6041	3.2								
0.082	3225	2.1	4833	2.1	7150	2.8	4833	2.8	6050	3.2								
0.10	3225	2.1	4833	2.1	7150	3.0	6041	1.8	6050	3.8								
0.12			6041	1.9	7150	3.4	6041	2.4	6050	4.5								
0.15			6041	1.9	7163	3.4	6041	2.8										
0.18			6041	2.5	7163	4.0	7150	2.0										
0.22			6041	2.8	7163	4.8	7150	2.4										
0.27							7150	2.9										
0.33							7150	3.5										
0.39							7755	3.4										
0.47							7755	4.0										
0.56							9863	3.0										
0.68							9863	3.6										
0.82							9863	4.3										
1.0							9863	5.1										

\* Please confirm in the individual page because the specifications depend on the partial capacitance.

## 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
- Audio circuit

### Explanation of part number

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

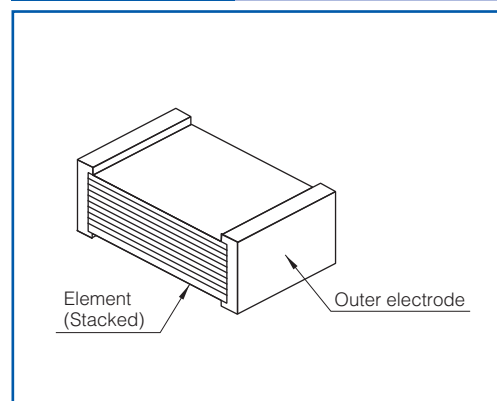
### Specifications

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 ( $\mu$ 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

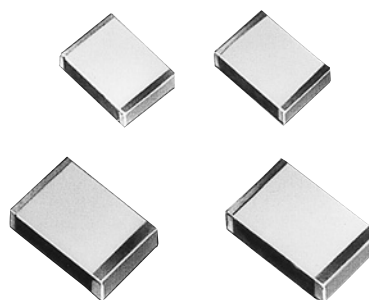
Size code		Land dimensions		
		Reflow soldering		
		A	B	C
K1		0.6	2.0	0.7
J1, J2		0.8	2.4	1.1
H1, H2, H3		1.8	3.6	1.4
G1, G2, G3		1.8	3.6	2.3
E1, E2		3.0	5.6	3.0
D1, D3, D4		4.0	7.0	3.8

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

## Stacked Metallized PPS Film Chip Capacitor

Type : **ECHU(C)**

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



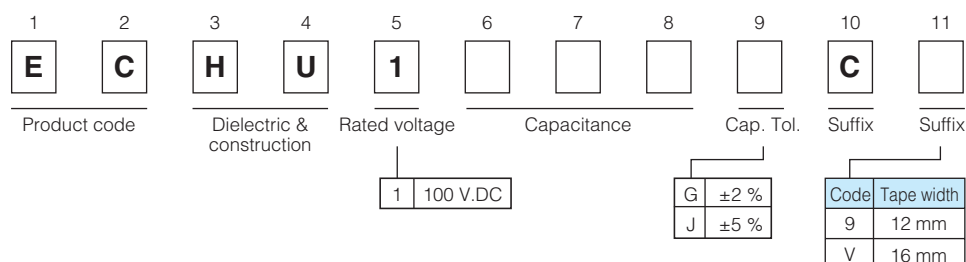
### Features

- Small in size
- Low loss and excellent frequency characteristics
- For reflow soldering
- RoHS directive compliant

### Recommended applications

- Time-constant
- Filtering
- Oscillation and resonance
- Resonance circuit for LCD backlight inverter unit

### Explanation of part number



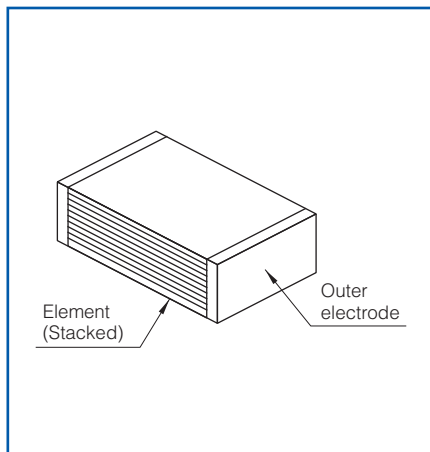
### Specifications

Category temp. range (Including temperature-rise on unit surface)	- 55 °C to +105 °C
Rated voltage	100 V.DC
Capacitance range	0.010 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)	IR ≥ 3000 MΩ (20 °C, 100 V.DC, 60 s)
Soldering conditions	Reflow soldering : 260 °C max. and 95 sec max. at more than 220 °C (Temp. at capacitor surface)

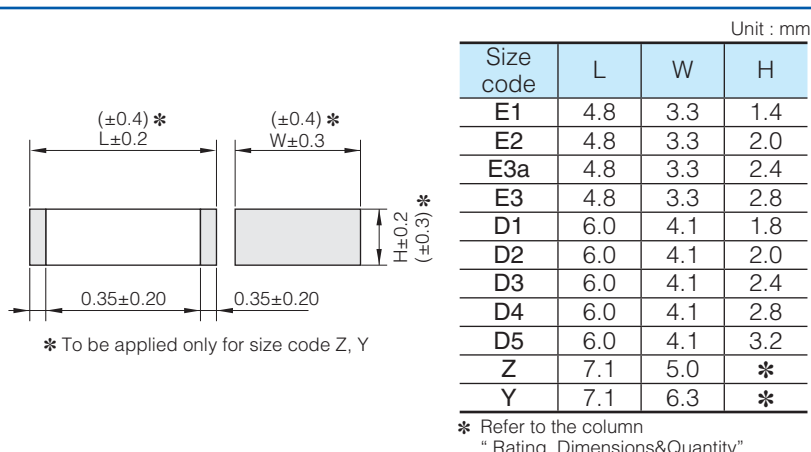
\* In case of applying voltage in alternating current (50 Hz or 60 Hz sine wave) to a capacitor with DC rated voltage, please refer to the page of "Permissible voltage (R.M.S) in alternating current corresponding to DC rated voltage".



## Construction



## Dimensions



## Taping specification for automatic mounting

Refer to the page of taping specifications

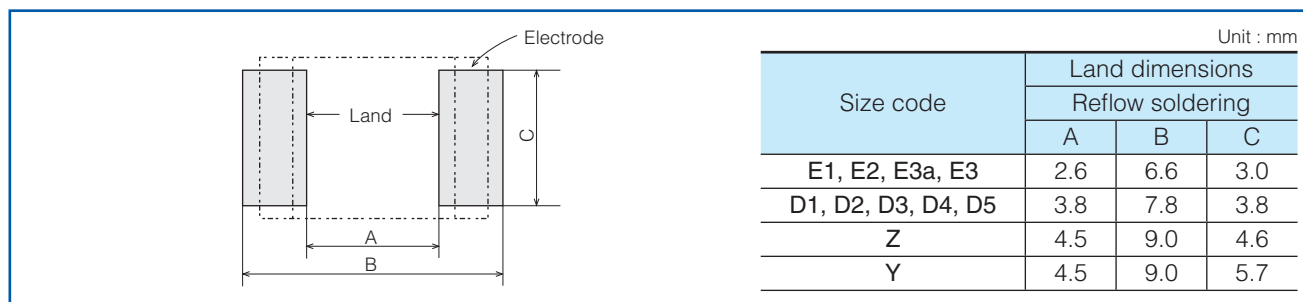
## Rating · Dimensions · Quantity

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

Capacitance (μF)	Rated voltage 100 V.DC					Q'ty
	Part No.	Dimensions (mm)			Size code	
		L	W	H		
0.010	ECHU1103□C9	4.8	3.3	1.4	E1	3000
0.012	ECHU1123□C9	4.8	3.3	1.4	E1	
0.015	ECHU1153□C9	4.8	3.3	2.0	E2	
0.018	ECHU1183□C9	4.8	3.3	2.0	E2	
0.022	ECHU1223□C9	4.8	3.3	2.4	E3a	2000
0.027	ECHU1273□C9	4.8	3.3	2.8	E3	
0.033	ECHU1333□C9	6.0	4.1	1.8	D1	3000
0.039	ECHU1393□C9	6.0	4.1	2.0	D2	
0.047	ECHU1473□C9	6.0	4.1	2.4	D3	2000
0.056	ECHU1563□C9	6.0	4.1	2.8	D4	
0.068	ECHU1683□C9	6.0	4.1	3.2	D5	
0.082	ECHU1823□C9	7.1	5.0	2.8	Z	
0.10	ECHU1104□C9	7.1	5.0	3.0	Z	1500
0.12	ECHU1124□C9	7.1	5.0	3.4	Z	
0.15	ECHU1154□CV	7.1	6.3	3.4	Y	1000
0.18	ECHU1184□CV	7.1	6.3	4.0	Y	
0.22	ECHU1224□CV	7.1	6.3	4.8	Y	

\* □ : Capacitance tolerance code

## Recommended for land dimensions



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

## Stacked Metallized PEN Film Chip Capacitor

Type : **ECWU(X)**



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

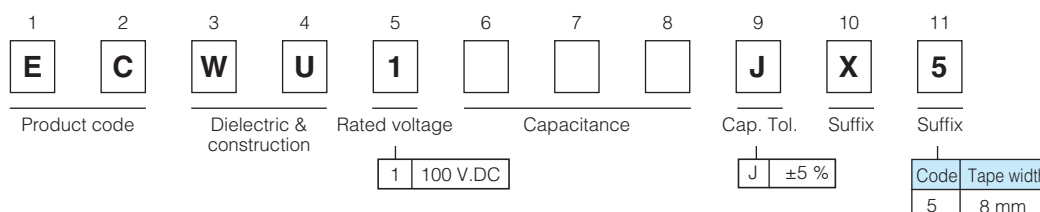
### Features

- Small in size (minimum size 3.2 mm × 1.6 mm)
- 85 °C, 85 %RH, W.V. × 1.0 for 500 hours
- For reflow soldering
- RoHS directive compliant

### Recommended applications

- General purpose (Coupling, By-pass)

### Explanation of part number

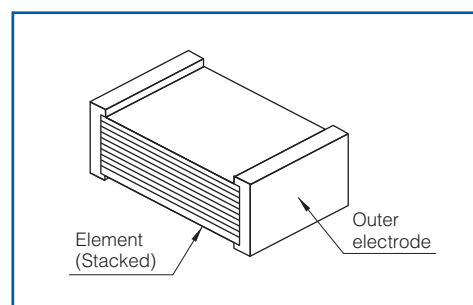


### Specifications

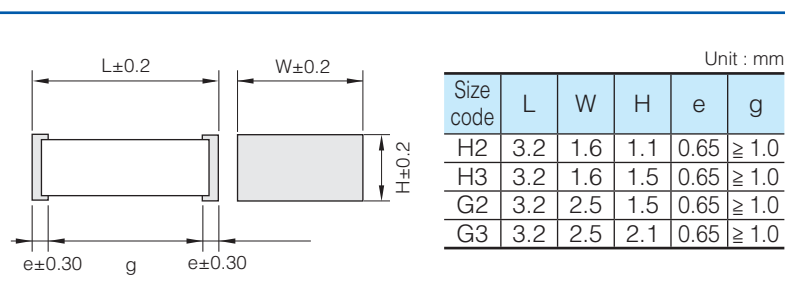
Category temp. range (Including temperature-rise on unit surface)	– 55 °C to +105 °C
Rated voltage	100 V.DC
Capacitance range	0.0010 μF to 0.010 μF (E12)
Capacitance tolerance	±5 % (J)
Dissipation factor (tan δ)	tan δ ≤ 1.0 % ( 20 °C, 1 kHz )
Withstand voltage	Between terminals : Rated volt. (V.DC) × 150 %, 60 s
Insulation resistance (IR)	IR ≥ 3000 MΩ (20 °C, 100 V.DC, 60 s)
Soldering conditions	Reflow soldering : 250 °C max. and 60 s max. at more than 220 °C (Temp. at capacitor 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



## Taping specification for automatic mounting

Refer to the page of taping specifications

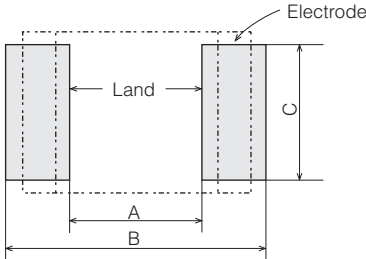
## Rating · Dimensions · Quantity

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

Capacitance (μF)	Rated voltage 100 V.DC					Q'ty
	Part No.	Dimensions (mm)			Size code	
		L	W	H		
0.0010	ECWU1102JX5	3.2	1.6	1.1	H2	3000
0.0012	ECWU1122JX5	3.2	1.6	1.1	H2	
0.0015	ECWU1152JX5	3.2	1.6	1.1	H2	
0.0018	ECWU1182JX5	3.2	1.6	1.1	H2	
0.0022	ECWU1222JX5	3.2	1.6	1.1	H2	
0.0027	ECWU1272JX5	3.2	1.6	1.1	H2	
0.0033	ECWU1332JX5	3.2	1.6	1.5	H3	2000
0.0039	ECWU1392JX5	3.2	1.6	1.5	H3	
0.0047	ECWU1472JX5	3.2	1.6	1.5	H3	
0.0056	ECWU1562JX5	3.2	2.5	1.5	G2	
0.0068	ECWU1682JX5	3.2	2.5	1.5	G2	
0.0082	ECWU1822JX5	3.2	2.5	2.1	G3	
0.010	ECWU1103JX5	3.2	2.5	2.1	G3	

cap.  $\geq 0.012 \mu\text{F}$  : Please use 100 V.DC rating of ECWU(C)

## Recommended for land dimensions

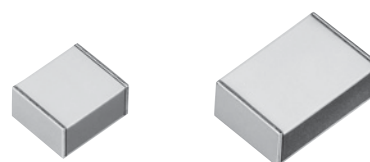
		Unit : mm		
		Land dimensions		
		Reflow soldering		
Size code		A	B	C
		A	B	C
H2, H3		1.8	3.6	1.4
G2, G3		1.8	3.6	2.3

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

## Stacked Metallized PEN Film Chip Capacitor

Type : **ECWU(C)**

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



### Features

- Small in size
- For reflow soldering
- RoHS directive compliant

### Recommended applications

- General purpose (Coupling, By-pass)

### Explanation of part number

1	2	3	4	5	6	7	8	9	10	11	12
E	C	W	U							C	
Product code		Dielectric & construction		Rated voltage		Capacitance			Cap. Tol.	Suffix	Suffix
				1 100 V.DC					J ±5 %		Code Tape width
				2 250 V.DC					K ±10 %		9 12 mm
											V 16 mm

1	2	3	4	5	6	7	8	9	10	11
E	C	W	U	1	1	0	4	V	3	3
Product code		Dielectric & construction		Rated voltage		Capacitance		Suffix		
				1 100 V.DC						Small in size, Cap. Tol. : ±5 %, Tape width : 12 mm

1	2	3	4	5	6	7	8	9	10	11	12
E	C	W	U	C	2	J				J	V
Product code		Dielectric & construction		Suffix	Rated voltage	Capacitance			Cap. Tol.	Suffix	
					2J 630 V.DC				J ±5 %		Code Tape width
											V 16 mm

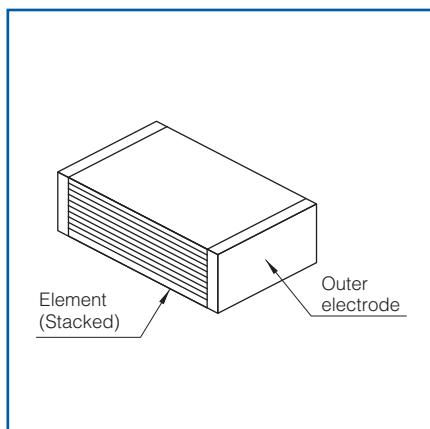
### Specifications

Category temp. range (Including temperature-rise on unit surface)	- 55 °C to +125 °C	
Rated voltage	100 V.DC, 250 V.DC, 630 V.DC (Derating of rated voltage by 1.25 %/°C more than 85 °C)	
Capacitance range	100 V.DC	0.012 µF to 1.0 µF (E12)
	250 V.DC	0.0010 µF to 0.12 µF (E12)
	630 V.DC	0.022 µF, 0.027 µF, 0.033 µF
Capacitance tolerance	100 V.DC	±5 % (J), ±10 % (K) (C ≥ 0.18 µF : ±10 % (K) Only)
	250 V.DC	±5 % (J), ±10 % (K)
	630 V.DC	±5 % (J)
Dissipation factor (tan δ)	tan δ ≤ 1.0 % (20 °C, 1 kHz)	
Withstand voltage	Between terminals : Rated volt. (V.DC) × 150 %, 60 s	
Insulation resistance (IR)	C ≤ 0.33 µF	100 V.DC, 250 V.DC, 630 V.DC : IR ≥ 3000 MΩ (20 °C, 100 V.DC, 60 s)
	C > 0.33 µF	100 V.DC : IR ≥ 1000 MΩ·µF (20 °C, 100 V.DC, 60 s)
Soldering conditions	100 V.DC	Reflow soldering : 250 °C max. and 60 s max. at more than 220 °C (Temp. at capacitor surface)
	250 V.DC	
	630 V.DC	Reflow soldering : 250 °C max. and 60 s to 150 s. at more than 217 °C (Temp. at cap. surface)

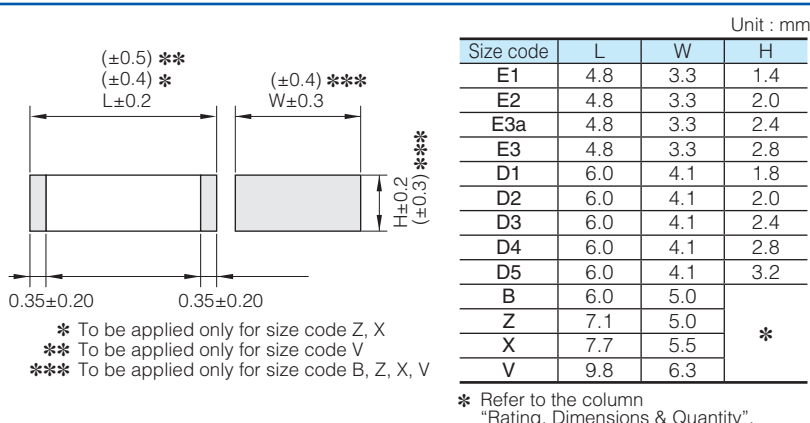
\* In case of applying voltage in alternating current (50 Hz or 60 Hz sine wave) to a capacitor with DC rated voltage, please refer to the page of "Permissible voltage (R.M.S) in alternating current corresponding to DC rated voltage".

\* Please consult us for capacitance range between 0.15 µF and 1.0 µF. (250 V.DC)

## Construction



## Dimensions



## Taping specification for automatic mounting

Refer to the page of taping specifications

## Rating · Dimensions · Quantity

● Capacitance tolerance :  $\pm 5\%$  (J),  $\pm 10\%$  (K)

Capacitance ( $\mu$ F)	Rated voltage 100 V.DC						Rated voltage 250 V.DC					
	Part No.	Dimensions (mm)			Size code	Q'ty	Part No.	Dimensions (mm)			Size code	Q'ty
		L	W	H				L	W	H		
0.0010	Please use 0.001 $\mu$ F to 0.01 $\mu$ F rating ECWU(X)	4.8	3.3	1.4	E1	3000	ECWU2102□C9	4.8	3.3	1.4	E1	3000
0.0012							ECWU2122□C9	4.8	3.3	1.4	E1	
0.0015							ECWU2152□C9	4.8	3.3	1.4	E1	
0.0018							ECWU2182□C9	4.8	3.3	1.4	E1	
0.0022							ECWU2222□C9	4.8	3.3	1.4	E1	
0.0027							ECWU2272□C9	4.8	3.3	1.4	E1	
0.0033							ECWU2332□C9	4.8	3.3	1.4	E1	
0.0039							ECWU2392□C9	4.8	3.3	1.4	E1	
0.0047							ECWU2472□C9	4.8	3.3	1.4	E1	
0.0056							ECWU2562□C9	4.8	3.3	1.4	E1	
0.0068							ECWU2682□C9	4.8	3.3	1.4	E1	
0.0082							ECWU2822□C9	4.8	3.3	1.4	E1	
0.010							ECWU2103□C9	4.8	3.3	1.4	E1	
0.012	ECWU1123□C9	4.8	3.3	1.4	E1	3000	ECWU2123□C9	4.8	3.3	1.4	E1	2000
0.015	ECWU1153□C9	4.8	3.3	1.4	E1		ECWU2153□C9	4.8	3.3	1.4	E1	
0.018	ECWU1183□C9	4.8	3.3	1.4	E1		ECWU2183□C9	4.8	3.3	2.0	E2	
0.022	ECWU1223□C9	4.8	3.3	1.4	E1		ECWU2223□C9	4.8	3.3	2.0	E2	
0.027	ECWU1273□C9	4.8	3.3	1.4	E1		ECWU2273□C9	4.8	3.3	2.4	E3a	
0.033	ECWU1333□C9	4.8	3.3	1.4	E1		ECWU2333□C9	4.8	3.3	2.8	E3	
0.039	ECWU1393□C9	4.8	3.3	1.4	E1		ECWU2393□C9	6.0	4.1	2.0	D2	3000
0.047	ECWU1473□C9	4.8	3.3	2.0	E2		ECWU2473□C9	6.0	4.1	2.4	D3	2000
0.056	ECWU1563□C9	4.8	3.3	2.0	E2	2000	ECWU2563□C9	6.0	4.1	2.8	D4	
0.068	ECWU1683□C9	4.8	3.3	2.4	E3a		ECWU2683□C9	6.0	4.1	3.2	D5	
0.082	ECWU1823□C9	4.8	3.3	2.8	E3	3000	ECWU2823□C9	6.0	5.0	3.2	B	1500
0.10	ECWU1104□C9	6.0	4.1	1.8	D1		ECWU2104□C9	6.0	5.0	3.8	B	
	ECWU1104V33	4.8	3.3	2.8	E3		ECWU2124□C9	6.0	5.0	4.5	B	
0.12	ECWU1124□C9	6.0	4.1	2.4	D3	2000						
0.15	ECWU1154□C9	6.0	4.1	2.8	D4	1500						
0.18	ECWU1184KC9	7.1	5.0	2.0	Z							
0.22	ECWU1224KC9	7.1	5.0	2.4	Z							
0.27	ECWU1274KC9	7.1	5.0	2.9	Z							
0.33	ECWU1334KC9	7.1	5.0	3.5	Z	1000						
0.39	ECWU1394KCV	7.7	5.5	3.4	x							
0.47	ECWU1474KCV	7.7	5.5	4.0	x							
0.56	ECWU1564KCV	9.8	6.3	3.0	V							
0.68	ECWU1684KCV	9.8	6.3	3.6	V							
0.82	ECWU1824KCV	9.8	6.3	4.3	V	1000						
1.0	ECWU1105KCV	9.8	6.3	5.1	V							

\* □ : Capacitance tolerance

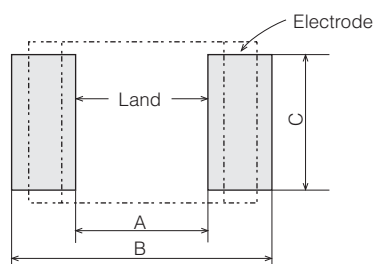
## Rating · Dimensions · Quantity

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

Capacitance (μF)	Rated voltage 630 V.DC					Q'ty
	Part No.	Dimensions (mm)			Size code	
		L	W	H		
0.022	ECWUC2J223JV	7.1	6.3	3.6	Y	1000
0.027	ECWUC2J273JV	7.1	6.3	4.1	Y	
0.033	ECWUC2J333JV	7.1	6.3	5.1	Y	

## Recommended for land dimensions

Unit : mm			
Size code	Land dimensions		
	Reflow soldering		
	A	B	C
E1, E2, E3a, E3	2.6	6.6	3.0
D1, D2, D3, D4, D5	3.8	7.8	3.8
B	3.8	7.8	4.6
Z	4.5	9.0	4.6
Y	4.5	9.0	5.7
X	5.1	9.7	5.0
V	7.2	11.9	5.7



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

## Stacked Metallized PEN Film Chip Capacitor

Type : **ECWU(V16)**

Stacked metallized PEN film dielectric with simple moldless construction



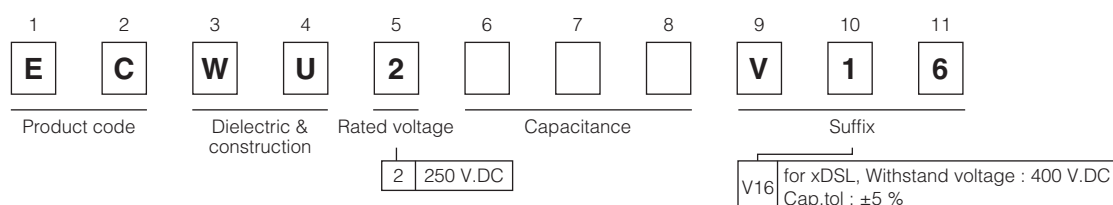
### Features

- Small in size
- For reflow soldering
- RoHS directive compliant

### Recommended applications

- DC Blocking for xDSL

### Explanation of part number



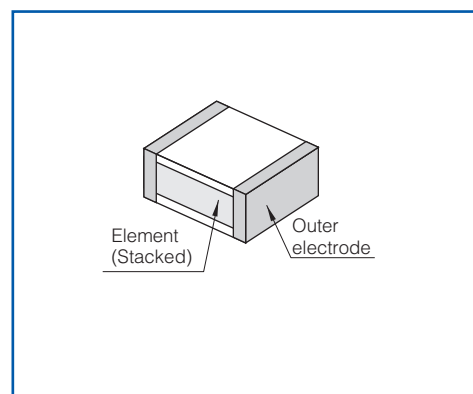
### Specifications

Category temp. range (Including temperature-rise on unit surface)	− 55 °C to +85 °C
Rated voltage	250 V.DC
Capacitance range	0.0010 μF to 0.12 μF (E12)
Capacitance tolerance	±5 % (J)
Dissipation factor (tan δ)	tan δ ≤ 1.0 % ( 20 °C, 1 kHz )
Withstand voltage	Between terminals : 400 V.DC, 60 s
Insulation resistance (IR)	IR ≥ 3000 MΩ (20 °C, 100 V.DC, 60 s)
Soldering conditions	Reflow soldering : 250 °C max. and 60 s max. at more than 220 °C (Temp. at capacitor surface)

\* Application of this capacitor is limited to DC Blocking for xDSL, such as ADSL.

\* Please consult us for 400 V.DC rating product.

### Construction



### Dimensions

Unit : mm			
Size code	L	W	H
E1	4.8	3.3	1.4
E2	4.8	3.3	2.0
E3a	4.8	3.3	2.4
E3	4.8	3.3	2.8
D2	6.0	4.1	2.0
D3	6.0	4.1	2.4
D4	6.0	4.1	2.8
D5	6.0	4.1	3.2
B	6.0	5.0	*

\* To be applied only for size code B

\* Refer to the column "Rating, Dimensions & Quantity".

## Taping specification for automatic mounting

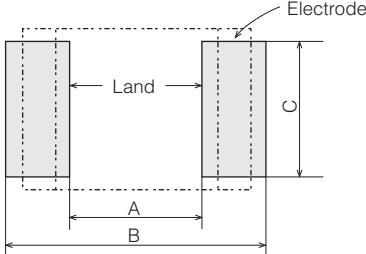
Refer to the page of taping specifications

## Rating · Dimensions · Quantity

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

Capacitance (μF)	Rated voltage 250 V.DC					Q'ty
	Part No.	Dimensions (mm)			Size code	
		L	W	H		
0.0010	ECWU2102V16	4.8	3.3	1.4	E1	3000
0.0012	ECWU2122V16	4.8	3.3	1.4	E1	
0.0015	ECWU2152V16	4.8	3.3	1.4	E1	
0.0018	ECWU2182V16	4.8	3.3	1.4	E1	
0.0022	ECWU2222V16	4.8	3.3	1.4	E1	
0.0027	ECWU2272V16	4.8	3.3	1.4	E1	
0.0033	ECWU2332V16	4.8	3.3	1.4	E1	
0.0039	ECWU2392V16	4.8	3.3	1.4	E1	
0.0047	ECWU2472V16	4.8	3.3	1.4	E1	
0.0056	ECWU2562V16	4.8	3.3	1.4	E1	
0.0068	ECWU2682V16	4.8	3.3	1.4	E1	
0.0082	ECWU2822V16	4.8	3.3	1.4	E1	
0.010	ECWU2103V16	4.8	3.3	1.4	E1	
0.012	ECWU2123V16	4.8	3.3	1.4	E1	
0.015	ECWU2153V16	4.8	3.3	1.4	E1	
0.018	ECWU2183V16	4.8	3.3	2.0	E2	
0.022	ECWU2223V16	4.8	3.3	2.0	E2	
0.027	ECWU2273V16	4.8	3.3	2.4	E3a	2000
0.033	ECWU2333V16	4.8	3.3	2.8	E3	
0.039	ECWU2393V16	6.0	4.1	2.0	D2	3000
0.047	ECWU2473V16	6.0	4.1	2.4	D3	2000
0.056	ECWU2563V16	6.0	4.1	2.8	D4	
0.068	ECWU2683V16	6.0	4.1	3.2	D5	
0.082	ECWU2823V16	6.0	5.0	3.2	B	1500
0.10	ECWU2104V16	6.0	5.0	3.8	B	
0.12	ECWU2124V16	6.0	5.0	4.5	B	

## Recommended for land dimensions

		Unit : mm		
		Land dimensions		
		Reflow soldering		
Size code		A	B	C
E1, E2, E3a, E3		2.6	6.6	3.0
D2, D3, D4, D5		3.8	7.8	3.8
B		3.8	7.8	4.6

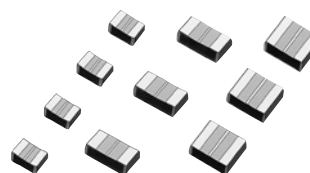
\* It is not warrantable that you can mount the capacitor without trouble under all the mounting condition when "Recommender for Land dimensions" is adopted.



## Stacked Metallized Plastic Film Chip Capacitor

Type : **ECPU(A)**

Stacked dielectric and inner electrode with simple mold - less construction



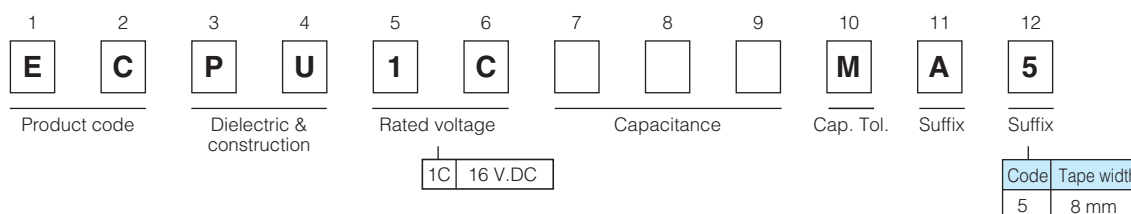
### Features

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

### Recommended applications

- Noise suppressor
- Audio circuit

### Explanation of part number

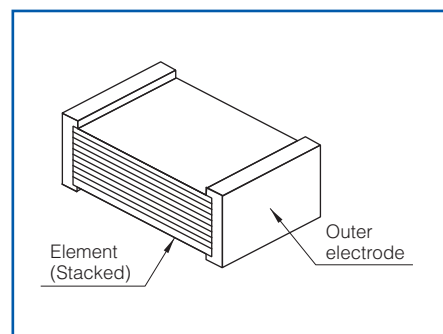


### Specifications

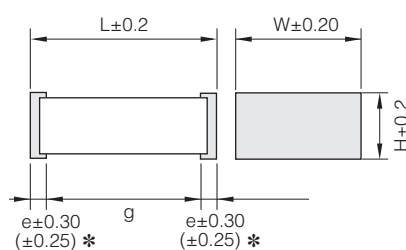
Category temp. range (Including temperature-rise on unit surface)	- 40 °C to +85 °C
Rated voltage	16 V.DC
Capacitance range	0.10 $\mu\text{F}$ to 1.0 $\mu\text{F}$ (E6)
Capacitance tolerance	$\pm 20\%$ (M)
Dissipation factor ( $\tan \delta$ )	$\tan \delta \leq 1.5\%$ ( 20 °C, 1 kHz )
Withstand voltage	Between terminals : Rated volt (V.DC) $\times 150\%$ , 60 s
Insulation resistance (IR)	$C \leq 0.33 \mu\text{F}$ : IR $\geq 1000 \text{ M}\Omega$ (20 °C, 10 V.DC, 60 s) $C > 0.33 \mu\text{F}$ : IR $\geq 300 \text{ M}\Omega \cdot \mu\text{F}$ (20 °C, 10 V.DC, 60 s)
Soldering conditions	Reflow soldering : 240 °C max. and 30 sec max. at more than 220 °C (Temp. at capacitor 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



\* To be applied only for size code J1

Unit : mm					
Size code	L	W	H	e	g
J1	2.0	1.25	1.0	0.45	$\geq 0.6$
H1	3.2	1.6	0.8	0.65	$\geq 1.0$
H2	3.2	1.6	1.0	0.65	$\geq 1.0$
H3	3.2	1.6	1.4	0.65	$\geq 1.0$
G2	3.2	2.5	1.4	0.65	$\geq 1.0$

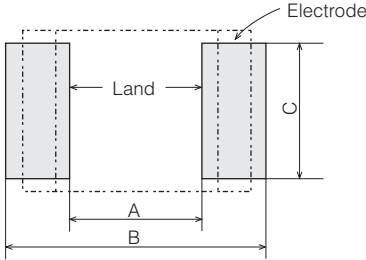
## Taping specification for automatic mounting

Refer to the page of taping specifications

## Rating · Dimensions · Quantity

Capacitance (μF)	Rated voltage 16 V.DC					
	Part No.	Dimensions (mm)			Size code	Q'ty
		L	W	H		
0.10	ECPU1C104MA5	2.0	1.25	1.0	J1	3000
0.15	ECPU1C154MA5	3.2	1.6	0.8	H1	
0.22	ECPU1C224MA5	3.2	1.6	0.8	H1	
0.33	ECPU1C334MA5	3.2	1.6	1.0	H2	
0.47	ECPU1C474MA5	3.2	1.6	1.4	H3	2000
0.68	ECPU1C684MA5	3.2	1.6	1.4	H3	
1.0	ECPU1C105MA5	3.2	2.5	1.4	G2	

## Recommended for land dimensions

		Unit : mm		
		Land dimensions		
		Reflow soldering		
Size code		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.

## Metallized Polyester Film Capacitor

Type : **ECQE(F)**

Non-inductive construction using metallized Polyester film with flame retardant epoxy resin coating



### Features

- Self-healing property
- Excellent electrical characteristics
- Flame retardant epoxy resin coating
- RoHS directive compliant

### Recommended applications

- General purpose usage
  - \* Please contact us when applications are CDI , ignitor etc.

### Explanation of part number

1	2	3	4	5	6	7	8	9	10	11	12
<b>E</b>	<b>C</b>	<b>Q</b>	<b>E</b>							<b>F</b>	
Product code		Dielectric & construction		Rated voltage		Capacitance			Cap. Tol.	Suffix	Suffix
				1	100 V.DC	10	1000 V.DC				
				2	250 V.DC	12	1250 V.DC				
				4	400 V.DC	1A	125 V.AC				
				6	630 V.DC	2A	250 V.AC				
								J	±5 %		
								K	±10 %		
										Code	Lead Form
										Blank	Straight
										B	Crimped lead
										Z	Cut lead
										3	Crimped taping (Ammo)
										6	Crimped taping (Ammo)

- Odd size taping

1	2	3	4	5	6	7	8	9	10	11	12
<b>E</b>	<b>C</b>	<b>Q</b>	<b>E</b>						<b>R</b>		<b>F</b>
Product code		Dielectric & construction		Rated voltage		Capacitance			Suffix	Cap. Tol.	Suffix



## Taping specifications for automatic insertion

### ● Taping style

<b>Style AD</b> 	<b>Style AB</b> 	<b>Style B</b> 
<b>Style C</b> 	<b>Style D</b> 	<b>Style E</b> 

\* Refer to the page of taping specifications.

### ● Packaging specifications

Type	Rated voltage	Capacitance range (μF)	Taping style							Packing	suffix
			AD	AS	AB	B	C	D	E		
ECQE(F)	100 V.DC	0.56 to 0.68	○							Ammo	( ) F3
		0.82 to 1.0				○				Ammo	( ) F3
		1.2 to 3.3					○			Ammo	( ) F3
		1.2 to 3.3							○	Ammo	R( ) F
	250 V.DC	0.010 to 0.27	○							Ammo	( ) F3
		0.33				○				Ammo	( ) F3
		0.39 to 1.5					○			Ammo	( ) F3
		0.010 to 0.33						○		Ammo	R( ) F
		0.39 to 1.5							○	Ammo	R( ) F
	400 V.DC	0.010 to 0.10	○							Ammo	( ) F3
		0.12 to 0.47					○			Ammo	( ) F3
		0.010 to 0.10						○		Ammo	R( ) F
		0.12 to 0.47							○	Ammo	R( ) F
	630 V.DC	0.0010 to 0.033	○							Ammo	( ) F3
		0.039 to 0.047				○				Ammo	( ) F3
		0.056 to 0.22					○			Ammo	( ) F3
		0.001 to 0.047						○		Ammo	R( ) F
		0.056 to 0.22							○	Ammo	R( ) F
	1000 V.DC	0.010 to 0.10							○	Ammo	R( ) F
	1250 V.DC	0.0010 to 0.022							○	Ammo	R( ) F
	125 V.AC	0.010 to 0.068			○					Ammo	( ) F6
		0.010 to 0.068						○		Ammo	R( ) F
	250 V.AC	0.010 to 0.033			○					Ammo	( ) F6
		0.010 to 0.047						○		Ammo	R( ) F
		0.056 to 0.22							○	Ammo	R( ) F

### ● Lead spacing

Style	Lead spacing
AD	5.0 mm
AB	5.0 mm
B	5.0 mm
C	5.0 mm
D	7.5 mm
E	7.5 mm

\* See the column "Rating · Dimensions · Quantity" for packing quantity

## Rating · Dimensions · Quantity

● Rated voltage : 100 V.DC, Capacitance tolerance :  $\pm 5\%$  (J),  $\pm 10\%$  (K)

Part No.	Cap. ( $\mu$ F)	Dimensions (mm)								Min. order Q'ty			
		L max.	T max.	H max.		F	S	G max.	$\phi$ d	Taping			Bulk
				Straight	Crimped lead					Standard 5 mm	Odd size 5 mm	Odd size 7.5 mm	
ECQE1564□F( )	0.56	12.0	5.5	10.9	15.9	10.0	10.0	1.0	0.6	500	—	—	500
ECQE1684□F( )	0.68	12.0	6.0	11.9	16.9	10.0	10.0	1.0	0.6		—	—	
ECQE1824□F( )	0.82	12.0	6.0	13.5	18.5	10.0	10.0	1.0	0.6	—	1,000	—	
ECQE1105□F( )	1.0	12.0	6.7	14.0	19.0	10.0	10.0	1.0	0.6		500	600	
ECQE1125□F( )	1.2	18.5	5.5	12.8	17.8	15.0	10.0	1.0	0.6			500	
ECQE1155□F( )	1.5	18.5	6.0	13.4	18.4	15.0	10.0	1.0	0.8		400	400	
ECQE1185□F( )	1.8	18.5	6.5	14.4	19.4	15.0	10.0	1.0	0.8			—	
ECQE1225□F( )	2.2	18.5	7.0	15.0	20.0	15.0	10.0	1.0	0.8		—	—	
ECQE1275□F( )	2.7	18.5	8.0	15.8	20.8	15.0	10.0	1.0	0.8			—	
ECQE1335□F( )	3.3	18.5	8.5	16.5	21.5	15.0	10.0	1.0	0.8		—	—	
ECQE1395□F( )	3.9	26.0	7.0	16.4	21.4	22.5	15.0	1.0	0.8			—	
ECQE1475□F( )	4.7	26.0	7.5	17.0	22.0	22.5	15.0	1.0	0.8		—	—	
ECQE1565□F( )	5.6	26.0	8.3	17.5	22.5	22.5	15.0	1.0	0.8			—	
ECQE1685□F( )	6.8	26.0	9.0	18.5	23.5	22.5	15.0	1.0	0.8	—	—	—	
ECQE1825□F( )	8.2	26.0	10.0	20.0	25.0	22.5	15.0	1.5	0.8			—	
ECQE1106□F( )	10.0	26.0	11.5	21.0	26.0	22.5	15.0	1.5	0.8			—	

\* □ : Capacitance tolerance code  
( ) : Suffix for lead crimped or taped type

Type D : 0.56  $\mu$ F to 1.0  $\mu$ F  
Type B : 1.2  $\mu$ F to 10.0  $\mu$ F

## Rating · Dimensions · Quantity

● Rated voltage : 250 V.DC, Capacitance tolerance :  $\pm 5\%$  (J),  $\pm 10\%$  (K)

Part No.	Cap. ( $\mu$ F)	Dimensions (mm)								Min. order Q'ty					
		L max.	T max.	H max.		F		S	G max.	$\phi$ d	Taping			Bulk	
				Straight	Crimped lead	Straight	Crimped lead	Straight	Standard 5 mm		Odd size 5 mm	Odd size 7.5 mm	Straight	Crimped lead	
ECQE2103□F( )	0.010	10.3	4.3	7.4	12.4	7.5	7.5	1.0	0.6	1000	—	1000	500	500	
ECQE2123□F( )	0.012	10.3	4.4	7.5	12.5	7.5	7.5	1.0	0.6						
ECQE2153□F( )	0.015	10.3	4.4	7.5	12.5	7.5	7.5	1.0	0.6						
ECQE2183□F( )	0.018	10.3	4.4	7.5	12.5	7.5	7.5	1.0	0.6						
ECQE2223□F( )	0.022	10.3	4.4	7.5	12.5	7.5	7.5	1.0	0.6						
ECQE2273□F( )	0.027	10.3	4.4	7.5	12.5	7.5	7.5	1.0	0.6						
ECQE2333□F( )	0.033	10.3	4.5	7.5	12.5	7.5	7.5	1.0	0.6						
ECQE2393□F( )	0.039	10.3	4.5	7.5	12.5	7.5	7.5	1.0	0.6						
ECQE2473□F( )	0.047	10.3	4.5	7.5	12.5	7.5	7.5	1.0	0.6						
ECQE2563□F( )	0.056	10.3	4.8	7.9	12.9	7.5	7.5	1.0	0.6						
ECQE2683□F( )	0.068	10.3	4.5	7.5	12.5	7.5	7.5	1.0	0.6						
ECQE2823□F( )	0.082	10.3	4.9	8.0	13.0	7.5	7.5	1.0	0.6						
ECQE2104□F( )	0.10	10.3	5.8	8.4	13.4	7.5	7.5	1.0	0.6	500					
ECQE2124□F( )	0.12	10.3	6.0	9.0	14.0	7.5	7.5	1.0	0.6						
ECQE2154□F( )	0.15	10.3	6.0	10.8	15.8	7.5	7.5	1.0	0.6						
ECQE2184□F( )	0.18	12.0	5.0	10.3	15.3	10.0	10.0	1.0	0.6						
ECQE2224□F( )	0.22	12.0	5.5	10.5	15.5	10.0	10.0	1.0	0.6						
ECQE2274□F( )	0.27	12.0	6.0	11.5	16.5	10.0	10.0	1.0	0.6						
ECQE2334□F( )	0.33	12.0	6.5	12.0	17.0	10.0	10.0	1.0	0.6	—	1000	500			
ECQE2394□F( )	0.39	18.5	4.9	12.0	17.0	15.0	10.0	1.0	0.6						
ECQE2474□F( )	0.47	18.5	5.3	12.5	17.5	15.0	10.0	1.0	0.6						
ECQE2564□F( )	0.56	18.5	5.5	13.0	18.0	15.0	10.0	1.0	0.6						
ECQE2684□F( )	0.68	18.5	6.0	13.5	18.5	15.0	10.0	1.0	0.8						
ECQE2824□F( )	0.82	18.5	6.5	14.5	19.5	15.0	10.0	1.0	0.8						
ECQE2105□F( )	1.0	18.5	7.4	15.0	20.0	15.0	10.0	1.0	0.8						
ECQE2125□F( )	1.2	18.5	8.0	15.9	20.9	15.0	10.0	1.0	0.8						
ECQE2155□F( )	1.5	18.5	9.0	16.8	21.8	15.0	10.0	1.0	0.8						
ECQE2185□F( )	1.8	26.0	7.5	15.5	20.5	22.5	15.0	1.0	0.8						
ECQE2225□F( )	2.2	26.0	8.5	16.3	21.3	22.5	15.0	1.0	0.8						
ECQE2275□F( )	2.7	26.0	9.4	17.0	22.0	22.5	15.0	1.0	0.8						
ECQE2335□F( )	3.3	26.0	10.3	18.0	23.0	22.5	15.0	1.5	0.8	—	—	—			
ECQE2395□F( )	3.9	26.0	11.0	20.5	25.5	22.5	15.0	1.5	0.8						
ECQE2475□F( )	4.7	26.0	12.0	21.5	26.5	22.5	15.0	1.5	0.8						
ECQE2565□F( )	5.6	31.0	11.8	21.0	26.0	27.5	22.5	1.5	0.8						
ECQE2685□F( )	6.8	31.0	13.0	22.4	27.4	27.5	22.5	1.5	0.8						
ECQE2825□F( )	8.2	31.0	14.3	23.5	28.5	27.5	22.5	1.5	0.8						
ECQE2106□F( )	10.0	31.0	15.9	25.8	30.8	27.5	22.5	1.5	0.8						

\* □ : Capacitance tolerance code  
( ) : Suffix for lead crimped or taped type

Type D : 0.010  $\mu$ F to 0.33  $\mu$ F  
Type B : 0.39  $\mu$ F to 10.0  $\mu$ F

## Rating · Dimensions · Quantity

● Rated voltage : 400 V.DC, Capacitance tolerance :  $\pm 5\%$ (J),  $\pm 10\%$ (K)

Part No.	Cap. (μF)	Dimensions (mm)								Min. order Q'ty				
		L max.	T max.	H max.		F		S	G max.	ød	Taping			Bulk
				Straight	Crimped lead	Straight	Crimped lead	Straight	Standard 5 mm		Odd size 5 mm	Odd size 7.5 mm	Straight · Crimped lead	
ECQE4103□F( )	0.010	10.3	4.3	7.4	12.4	7.5	7.5	1.0	0.6	1000	—	1000	500	
ECQE4123□F( )	0.012	10.3	4.4	7.5	12.5	7.5	7.5	1.0	0.6					
ECQE4153□F( )	0.015	10.3	4.4	7.5	12.5	7.5	7.5	1.0	0.6					
ECQE4183□F( )	0.018	10.3	4.4	7.5	12.5	7.5	7.5	1.0	0.6					
ECQE4223□F( )	0.022	10.3	4.8	7.9	12.9	7.5	7.5	1.0	0.6					
ECQE4273□F( )	0.027	10.3	5.5	8.0	13.0	7.5	7.5	1.0	0.6					
ECQE4333□F( )	0.033	10.3	6.0	9.0	14.0	7.5	7.5	1.0	0.6	500	—	1000	500	
ECQE4393□F( )	0.039	12.0	4.9	8.0	13.0	10.0	10.0	1.0	0.6					
ECQE4473□F( )	0.047	12.0	5.0	8.3	13.3	10.0	10.0	1.0	0.6					
ECQE4563□F( )	0.056	12.0	5.0	10.0	15.0	10.0	10.0	1.0	0.6					
ECQE4683□F( )	0.068	12.0	5.4	10.5	15.5	10.0	10.0	1.0	0.6					
ECQE4823□F( )	0.082	12.0	5.8	11.0	16.0	10.0	10.0	1.0	0.6					
ECQE4104□F( )	0.10	12.0	6.3	12.0	17.0	10.0	10.0	1.0	0.6	—	500	500	500	
ECQE4124□F( )	0.12	18.5	5.0	10.0	15.0	15.0	10.0	1.0	0.6					
ECQE4154□F( )	0.15	18.5	5.0	12.4	17.4	15.0	10.0	1.0	0.6					
ECQE4184□F( )	0.18	18.5	5.4	12.5	17.5	15.0	10.0	1.0	0.6					
ECQE4224□F( )	0.22	18.5	5.9	13.0	18.0	15.0	10.0	1.0	0.6					
ECQE4274□F( )	0.27	18.5	6.5	14.3	19.3	15.0	10.0	1.0	0.8					
ECQE4334□F( )	0.33	18.5	7.0	14.9	19.9	15.0	10.0	1.0	0.8					
ECQE4394□F( )	0.39	18.5	7.5	15.4	20.4	15.0	10.0	1.0	0.8					
ECQE4474□F( )	0.47	18.5	7.8	17.0	22.0	15.0	10.0	1.0	0.8					
ECQE4564□F( )	0.56	26.0	6.5	16.0	21.0	22.5	15.0	1.0	0.8					
ECQE4684□F( )	0.68	26.0	7.0	16.5	21.5	22.5	15.0	1.0	0.8					
ECQE4824□F( )	0.82	26.0	7.9	17.3	22.3	22.5	15.0	1.0	0.8					
ECQE4105□F( )	1.0	26.0	8.5	18.0	23.0	22.5	15.0	1.0	0.8					
ECQE4125□F( )	1.2	26.0	9.5	18.9	23.9	22.5	15.0	1.0	0.8					
ECQE4155□F( )	1.5	31.0	9.5	19.0	24.0	27.5	22.5	1.0	0.8					
ECQE4185□F( )	1.8	31.0	11.0	20.5	25.5	27.5	22.5	1.5	0.8					
ECQE4225□F( )	2.2	31.0	11.0	22.0	27.0	27.5	22.5	1.5	0.8					

\* □ : Capacitance tolerance code  
( ) : Suffix for lead crimped or taped type

Type D : 0.010  $\mu$ F to 0.10  $\mu$ F  
Type B : 0.12  $\mu$ F to 2.2  $\mu$ F

## Rating · Dimensions · Quantity

● Rated voltage : 630 V.DC, Capacitance tolerance :  $\pm 5\%$ (J),  $\pm 10\%$ (K)

Part No.	Cap. (μF)	Dimensions (mm)								Min. order Q'ty				
		L max.	T max.	H max.		F	S	G max.	ϕd	Taping			Bulk	
				Straight	Crimped lead					Standard 5 mm	Odd size 5 mm	Odd size 7.5 mm	Straight	Crimped lead
ECQE6102□F( )	0.0010	10.0	4.5	9.5	14.5	7.5	5.0	1.0	0.6	1000	—	1000	500	500
ECQE6122□F( )	0.0012	10.0	4.5	10.0	15.0	7.5	5.0	1.0	0.6					
ECQE6152□F( )	0.0015	10.0	4.5	10.0	15.0	7.5	5.0	1.0	0.6					
ECQE6182□F( )	0.0018	10.0	4.5	10.0	15.0	7.5	5.0	1.0	0.6					
ECQE6222□F( )	0.0022	10.0	4.5	10.0	15.0	7.5	5.0	1.0	0.6					
ECQE6272□F( )	0.0027	10.0	4.5	10.0	15.0	7.5	5.0	1.0	0.6					
ECQE6332□F( )	0.0033	10.0	4.5	10.0	15.0	7.5	5.0	1.0	0.6					
ECQE6392□F( )	0.0039	10.0	4.5	10.0	15.0	7.5	5.0	1.0	0.6					
ECQE6472□F( )	0.0047	12.0	4.5	10.0	15.0	10.0	7.5	1.0	0.6					
ECQE6562□F( )	0.0056	12.0	4.5	10.0	15.0	10.0	7.5	1.0	0.6					
ECQE6682□F( )	0.0068	12.0	4.9	10.0	15.0	10.0	7.5	1.0	0.6					
ECQE6822□F( )	0.0082	12.0	4.5	10.0	15.0	10.0	7.5	1.0	0.6					
ECQE6103□F( )	0.010	12.0	4.5	7.5	12.5	10.0	10.0	1.0	0.6					
ECQE6123□F( )	0.012	12.0	4.5	7.8	12.8	10.0	10.0	1.0	0.6					
ECQE6153□F( )	0.015	12.0	5.0	8.2	13.2	10.0	10.0	1.0	0.6					
ECQE6183□F( )	0.018	12.0	4.9	10.0	15.0	10.0	10.0	1.0	0.6					
ECQE6223□F( )	0.022	12.0	5.3	10.5	15.5	10.0	10.0	1.0	0.6					
ECQE6273□F( )	0.027	12.0	5.5	10.9	15.9	10.0	10.0	1.0	0.6					
ECQE6333□F( )	0.033	12.0	6.0	11.9	16.9	10.0	10.0	1.0	0.6	500	—	1000	500	500
ECQE6393□F( )	0.039	12.0	6.0	13.4	18.4	10.0	10.0	1.0	0.6	500				
ECQE6473□F( )	0.047	12.0	6.5	13.5	18.5	10.0	10.0	1.0	0.6					
ECQE6563□F( )	0.056	18.5	5.4	10.5	15.5	15.0	10.0	1.0	0.6					
ECQE6683□F( )	0.068	18.5	5.8	11.0	16.0	15.0	10.0	1.0	0.6					
ECQE6823□F( )	0.082	18.5	6.5	12.0	17.0	15.0	10.0	1.0	0.6					
ECQE6104□F( )	0.10	18.5	6.3	14.0	19.0	15.0	10.0	1.0	0.6					
ECQE6124□F( )	0.12	18.5	6.3	14.5	19.5	15.0	10.0	1.0	0.8					
ECQE6154□F( )	0.15	18.5	7.5	15.4	20.4	15.0	10.0	1.0	0.8					
ECQE6184□F( )	0.18	18.5	8.0	16.0	21.0	15.0	10.0	1.0	0.8					
ECQE6224□F( )	0.22	18.5	9.0	16.5	21.5	15.0	10.0	1.0	0.8					
ECQE6274□F( )	0.27	26.0	7.0	16.5	21.5	22.5	15.0	1.0	0.8					
ECQE6334□F( )	0.33	26.0	7.8	17.0	22.0	22.5	15.0	1.0	0.8					
ECQE6394□F( )	0.39	26.0	8.5	17.9	22.9	22.5	15.0	1.0	0.8					
ECQE6474□F( )	0.47	26.0	9.3	18.5	23.5	22.5	15.0	1.0	0.8					
ECQE6564□F( )	0.56	26.0	10.0	20.0	25.0	22.5	15.0	1.5	0.8					
ECQE6684□F( )	0.68	26.0	11.5	21.0	26.0	22.5	15.0	1.5	0.8					
ECQE6824□F( )	0.82	31.0	11.3	20.5	25.5	27.5	22.5	1.5	0.8					
ECQE6105□F( )	1.0	31.0	12.5	21.9	26.9	27.5	22.5	1.5	0.8					
ECQE6125□F( )	1.2	31.0	13.5	23.0	28.0	27.5	22.5	1.5	0.8					
ECQE6155□F( )	1.5	31.0	15.3	24.7	29.7	27.5	22.5	1.5	0.8	400				
ECQE6185□F( )	1.8	31.0	16.8	27.0	32.0	27.5	22.5	1.5	0.8	300	400			
ECQE6225□F( )	2.2	31.0	19.5	29.0	34.0	27.5	22.5	1.5	0.8		300			

\* □ : Capacitance tolerance code  
( ) : Suffix for lead crimped or taped type

Type D : 0.010  $\mu$ F to 0.047  $\mu$ F  
Type B : 0.0010  $\mu$ F to 0.0082  $\mu$ F  
0.056  $\mu$ F to 2.2  $\mu$ F



## Rating · Dimensions · Quantity

● Rated voltage : 1000 V.DC, Note) 125 V.AC, Capacitance tolerance :  $\pm 5\%$  (J),  $\pm 10\%$  (K)

Part No.	Cap. (μF)	Dimensions (mm)								Min. order Q'ty	
		L max.	T max.	H max.		F	S	G max.	ød	Taping	Bulk
				Straight	Crimped lead	Straight	Crimped lead	Straight		7.5 mm	Straight · Crimped lea
ECQE10103□F( )	0.010	15.5	6.0	11.0	16.0	12.5	12.5	1.0	0.6	500	500
ECQE10123□F( )	0.012	15.5	6.0	12.0	17.0	12.5	12.5	1.0	0.6		
ECQE10153□F( )	0.015	15.5	7.0	12.5	17.5	12.5	12.5	1.0	0.6		
ECQE10183□F( )	0.018	15.5	7.5	13.0	20.0	12.5	12.5	1.0	0.8	400	
ECQE10223□F( )	0.022	15.5	7.5	15.5	22.5	12.5	12.5	1.0	0.8		
ECQE10273□F( )	0.027	21.0	6.0	13.0	18.0	17.5	12.5	1.0	0.8	500	
ECQE10333□F( )	0.033	21.0	6.5	14.0	19.0	17.5	12.5	1.0	0.8		
ECQE10393□F( )	0.039	21.0	7.0	14.5	19.5	17.5	12.5	1.0	0.8		
ECQE10473□F( )	0.047	21.0	7.5	15.5	20.5	17.5	12.5	1.0	0.8	400	
ECQE10563□F( )	0.056	21.0	7.5	17.0	22.0	17.5	12.5	1.0	0.8		
ECQE10683□F( )	0.068	21.0	8.5	18.0	23.0	17.5	12.5	1.0	0.8		
ECQE10823□F( )	0.082	21.0	9.0	18.5	23.5	17.5	12.5	1.0	0.8	300	
ECQE10104□F( )	0.10	21.0	10.0	20.0	25.0	17.5	12.5	1.0	0.8		
ECQE10124□F( )	0.12	26.0	9.0	18.5	23.5	22.5	17.5	1.0	0.8	—	
ECQE10154□F( )	0.15	26.0	10.0	20.0	25.0	22.5	17.5	1.5	0.8		
ECQE10184□F( )	0.18	26.0	10.5	22.0	27.0	22.5	17.5	1.5	0.8		
ECQE10224□F( )	0.22	26.0	12.0	23.0	28.0	22.5	17.5	1.5	0.8		

\* □ : Capacitance tolerance code  
( ) : Suffix for lead crimped or taped type

Type D : 0.010  $\mu$ F to 0.022  $\mu$ F  
Type B : 0.027  $\mu$ F to 0.22  $\mu$ F

Note) This type has two rated voltage, one is DC rated voltage another is AC rated voltage..  
DC rated voltage is 1000 V.DC, AC rated voltage is 125 V.AC.  
Making for rated voltage is "1000 V, 125 V  $\sim$ "

When capacitors use in secondary side of power source, and in case of applying voltage in altering current (50 Hz or 60 Hz sine wave) to a capacitor, please refer to the page of "Permissible voltage (R.M.S) in altering current corresponding to DC rated voltage".

When capacitors use in primary side of power source, the rated voltage is shown 125 V.AC. Voltage to be applied to capacitors in only sine wave (50 Hz or 60 Hz).

AC rated capacitors complying with clause 1 of "Electrical Appliance and Material Safety Law". And not complying with clause 2 of "Electrical Appliance and Material Safety Law", in this case please use ECQUA type or ECQUL type.

## Rating · Dimensions · Quantity

● Rated voltage : 1250 V.DC, (Note) 125 V.AC, Capacitance tolerance :  $\pm 5\%$  (J),  $\pm 10\%$  (K)

Part No.	Cap. (μF)	Dimensions (mm)								Min. order Q'ty						
		L max.	T max.	H max.		F	S	G max.	φd	Taping	Bulk					
				Straight	Crimped lead	Straight	Crimped lead	Straight		7.5 mm	Straight	Crimped lead				
ECQE12102□F( )	0.0010	15.5	6.0	11.0	16.0	12.5	10.0	1.0	0.6	500	500	500				
ECQE12122□F( )	0.0012	15.5	6.0	11.0	16.0	12.5	10.0	1.0	0.6							
ECQE12152□F( )	0.0015	15.5	6.0	11.0	16.0	12.5	10.0	1.0	0.6							
ECQE12182□F( )	0.0018	15.5	6.0	11.0	16.0	12.5	10.0	1.0	0.6							
ECQE12222□F( )	0.0022	15.5	6.0	11.5	16.5	12.5	10.0	1.0	0.6							
ECQE12272□F( )	0.0027	15.5	6.5	12.0	17.0	12.5	10.0	1.0	0.6							
ECQE12332□F( )	0.0033	15.5	6.0	11.5	16.5	12.5	10.0	1.0	0.6							
ECQE12392□F( )	0.0039	15.5	6.5	12.0	17.0	12.5	10.0	1.0	0.6							
ECQE12472□F( )	0.0047	15.5	7.0	12.5	17.5	12.5	10.0	1.0	0.6							
ECQE12562□F( )	0.0056	15.5	7.5	13.0	18.0	12.5	10.0	1.0	0.6	400						
ECQE12682□F( )	0.0068	15.5	7.5	15.0	20.0	12.5	10.0	1.0	0.6							
ECQE12822□F( )	0.0082	21.0	5.0	12.0	17.0	17.5	12.5	1.0	0.6							
ECQE12103□F( )	0.010	21.0	5.0	12.5	17.5	17.5	12.5	1.0	0.6	500			500	500		
ECQE12123□F( )	0.012	21.0	5.5	13.0	18.0	17.5	12.5	1.0	0.6							
ECQE12153□F( )	0.015	21.0	6.0	13.5	18.5	17.5	12.5	1.0	0.6							
ECQE12183□F( )	0.018	21.0	6.5	14.5	19.5	17.5	12.5	1.0	0.8							
ECQE12223□F( )	0.022	21.0	7.0	15.0	20.0	17.5	12.5	1.0	0.8							
ECQE12273□F( )	0.027	26.0	6.0	15.5	20.5	22.5	17.5	1.0	0.8							
ECQE12333□F( )	0.033	26.0	6.5	16.0	21.0	22.5	17.5	1.0	0.8	-					500	500
ECQE12393□F( )	0.039	26.0	7.0	16.5	21.5	22.5	17.5	1.0	0.8							
ECQE12473□F( )	0.047	26.0	8.0	17.0	22.0	22.5	17.5	1.0	0.8							
ECQE12563□F( )	0.056	31.0	7.5	17.0	22.0	27.5	22.5	1.0	0.8							
ECQE12683□F( )	0.068	31.0	8.0	17.5	22.5	27.5	22.5	1.0	0.8							
ECQE12823□F( )	0.082	31.0	9.0	18.5	23.5	27.5	22.5	1.0	0.8							
ECQE12104□F( )	0.10	31.0	10.0	19.5	24.5	27.5	22.5	1.0	0.8							
ECQE12124□F( )	0.12	31.0	11.5	20.5	25.5	27.5	22.5	1.5	0.8							
ECQE12154□F( )	0.15	31.0	12.0	23.0	28.0	27.5	22.5	1.5	0.8							
ECQE12184□F( )	0.18	31.0	13.0	24.5	29.5	27.5	22.5	1.5	0.8							
ECQE12224□F( )	0.22	31.0	14.5	26.5	31.5	27.5	22.5	1.5	0.8							

\* □ : Capacitance tolerance code  
( ) : Suffix for lead crimped or taped type

Type D : 0.0010  $\mu$ F to 0.0068  $\mu$ F  
Type B : 0.0082  $\mu$ F to 0.22  $\mu$ F

Note) This type has two rated voltage, one is DC rated voltage another is AC rated voltage.  
DC rated voltage is 1250 V.DC, AC rated voltage is 125 V.AC.  
Making for rated voltage is "1250 V, 125 V  $\sim$ "

When capacitors use in secondary side of power source, and in case of applying voltage in altering current (50 Hz or 60 Hz sine wave) to a capacitor, please refer to the page of "Permissible voltage (R.M.S) in altering current corresponding to DC rated voltage".

When capacitors use in primary side of power source, the rated voltage is shown 125 V.AC. Voltage to be applied to capacitors in only sine wave (50 Hz or 60 Hz).

AC rated capacitors complying with clause 1 of "Electrical Appliance and Material Safety Law". And not complying with clause 2 of "Electrical Appliance and Material Safety Law", in this case please use ECQUA type or ECQUL type.

## Rating · Dimensions · Quantity

- Rated voltage : 125 V.AC, Capacitance tolerance :  $\pm 5\%$  (J),  $\pm 10\%$  (K)  
Noise suppression Capacitors (Across-the-line)

Part No.	Cap. ( $\mu$ F)	Dimensions (mm)								Min. order Q'ty			
		L max.	T max.	H max.		F	S	G max.	$\phi$ d	Taping			Bulk
				Straight	Crimped lead	Straight	Crimped lead	Straight		Standard 5 mm	Odd size 5 mm	Odd size 7.5 mm	Straight Crimped lead
ECQE1A103□F( )	0.010	10.5	4.5	7.5	12.5	7.5	7.5	1.0	0.6	1000	—	1000	500
ECQE1A123□F( )	0.012	10.5	4.4	7.5	12.5	7.5	7.5	1.0	0.6				
ECQE1A153□F( )	0.015	10.5	4.4	7.5	12.5	7.5	7.5	1.0	0.6				
ECQE1A183□F( )	0.018	10.5	4.4	7.5	12.5	7.5	7.5	1.0	0.6				
ECQE1A223□F( )	0.022	10.5	4.4	7.5	12.5	7.5	7.5	1.0	0.6				
ECQE1A273□F( )	0.027	10.5	4.4	7.5	12.5	7.5	7.5	1.0	0.6				
ECQE1A333□F( )	0.033	10.5	4.5	7.8	12.8	7.5	7.5	1.0	0.6				
ECQE1A393□F( )	0.039	10.5	4.5	7.8	12.8	7.5	7.5	1.0	0.6	500			
ECQE1A473□F( )	0.047	10.5	5.5	8.0	13.0	7.5	7.5	1.0	0.6				
ECQE1A563□F( )	0.056	10.5	5.9	8.5	13.5	7.5	7.5	1.0	0.6				
ECQE1A683□F( )	0.068	10.5	6.3	9.4	14.4	7.5	7.5	1.0	0.6				

\* □ : Capacitance tolerance code

( ) : Suffix for lead crimped or taped type

Type D : 0.010  $\mu$ F to 0.068  $\mu$ F

### Notice for AC rated

AC rated capacitors complying with clause 1 of "Electrical Appliance and Material Safety Law".

As for clause 2 of "Electrical Appliance and Material Safety Law", please use ECQUA type or ECQUL type.

When using these capacitors as a across-the-line capacitor, it shall be required to follow either item 1. or item 2. condition.

1. Capacitor shall be connected in parallel with varistor (Specified varistor voltage in table 1.)
2. Voltage applied for capacitor shall not exceed other than specified in table 1, when using these capacitors

Table 1

Capacitor rated voltage	Varistor voltage	Pulse voltage
125 V.AC	250 V	250 V <sub>0-P</sub>

## Rating · Dimensions · Quantity

- Rated voltage : 250 V.AC, Capacitance tolerance :  $\pm 5\%$  (J),  $\pm 10\%$  (K)
- Noise suppression Capacitors (Across-the-line)

Part No.	Cap. (μF)	Dimensions (mm)								Min. order Q'ty															
		L max.	T max.	H max.		F		S	G max.	φd	Taping		Bulk												
				Straight	Crimped lead	Straight	Crimped lead	Straight	Standard 5 mm		Odd size 7.5 mm	Straight	Crimped lead												
ECQE2A103□F( )	0.010	12.5	5.5	10.8	15.8	10.0	10.0	1.0	0.6	500	1000	500													
ECQE2A123□F( )	0.012	12.5	6.0	11.5	16.5	10.0	10.0	1.0	0.6																
ECQE2A153□F( )	0.015	12.5	6.3	9.9	14.9	10.0	10.0	1.0	0.6																
ECQE2A183□F( )	0.018	12.5	6.0	11.9	16.9	10.0	10.0	1.0	0.6																
ECQE2A223□F( )	0.022	12.5	6.0	11.5	16.5	10.0	10.0	1.0	0.6																
ECQE2A273□F( )	0.027	12.5	5.5	10.9	15.9	10.0	10.0	1.0	0.6																
ECQE2A333□F( )	0.033	12.5	6.0	11.9	16.9	10.0	10.0	1.0	0.6																
ECQE2A393□F( )	0.039	12.5	6.0	13.4	18.4	10.0	10.0	1.0	0.6	—				500											
ECQE2A473□F( )	0.047	12.5	6.5	14.4	19.4	10.0	10.0	1.0	0.6																
ECQE2A563□F( )	0.056	18.5	5.4	10.5	15.5	15.0	10.0	1.0	0.6							500									
ECQE2A683□F( )	0.068	18.5	5.8	11.0	16.0	15.0	10.0	1.0	0.6																
ECQE2A823□F( )	0.082	18.5	6.3	12.0	17.0	15.0	10.0	1.0	0.6									400							
ECQE2A104□F( )	0.10	18.5	6.3	14.0	19.0	15.0	10.0	1.0	0.6																
ECQE2A124□F( )	0.12	18.5	6.8	14.5	19.5	15.0	10.0	1.0	0.8									300							
ECQE2A154□F( )	0.15	18.5	7.5	15.4	20.4	15.0	10.0	1.0	0.8																
ECQE2A184□F( )	0.18	18.5	8.0	16.0	21.0	15.0	10.0	1.0	0.8					—											
ECQE2A224□F( )	0.22	18.5	9.0	16.9	21.9	15.0	10.0	1.0	0.8																
ECQE2A274□F( )	0.27	26.0	7.0	16.5	21.5	22.5	15.0	1.0	0.8							300									
ECQE2A334□F( )	0.33	26.0	7.8	17.0	22.0	22.5	15.0	1.0	0.8																
ECQE2A394□F( )	0.39	26.0	8.5	17.9	22.9	22.5	15.0	1.0	0.8													400			
ECQE2A474□F( )	0.47	26.0	9.3	18.5	23.5	22.5	15.0	1.0	0.8																
ECQE2A564P( )( )	0.56	26.0	10.0	20.0	—	22.5	—	1.0	0.8													300			
ECQE2A684P( )( )	0.68	26.0	11.5	21.0	—	22.5	—	1.0	0.8																
ECQE2A824P( )( )	0.82	26.0	13.0	22.5	—	22.5	—	1.0	0.8					400											
ECQE2A105P( )( )	1.0	31.0	12.5	21.9	—	27.5	—	1.5	0.8																
ECQE2A125P( )( )	1.2	31.0	13.5	23.0	—	27.5	—	1.5	0.8					300											
ECQE2A155P( )( )	1.5	31.0	15.3	24.7	—	27.5	—	1.5	0.8																
ECQE2A185P( )( )	1.8	31.0	16.8	27.0	—	27.5	—	1.5	0.8					400											
ECQE2A225P( )( )	2.2	31.0	19.5	29.0	—	27.5	—	1.5	0.8																

\* □ : Capacitance tolerance code  
( ) : Suffix for lead crimped or taped type

Type D : 0.010  $\mu$ F to 0.047  $\mu$ F  
Type B : 0.056  $\mu$ F to 0.47  $\mu$ F

\* Please consult us about Crimped lead type of 0.56  $\mu$ F to 2.2  $\mu$ F.

### Notice for AC rated

AC rated capacitors complying with clause 1 of "Electrical Appliance and Material Safety Law".  
As for clause 2 of "Electrical Appliance and Material Safety Law", please use ECQUA type or ECQUL type.

When using these capacitors as a across-the-line capacitor, it shall be required to follow either item 1. or item 2. condition.

1. Capacitor shall be connected in parallel with varistor (Specified varistor voltage in table 1.)
2. Voltage applied for capacitor shall not exceed other than specified in table 1, when using these capacitors

Table 1

Capacitor rated voltage	Varistor voltage	Pulse voltage
250 V.AC	470 V	630 V <sub>0,P</sub>

## Metallized Polyester Film Capacitor

Type : **ECQE(B)**

Non-inductive construction using metallized polyester film with flame retardant epoxy resin coating



## Features

- Self-healing property
- Small size
- Excellent electrical characteristics
- Flame retardant epoxy resin coating
- RoHS directive compliant

## Recommended applications

- General purpose usage
  - \* Please contact us when applications are CDI, ignitor etc.

### Explanation of part number

1	2	3	4	5	6	7	8	9	10	11	12														
E	C	Q	E							B															
Product code		Dielectric & construction		Rated voltage		Capacitance			Cap. Tol.	Suffix	Suffix														
				<table><tr><td>2</td><td>250 V.DC</td></tr><tr><td>1A</td><td>125 V.AC</td></tr></table>		2	250 V.DC	1A	125 V.AC				<table><tr><td>J</td><td>±5 %</td></tr><tr><td>K</td><td>±10 %</td></tr></table>	J	±5 %	K	±10 %								
2	250 V.DC																								
1A	125 V.AC																								
J	±5 %																								
K	±10 %																								
											<table><tr><th>Code</th><th>Lead Form</th></tr><tr><td>Blank</td><td>Straight</td></tr><tr><td>B</td><td>Crimped lead</td></tr><tr><td>Z</td><td>Cut lead</td></tr><tr><td>2</td><td>Straight taping (Ammo)</td></tr><tr><td>3</td><td>Crimped taping (Ammo)</td></tr><tr><td>6</td><td>Crimped taping (Ammo)</td></tr></table>	Code	Lead Form	Blank	Straight	B	Crimped lead	Z	Cut lead	2	Straight taping (Ammo)	3	Crimped taping (Ammo)	6	Crimped taping (Ammo)
Code	Lead Form																								
Blank	Straight																								
B	Crimped lead																								
Z	Cut lead																								
2	Straight taping (Ammo)																								
3	Crimped taping (Ammo)																								
6	Crimped taping (Ammo)																								

- Odd size taping

1	2	3	4	5	6	7	8	9	10	11	12
<b>E</b>	<b>C</b>	<b>Q</b>	<b>E</b>						<b>R</b>		<b>B</b>
Product code		Dielectric & construction		Rated voltage		Capacitance			Suffix	Cap. Tol.	Suffix

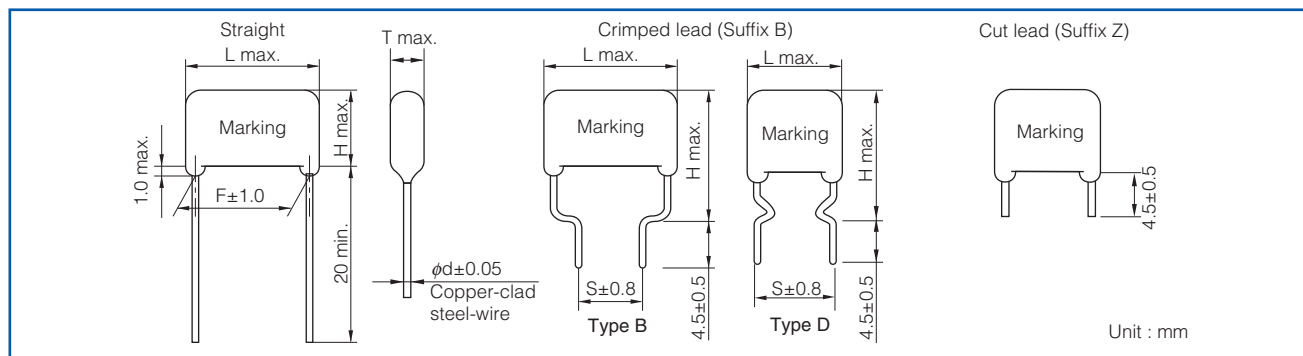
## Specifications

Category temp. range (Including temperature-rise on unit surface)	250 V.DC	- 40 °C to +105 °C
	125 V.AC	- 40 °C to +105 °C
Rated voltage	250 V.DC, 125 V.AC (250 V.DC : Derating of rated voltage by 1.25 %/°C at more than 85 °C)	
Capacitance range	250 V.DC	0.010 μF to 4.7 μF (E12)
	125 V.AC	0.010 μF to 4.7 μF (E12)
Capacitance tolerance	±5 % (J), ±10 % (K)	
Dissipation factor (tan δ)	tan δ ≤ 1.0 % ( 20 °C, 1 kHz )	
Withstand voltage	<ul style="list-style-type: none"> <li>Rated volt. : 250 V.DC Between terminals : Rated volt. (V.DC)×150 %, 60 s</li> </ul>	
	<ul style="list-style-type: none"> <li>Rated volt. : 125 V.AC Between terminals : Rated volt. (V.AC)×230 %, 60 s Between terminals to enclosure : 1500 V.AC, 60 s</li> </ul>	
Insulation resistance (IR)	250 V.DC	C ≤ 0.33 μF : IR ≥ 9000 MΩ (20 °C, 100 V.DC, 60 s) C > 0.33 μF : IR ≥ 3000 MΩ · μF (20 °C, 100 V.DC, 60 s)
	125 V.AC	C ≤ 0.47 μF : IR ≥ 2000 MΩ (20 °C, 500 V.DC, 60 s) C > 0.47 μF : IR ≥ 3000 MΩ · μF (20 °C, 100 V.DC, 60 s)

\* 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".

\* Voltage to be applied to ECQE1A (B) is only sine wave (50 Hz or 60 Hz).

## Dimensions

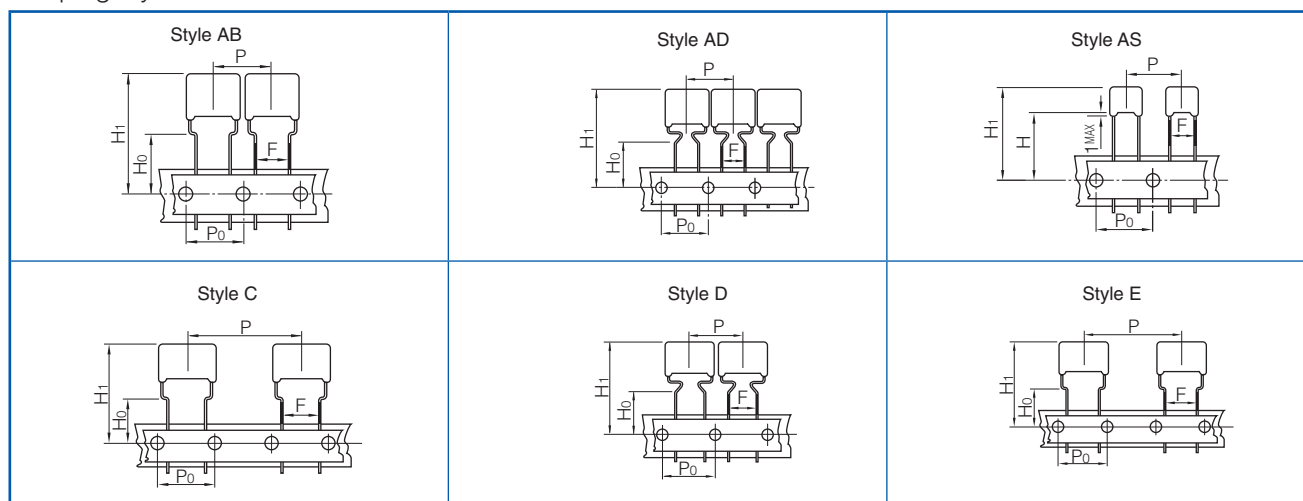


## Packaging specifications for bulk package

- Packing quantity : 100 pcs./bag

## Taping specifications for automatic insertion

- Taping style



\* Refer to the page of taping specifications.

- Packaging specifications

Type	Rated voltage	Capacitance range (μF)	Taping style							Packing	suffix
			AD	AS	AB	B	C	D	E		
ECQE(B)	250 V.DC	0.010 to 0.15		○						Ammo	( ) B2
		0.010 to 0.68	○							Ammo	( ) B3
		0.82 to 1.5					○			Ammo	( ) B3
		0.18 to 0.68						○		Ammo	R( ) B
		0.82 to 4.7							○	Ammo	R( ) B
	125 V.AC	0.010 to 0.068		○						Ammo	( ) B2
		0.082 to 0.22			○					Ammo	( ) B6
		0.27 to 2.7					○			Ammo	( ) B3
		0.082 to 0.68						○		Ammo	R( ) B
		0.82 to 2.7							○	Ammo	R( ) B

- Lead spacing

Style	Lead spacing
AD	5.0 mm
AS	5.0 mm
AB	5.0 mm
C	5.0 mm
D	7.5 mm
E	7.5 mm

\* See the column "Rating · Dimensions · Quantity" for packing quantity

## Rating · Dimensions · Quantity

● Rated voltage : 250 V.DC, Capacitance tolerance :  $\pm 5\%$ (J),  $\pm 10\%$ (K)

Part No.	Cap. (μF)	Dimensions (mm)							Min. order Q'ty																																																						
		L max.	T max.	H max.		F		S	φd	Taping			Bulk																																																		
				Straight	Crimped lead	Straight	Crimped lead			Standard 5 mm	Odd size 5 mm	Odd size 7.5 mm	Straight · Crimped lead																																																		
ECQE2103□B( )	0.010	7.9	4.2	7.1	12.1	5.0	5.0	0.5	2000	-	-	500																																																			
ECQE2123□B( )	0.012	7.9	4.2	7.1	12.1	5.0	5.0	0.5																																																							
ECQE2153□B( )	0.015	7.9	4.2	7.1	12.1	5.0	5.0	0.5																																																							
ECQE2183□B( )	0.018	7.9	4.3	7.2	12.2	5.0	5.0	0.5																																																							
ECQE2223□B( )	0.022	7.9	4.3	7.2	12.2	5.0	5.0	0.5																																																							
ECQE2273□B( )	0.027	7.9	4.3	7.2	12.2	5.0	5.0	0.5																																																							
ECQE2333□B( )	0.033	7.9	4.3	7.2	12.2	5.0	5.0	0.5																																																							
ECQE2393□B( )	0.039	7.9	4.5	7.4	12.4	5.0	5.0	0.5	1500				-	-	500																																																
ECQE2473□B( )	0.047	7.9	4.5	7.4	12.4	5.0	5.0	0.5																																																							
ECQE2563□B( )	0.056	7.9	4.7	7.7	12.7	5.0	5.0	0.5																																																							
ECQE2683□B( )	0.068	7.9	5.1	8.0	13.0	5.0	5.0	0.5																																																							
ECQE2823□B( )	0.082	7.9	5.4	8.6	13.6	5.0	5.0	0.5																																																							
ECQE2104□B( )	0.10	7.9	5.9	9.0	14.0	5.0	5.0	0.5								1000																																															
ECQE2124□B( )	0.12	7.9	5.7	10.6	15.6	5.0	5.0	0.5								1500																																															
ECQE2154□B( )	0.15	7.9	6.3	11.2	16.2	5.0	5.0	0.5	1000																																																						
ECQE2184□B( )	0.18	10.3	5.0	9.7	14.7	7.5	5.0	0.5	1500		-					-	500																																														
ECQE2224□B( )	0.22	10.3	5.4	10.1	15.1	7.5	5.0	0.5										1500																																													
ECQE2274□B( )	0.27	10.3	5.9	10.8	15.8	7.5	5.0	0.5										1000	-	-	500																																										
ECQE2334□B( )	0.33	10.3	6.4	11.3	16.3	7.5	5.0	0.5	1000													-	-	500																																							
ECQE2394□B( )	0.39	12.3	5.7	10.9	15.9	10.0	5.0	0.6																	1000	-	-	500																																			
ECQE2474□B( )	0.47	12.3	6.2	11.4	16.4	10.0	5.0	0.6																					1000	-	-	500																															
ECQE2564□B( )	0.56	12.3	6.7	11.9	16.9	10.0	5.0	0.6																									1000	-	-	500																											
ECQE2684□B( )	0.68	12.3	7.3	12.7	17.7	10.0	5.0	0.6						1000																							-	-	500																								
ECQE2824□B( )	0.82	15.3	6.3	13.3	18.3	12.5	5.0	0.6		1000																														-	-	500																					
ECQE2105□B( )	1.0	15.3	7.0	14.0	19.0	12.5	5.0	0.6										1000																									-	-	500																		
ECQE2125□B( )	1.2	15.3	7.6	14.6	19.6	12.5	5.0	0.6	1000																																					-	-	500															
ECQE2155□B( )	1.5	15.3	8.6	15.7	20.7	12.5	5.0	0.6																	1000																								-	-	500												
ECQE2185□B( )	1.8	20.8	7.6	14.6	19.6	17.5	10.0	0.8																					1000																							-	-	500									
ECQE2225□B( )	2.2	20.8	8.4	15.6	20.6	17.5	10.0	0.8																									1000																						-	-	500						
ECQE2275□B( )	2.7	20.8	9.3	16.7	21.7	17.5	10.0	0.8						1000																																												-	-	500			
ECQE2335□B( )	3.3	20.8	10.5	17.9	22.9	17.5	10.0	0.8		1000			-			-																																													500		
ECQE2395□B( )	3.9	20.8	10.8	19.8	24.8	17.5	10.0	0.8										1000																																												-	-
ECQE2475□B( )	4.7	20.8	11.9	21.0	26.0	17.5	10.0	0.8	1000											-																																											

\* □ : Capacitance tolerance code  
( ) : Suffix for lead crimped or taped type

Type D : 0.010  $\mu$ F to 0.68  $\mu$ F  
Type B : 0.82  $\mu$ F to 4.7  $\mu$ F

## Rating · Dimensions · Quantity

● Rated voltage : 125 V.AC, Capacitance tolerance :  $\pm 5\%$  (J),  $\pm 10\%$  (K)

Part No.	Cap. (μF)	Dimensions (mm)							Min. order Q'ty				
		L max.	T max.	H max.		F		S	φd	Taping			Bulk
				Straight	Crimped lead	Straight	Crimped lead			Standard 5 mm	Odd size 5 mm	Odd size 7.5 mm	Straight · Crimped lead
ECQE1A103□B( )	0.010	7.9	4.2	7.1	—	5.0	—	0.5	2000	—	—	500	
ECQE1A123□B( )	0.012	7.9	4.2	7.1		5.0		0.5					
ECQE1A153□B( )	0.015	7.9	4.2	7.1		5.0		0.5					
ECQE1A183□B( )	0.018	7.9	4.3	7.2		5.0		0.5					
ECQE1A223□B( )	0.022	7.9	4.3	7.2		5.0		0.5					
ECQE1A273□B( )	0.027	7.9	4.3	7.2		5.0		0.5					
ECQE1A333□B( )	0.033	7.9	4.3	7.2		5.0		0.5					
ECQE1A393□B( )	0.039	7.9	4.5	7.4		5.0		0.5					
ECQE1A473□B( )	0.047	7.9	4.8	7.7		5.0		0.5					
ECQE1A563□B( )	0.056	7.9	5.1	8.0		5.0		0.5					
ECQE1A683□B( )	0.068	7.9	5.4	8.6		5.0		0.5					
ECQE1A823□B( )	0.082	10.3	4.6	7.6	12.6	7.5	7.5	0.5	1500	—	1500		
ECQE1A104□B( )	0.10	10.3	5.1	7.7	12.7	7.5	7.5	0.5			1000		
ECQE1A124□B( )	0.12	10.3	5.3	8.4	13.4	7.5	7.5	0.5					
ECQE1A154□B( )	0.15	10.3	5.7	8.9	13.9	7.5	7.5	0.5					
ECQE1A184□B( )	0.18	10.3	5.6	10.3	15.3	7.5	7.5	0.5					
ECQE1A224□B( )	0.22	10.3	6.1	11.0	16.0	7.5	7.5	0.5	1000				
ECQE1A274□B( )	0.27	12.3	5.4	10.7	15.7	10.0	7.5	0.6	—	800			
ECQE1A334□B( )	0.33	12.3	5.9	11.2	16.2	10.0	7.5	0.6		700			
ECQE1A394□B( )	0.39	12.3	6.4	11.6	16.6	10.0	7.5	0.6		600			
ECQE1A474□B( )	0.47	12.3	7.0	12.2	17.2	10.0	7.5	0.6		500	900		
ECQE1A564□B( )	0.56	12.3	6.7	11.9	16.9	10.0	7.5	0.6		600	1000		
ECQE1A684□B( )	0.68	12.3	7.3	12.7	17.7	10.0	7.5	0.6		500	900		
ECQE1A824□B( )	0.82	15.3	6.3	13.3	18.3	12.5	7.5	0.6		600	500		
ECQE1A105□B( )	1.0	15.3	7.0	14.0	19.0	12.5	7.5	0.6		500	400		
ECQE1A125□B( )	1.2	20.8	7.1	14.1	19.1	17.5	10.0	0.8		500	400		
ECQE1A155□B( )	1.5	20.8	8.0	15.1	20.1	17.5	10.0	0.8		400			
ECQE1A185□B( )	1.8	20.8	8.7	15.9	20.9	17.5	10.0	0.8		300			
ECQE1A225□B( )	2.2	20.8	9.7	17.1	22.1	17.5	10.0	0.8					300
ECQE1A275□B( )	2.7	20.8	10.9	18.2	23.2	17.5	10.0	0.8		—	—		
ECQE1A335□B( )	3.3	25.8	9.6	18.7	23.7	22.5	15.0	0.8					
ECQE1A395□B( )	3.9	25.8	10.6	19.7	24.7	22.5	15.0	0.8					
ECQE1A475□B( )	4.7	25.8	11.8	20.8	25.8	22.5	15.0	0.8					

\* □ : Capacitance tolerance code  
( ) : Suffix for lead crimped or taped type

Type D : 0.082  $\mu$ F to 0.68  $\mu$ F  
Type B : 0.82  $\mu$ F to 4.7  $\mu$ F

## Notice for AC rated

AC rated capacitors complying with clause 1 of "Electrical Appliance and Material Safety Law".  
As for clause 2 of "Electrical Appliance and Material Safety Law", please use ECQUA type or ECQUL type.

When using these capacitors as a across-the-line capacitor, it shall be required to follow either item 1. or item 2. condition.

1. Capacitor shall be connected in parallel with varistor (Specified varistor voltage in table 1.)
2. Voltage applied for capacitor shall not exceed other than specified in table 1, when using these capacitors.

Table 1

Capacitor rated voltage	Varistor voltage	Pulse voltage
125 V.AC	250 V	250 V <sub>0-P</sub>



## Metalized Polyester Film Capacitor

Type : **ECQE(T)**

Non-inductive construction using metallized Polyester film with flame retardant epoxy resin coating



### Features

- Self-healing property
- Excellent electrical characteristics
- Flame retardant epoxy resin coating
- Moisture resistance 85 °C, 85 % RH for 500 hours
- RoHS directive compliant

### Recommended applications

- General purpose usage
- \* Please contact us when applications are CDI , ignitor etc.

### Explanation of part number

1	2	3	4	5	6	7	8	9	10	11	12
E	C	Q	E							T	
Product code		Dielectric & construction		Rated voltage		Capacitance			Cap. Tol.	Suffix	Suffix

- Odd size taping

1	2	3	4	5	6	7	8	9	10	11	12
<b>E</b>	<b>C</b>	<b>Q</b>	<b>E</b>						<b>R</b>		<b>T</b>
Product code		Dielectric & construction		Rated voltage		Capacitance			Suffix	Cap. Tol.	Suffix

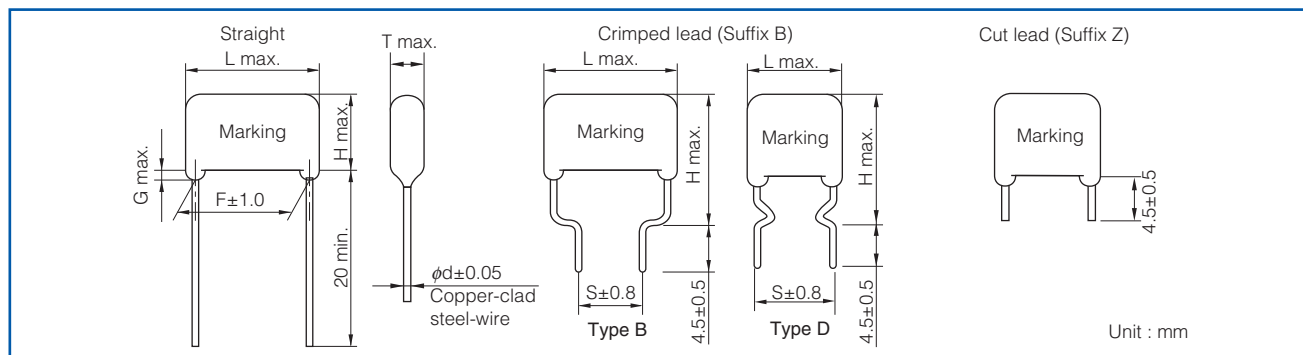
### Specifications

Category temp. range (Including temperature-rise on unit surface)	250 V.DC, 400 V.DC, 630 V.DC	- 40 °C to +105 °C
	125 V.AC, 250 V.AC	- 40 °C to +105 °C
Rated voltage	250 V.DC, 400 V.DC, 630 V.DC (Derating of rated voltage by 1.25 %/°C at more than 85 °C) 125 V.AC, 250 V.AC	
Capacitance range	250 V.DC	0.010 μF to 10.0 μF (E12)
	400 V.DC	0.010 μF to 2.2 μF (E12)
	630 V.DC	0.010 μF to 2.2 μF (E12)
	125 V.AC	0.010 μF to 0.47 μF (E12)
	250 V.AC	0.010 μF to 0.47 μF (E12)
Capacitance tolerance	±5 % (J), ±10 % (K)	
Dissipation factor (tan δ)	tan δ ≤ 1.0 % (20 °C, 1 kHz)	
Withstand voltage	• Rated volt. : 250 V.DC to 630 V.DC Between terminals : Rated volt. (V.DC) × 150 %, 60 s	
	• Rated volt. : 125 V.AC, 250 V.AC Between terminals : Rated volt. (V.AC) × 230 %, 60 s Between terminals to enclosure : 1500 V.AC, 60 s	
Insulation resistance (IR)	250 V.DC to 630 V.DC : C ≤ 0.33 μF : IR ≥ 9000 MΩ (20 °C, 100 V.DC, 60 s)	
	125 V.AC, 250 V.AC : IR ≥ 2000 MΩ (20 °C, 500 V.DC, 60 s)	

\* 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".

\* Voltage to be applied to ECQE1A (T) & ECQE2A (T) is only sine wave (50 Hz or 60 Hz).

## Dimensions

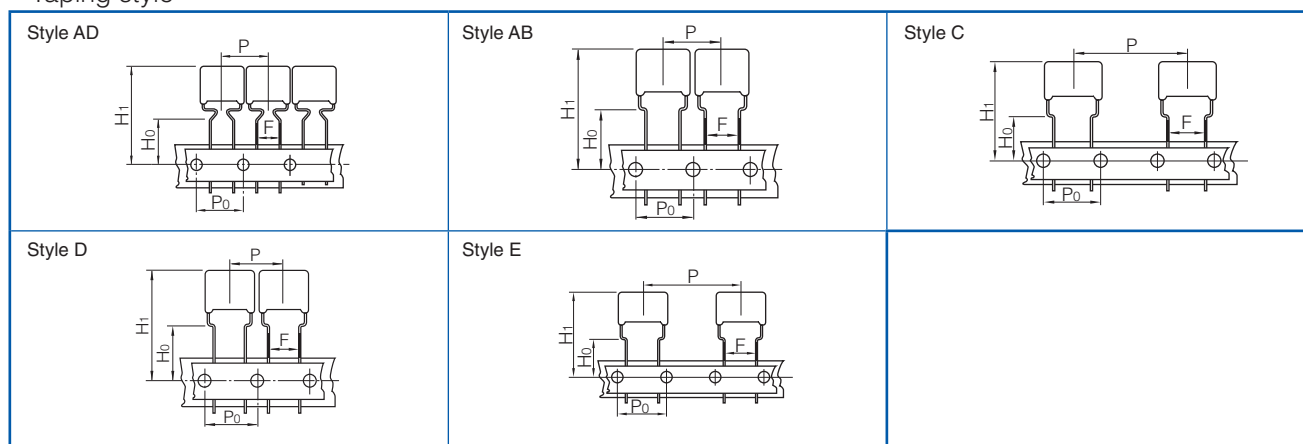


## Packaging specifications for bulk package

- Packing quantity : 100 pcs./bag

## Taping specifications for automatic insertion

- Taping style



\* Refer to the page of taping specifications.

- Packaging specifications

Type	Rated voltage	Capacitance range (μF)	Taping style					Packing	suffix
			AD	AB	C	D	E		
ECQE(T)	250 V.DC	0.010 to 0.15	○					Ammono	( ) T3
		0.18 to 0.33			○			Ammono	( ) T3
		0.39 to 1.5			○			Ammono	( ) T3
		0.010 to 0.33				○		Ammono	R( ) T
		0.39 to 1.5					○	Ammono	R( ) T
	400 V.DC	0.010 to 0.033	○					Ammono	( ) T3
		0.039 to 0.10			○			Ammono	( ) T3
		0.12 to 0.47			○			Ammono	( ) T3
		0.010 to 0.10				○		Ammono	R( ) T
		0.12 to 0.47					○	Ammono	R( ) T
	630 V.DC	0.010 to 0.047			○			Ammono	( ) T3
		0.056 to 0.22			○			Ammono	( ) T3
		0.010 to 0.047				○		Ammono	R( ) T
		0.056 to 0.22					○	Ammono	R( ) T
	125 V.AC	0.27 to 0.47			○			Ammono	( ) T3
		0.010 to 0.10		○				Ammono	( ) T6
		0.12 to 0.22			○			Ammono	( ) T6
		0.010 to 0.22				○		Ammono	R( ) T
		0.27 to 0.47					○	Ammono	R( ) T
	250 V.AC	0.056 to 0.22			○		○	Ammono	( ) T3
		0.010 to 0.047			○			Ammono	( ) T6
		0.010 to 0.047				○		Ammono	R( ) T
		0.056 to 0.22					○	Ammono	R( ) T

- Lead spacing

Style	Lead spacing
AD	5.0 mm
AB	5.0 mm
C	5.0 mm
D	7.5 mm
E	7.5 mm

\* See the column "Rating • Dimensions • Quantity" for packing quantity

## Rating · Dimensions · Quantity

● Rated voltage : 250 V.DC, Capacitance tolerance :  $\pm 5\%$ (J),  $\pm 10\%$ (K)

Part No.	Cap. ( $\mu$ F)	Dimensions (mm)								Min. order Q'ty					
		L max.	T max.	H max.		F	S	G max.	$\phi$ d	Taping			Bulk		
				Straight	Crimped lead	Straight	Crimped lead	Straight		Standard 5 mm	Odd size 5 mm	Odd size 7.5 mm	Straight	Crimped lead	
ECQE2103□T( )	0.010	10.8	4.3	7.4	12.4	7.5	7.5	1.0	0.6	1500	—	1800	500	500	
ECQE2123□T( )	0.012	10.8	4.4	7.5	12.5	7.5	7.5	1.0	0.6						
ECQE2153□T( )	0.015	10.8	4.4	7.5	12.5	7.5	7.5	1.0	0.6						
ECQE2183□T( )	0.018	10.8	4.4	7.5	12.5	7.5	7.5	1.0	0.6						
ECQE2223□T( )	0.022	10.8	4.4	7.5	12.5	7.5	7.5	1.0	0.6						
ECQE2273□T( )	0.027	10.8	4.4	7.5	12.5	7.5	7.5	1.0	0.6						
ECQE2333□T( )	0.033	10.8	4.5	7.5	12.5	7.5	7.5	1.0	0.6						
ECQE2393□T( )	0.039	10.8	4.5	7.5	12.5	7.5	7.5	1.0	0.6						
ECQE2473□T( )	0.047	10.8	4.5	7.5	12.5	7.5	7.5	1.0	0.6						
ECQE2563□T( )	0.056	10.8	4.8	7.9	12.9	7.5	7.5	1.0	0.6						1600
ECQE2683□T( )	0.068	10.8	4.5	7.5	12.5	7.5	7.5	1.0	0.6						1700
ECQE2823□T( )	0.082	10.8	4.9	8.0	13.0	7.5	7.5	1.0	0.6						1500
ECQE2104□T( )	0.10	10.8	5.8	8.4	13.4	7.5	7.5	1.0	0.6	1000	1300				
ECQE2124□T( )	0.12	10.8	6.0	9.0	14.0	7.5	7.5	1.0	0.6						
ECQE2154□T( )	0.15	10.8	6.0	10.8	15.8	7.5	7.5	1.0	0.6			1200			
ECQE2184□T( )	0.18	12.5	5.0	10.3	15.3	10.0	10.0	1.0	0.6	—	800	1400	500	500	
ECQE2224□T( )	0.22	12.5	5.5	10.5	15.5	10.0	10.0	1.0	0.6						1300
ECQE2274□T( )	0.27	12.5	6.0	11.5	16.5	10.0	10.0	1.0	0.6			700			1200
ECQE2334□T( )	0.33	12.5	6.5	12.0	17.0	10.0	10.0	1.0	0.6			600			1100
ECQE2394□T( )	0.39	19.0	4.9	12.0	17.0	15.0	10.0	1.0	0.6			800			700
ECQE2474□T( )	0.47	19.0	5.3	12.5	17.5	15.0	10.0	1.0	0.6			700			600
ECQE2564□T( )	0.56	19.0	5.5	13.0	18.0	15.0	10.0	1.0	0.6			800			
ECQE2684□T( )	0.68	19.0	6.0	13.5	18.5	15.0	10.0	1.0	0.8			700			
ECQE2824□T( )	0.82	19.0	6.5	14.5	19.5	15.0	10.0	1.0	0.8			600			500
ECQE2105□T( )	1.0	19.0	7.4	15.0	20.0	15.0	10.0	1.0	0.8			500			400
ECQE2125□T( )	1.2	19.0	8.0	15.9	20.9	15.0	10.0	1.0	0.8						
ECQE2155□T( )	1.5	19.0	9.0	16.8	21.8	15.0	10.0	1.0	0.8			400			
ECQE2185□T( )	1.8	26.5	7.5	15.5	20.5	22.5	15.0	1.0	0.8		—	—			—
ECQE2225□T( )	2.2	26.5	8.5	16.3	21.3	22.5	15.0	1.0	0.8						
ECQE2275□T( )	2.7	26.5	9.4	17.0	22.0	22.5	15.0	1.0	0.8						
ECQE2335□T( )	3.3	26.5	10.3	18.0	23.0	22.5	15.0	1.5	0.8						
ECQE2395□T( )	3.9	26.5	11.0	20.5	25.5	22.5	15.0	1.5	0.8						
ECQE2475□T( )	4.7	26.5	12.0	21.5	26.5	22.5	15.0	1.5	0.8						
ECQE2565□T( )	5.6	31.5	11.8	21.0	26.0	27.5	22.5	1.5	0.8						
ECQE2685□T( )	6.8	31.5	13.0	22.4	27.4	27.5	22.5	1.5	0.8						
ECQE2825□T( )	8.2	31.5	14.3	23.5	28.5	27.5	22.5	1.5	0.8						
ECQE2106□T( )	10.0	31.5	15.9	25.8	30.8	27.5	22.5	1.5	0.8						

\* □ : Capacitance tolerance code  
( ) : Suffix for lead crimped or taped type

Type D : 0.010  $\mu$ F to 0.33  $\mu$ F  
Type B : 0.39  $\mu$ F to 10.0  $\mu$ F

## Rating · Dimensions · Quantity

- Rated voltage : 400 V.DC, Capacitance tolerance :  $\pm 5\%$  (J),  $\pm 10\%$  (K)

Part No.	Cap. (μF)	Dimensions (mm)								Min. order Q'ty				
		L max.	T max.	H max.		F	S	G max.	φd	Taping			Bulk	
				Straight	Crimped lead	Straight	Crimped lead	Straight		Standard 5 mm	Odd size 5 mm	Odd size 7.5 mm	Straight · Crimped lead	
ECQE4103□T( )	0.010	10.8	4.3	7.4	12.4	7.5	7.5	1.0	0.6	1500	—	1800	500	
ECQE4123□T( )	0.012	10.8	4.4	7.5	12.5	7.5	7.5	1.0	0.6			1700		
ECQE4153□T( )	0.015	10.8	4.4	7.5	12.5	7.5	7.5	1.0	0.6					1600
ECQE4183□T( )	0.018	10.8	4.4	7.5	12.5	7.5	7.5	1.0	0.6					
ECQE4223□T( )	0.022	10.8	4.8	7.9	12.9	7.5	7.5	1.0	0.6					1200
ECQE4273□T( )	0.027	10.8	5.5	8.0	13.0	7.5	7.5	1.0	0.6	1000	—	1500		
ECQE4333□T( )	0.033	10.8	6.0	9.0	14.0	7.5	7.5	1.0	0.6			1400		
ECQE4393□T( )	0.039	12.5	4.9	8.0	13.0	10.0	10.0	1.0	0.6	800	1300			
ECQE4473□T( )	0.047	12.5	5.0	8.3	13.3	10.0	10.0	1.0	0.6			700		1200
ECQE4563□T( )	0.056	12.5	5.0	10.0	15.0	10.0	10.0	1.0	0.6	800	700			
ECQE4683□T( )	0.068	12.5	5.4	10.5	15.5	10.0	10.0	1.0	0.6			700		600
ECQE4823□T( )	0.082	12.5	5.8	11.0	16.0	10.0	10.0	1.0	0.6	600	500			
ECQE4104□T( )	0.10	12.5	6.3	12.0	17.0	10.0	10.0	1.0	0.6			500		400
ECQE4124□T( )	0.12	19.0	5.0	10.0	15.0	10.0	10.0	1.0	0.6	—	—			
ECQE4154□T( )	0.15	19.0	5.0	12.4	17.4	15.0	10.0	1.0	0.6					
ECQE4184□T( )	0.18	19.0	5.4	12.5	17.5	15.0	10.0	1.0	0.6					
ECQE4224□T( )	0.22	19.0	5.9	13.0	18.0	15.0	10.0	1.0	0.6					
ECQE4274□T( )	0.27	19.0	6.5	14.3	19.3	15.0	10.0	1.0	0.8					
ECQE4334□T( )	0.33	19.0	7.0	14.9	19.9	15.0	10.0	1.0	0.8					
ECQE4394□T( )	0.39	19.0	7.5	15.4	20.4	15.0	10.0	1.0	0.8					
ECQE4474□T( )	0.47	19.0	7.8	17.0	22.0	15.0	10.0	1.0	0.8					
ECQE4564□T( )	0.56	26.5	6.5	16.0	21.0	22.5	15.0	1.0	0.8					
ECQE4684□T( )	0.68	26.5	7.0	16.5	21.5	22.5	15.0	1.0	0.8					
ECQE4824□T( )	0.82	26.5	7.9	17.3	22.3	22.5	15.0	1.0	0.8					
ECQE4105□T( )	1.0	26.5	8.5	18.0	23.0	22.5	15.0	1.0	0.8					
ECQE4125□T( )	1.2	26.5	9.5	18.9	23.9	22.5	15.0	1.0	0.8					
ECQE4155□T( )	1.5	31.5	9.5	19.0	24.0	27.5	22.5	1.0	0.8					
ECQE4185□T( )	1.8	31.5	11.0	20.5	25.5	27.5	22.5	1.5	0.8					
ECQE4225□T( )	2.2	31.5	11.0	22.0	27.0	27.5	22.5	1.5	0.8					

\* □ : Capacitance tolerance code  
( ) : Suffix for lead crimped or taped type

Type D : 0.010  $\mu$ F to 0.10  $\mu$ F  
Type B : 0.12  $\mu$ F to 2.2  $\mu$ F

- Rated voltage : 630 V.DC, Capacitance tolerance :  $\pm 5\%$  (J),  $\pm 10\%$  (K)

Part No.	Cap. (μF)	Dimensions (mm)								Min. order Q'ty				
		L max.	T max.	H max.		F		S	G max.	φd	Taping		Bulk	
				Straight	Crimped lead	Straight	Crimped lead	Straight	Odd size 5 mm		Odd size 7.5 mm	Straight	Crimped lead	
ECQE6103□T( )	0.010	12.5	4.5	7.5	12.5	10.0	10.0	1.0	0.6	900	1600	500	500	
ECQE6123□T( )	0.012	12.5	4.5	7.8	12.8	10.0	10.0	1.0	0.6					
ECQE6153□T( )	0.015	12.5	5.0	8.2	13.2	10.0	10.0	1.0	0.6	800	1400			
ECQE6183□T( )	0.018	12.5	4.9	10.0	15.0	10.0	10.0	1.0	0.6		1300			
ECQE6223□T( )	0.022	12.5	5.3	10.5	15.5	10.0	10.0	1.0	0.6					
ECQE6273□T( )	0.027	12.5	5.5	10.9	15.9	10.0	10.0	1.0	0.6	700	1200			
ECQE6333□T( )	0.033	12.5	6.0	11.9	16.9	10.0	10.0	1.0	0.6					
ECQE6393□T( )	0.039	12.5	6.0	13.4	18.4	10.0	10.0	1.0	0.6	600	1100			
ECQE6473□T( )	0.047	12.5	6.5	13.5	18.5	10.0	10.0	1.0	0.6					
ECQE6563□T( )	0.056	19.0	5.4	10.5	15.5	15.0	10.0	1.0	0.6	800	600			
ECQE6683□T( )	0.068	19.0	5.8	11.0	16.0	15.0	10.0	1.0	0.6	700				
ECQE6823□T( )	0.082	19.0	6.5	12.0	17.0	15.0	10.0	1.0	0.6	600	500			
ECQE6104□T( )	0.10	19.0	6.3	14.0	19.0	15.0	10.0	1.0	0.6					
ECQE6124□T( )	0.12	19.0	6.3	14.5	19.5	15.0	10.0	1.0	0.8					
ECQE6154□T( )	0.15	19.0	7.5	15.4	20.4	15.0	10.0	1.0	0.8	500	400			
ECQE6184□T( )	0.18	19.0	8.0	16.0	21.0	15.0	10.0	1.0	0.8					
ECQE6224□T( )	0.22	19.0	9.0	16.5	21.5	15.0	10.0	1.0	0.8	400				
ECQE6274□T( )	0.27	26.5	7.0	16.5	21.5	22.5	15.0	1.0	0.8	—	—			
ECQE6334□T( )	0.33	26.5	7.8	17.0	22.0	22.5	15.0	1.0	0.8					
ECQE6394□T( )	0.39	26.5	8.5	17.9	22.9	22.5	15.0	1.0	0.8					
ECQE6474□T( )	0.47	26.5	9.3	18.5	23.5	22.5	15.0	1.0	0.8					
ECQE6564□T( )	0.56	26.5	10.0	20.0	25.0	22.5	15.0	1.5	0.8					
ECQE6684□T( )	0.68	26.5	11.5	21.0	26.0	22.5	15.0	1.5	0.8					
ECQE6824□T( )	0.82	31.5	11.3	20.5	25.5	27.5	22.5	1.5	0.8					
ECQE6105□T( )	1.0	31.5	12.5	21.9	26.9	27.5	22.5	1.5	0.8					
ECQE6125□T( )	1.2	31.5	13.5	23.0	28.0	27.5	22.5	1.5	0.8					
ECQE6155□T( )	1.5	31.5	15.3	24.7	29.7	27.5	22.5	1.5	0.8					
ECQE6185□T( )	1.8	31.5	16.8	27.0	32.0	27.5	22.5	1.5	0.8					
ECQE6225□T( )	2.2	31.5	19.5	29.0	34.0	27.5	22.5	1.5	0.8	400				

\* □ : Capacitance tolerance code  
( ) : Suffix for lead crimped or taped type

Type D : 0.010  $\mu$ F to 0.047  $\mu$ F  
Type B : 0.056  $\mu$ F to 2.2  $\mu$ F

## Rating · Dimensions · Quantity

- Rated voltage : 125 V.AC, Capacitance tolerance :  $\pm 5\%$ (J),  $\pm 10\%$ (K)  
Noise suppression Capacitors (Across-the-line)

Part No.	Cap. (μF)	Dimensions (mm)								Min. order Q'ty				
		L max.	T max.	H max.		F		S	G max.	φd	Taping			Bulk
				Straight	Crimped lead	Straight	Crimped lead	Straight	Standard 5 mm		Odd size 5 mm	Odd size 7.5 mm	Straight · Crimped lead	
ECQE1A103□( )	0.010	11.0	4.5	7.5	12.5	7.5	7.5	1.0	0.6	1500	-	1700	500	
ECQE1A123□( )	0.012	11.0	4.4	7.5	12.5	7.5	7.5	1.0	0.6					
ECQE1A153□( )	0.015	11.0	4.4	7.5	12.5	7.5	7.5	1.0	0.6					
ECQE1A183□( )	0.018	11.0	4.4	7.5	12.5	7.5	7.5	1.0	0.6					
ECQE1A223□( )	0.022	11.0	4.4	7.5	12.5	7.5	7.5	1.0	0.6					
ECQE1A273□( )	0.027	11.0	4.4	7.5	12.5	7.5	7.5	1.0	0.6					
ECQE1A333□( )	0.033	11.0	4.5	7.8	12.8	7.5	7.5	1.0	0.6					
ECQE1A393□( )	0.039	11.0	4.5	7.8	12.8	7.5	7.5	1.0	0.6					
ECQE1A473□( )	0.047	11.0	5.5	8.0	13.0	7.5	7.5	1.0	0.6	1000	-	1400		
ECQE1A563□( )	0.056	11.0	5.9	8.5	13.5	7.5	7.5	1.0	0.6			1300		
ECQE1A683□( )	0.068	11.0	6.3	9.4	14.4	7.5	7.5	1.0	0.6			1200		
ECQE1A823□( )	0.082	11.0	6.5	9.8	14.8	7.5	7.5	1.0	0.6			1100		
ECQE1A104□( )	0.10	11.0	6.5	11.8	16.8	7.5	7.5	1.0	0.6					
ECQE1A124□( )	0.12	13.0	5.9	11.5	16.5	10.0	10.0	1.0	0.6					
ECQE1A154□( )	0.15	13.0	6.5	12.0	17.0	10.0	10.0	1.0	0.6					
ECQE1A184□( )	0.18	13.0	7.0	12.5	17.5	10.0	10.0	1.0	0.6			-	600	900
ECQE1A224□( )	0.22	13.0	7.5	13.4	18.4	10.0	10.0	1.0	0.6	800				
ECQE1A274□( )	0.27	19.0	6.3	12.0	17.0	15.0	10.0	1.0	0.6	500				
ECQE1A334□( )	0.33	19.0	6.9	12.5	17.5	15.0	10.0	1.0	0.6					
ECQE1A394□( )	0.39	19.0	7.4	13.0	18.0	15.0	10.0	1.0	0.6	500	400			
ECQE1A474□( )	0.47	19.0	7.5	15.3	20.3	15.0	10.0	1.0	0.6					

\* □ : Capacitance tolerance code  
( ) : Suffix for lead crimped or taped type

Type D : 0.010  $\mu$ F to 0.22  $\mu$ F  
Type B : 0.27  $\mu$ F to 0.47  $\mu$ F

- Rated voltage : 250 V.AC, Capacitance tolerance :  $\pm 5\%$ (J),  $\pm 10\%$ (K)  
Noise suppression Capacitors (Across-the-line)

Part No.	Cap. (μF)	Dimensions (mm)								Min. order Q'ty			
		L max.	T max.	H max.		F		S	G max.	φd	Taping		Bulk
				Straight	Crimped lead	Straight	Crimped lead	Straight			Odd size 5 mm	Odd size 7.5 mm	Straight · Crimped lead
ECQE2A103□( )	0.010	13.0	5.5	10.8	15.8	10.0	10.0	1.0	0.6	800	1300	500	
ECQE2A123□( )	0.012	13.0	6.0	11.5	16.5	10.0	10.0	1.0	0.6	700	1200		
ECQE2A153□( )	0.015	13.0	6.3	9.9	14.9	10.0	10.0	1.0	0.6	600	1100		
ECQE2A183□( )	0.018	13.0	6.0	11.9	16.9	10.0	10.0	1.0	0.6	700	1200		
ECQE2A223□( )	0.022	13.0	6.0	11.5	16.5	10.0	10.0	1.0	0.6				
ECQE2A273□( )	0.027	13.0	5.5	10.9	15.9	10.0	10.0	1.0	0.6	800	1300		
ECQE2A333□( )	0.033	13.0	6.0	11.9	16.9	10.0	10.0	1.0	0.6	700	1200		
ECQE2A393□( )	0.039	13.0	6.0	13.4	18.4	10.0	10.0	1.0	0.6				
ECQE2A473□( )	0.047	13.0	6.5	14.4	19.4	10.0	10.0	1.0	0.6	600	1100		
ECQE2A563□( )	0.056	19.0	5.4	10.5	15.5	15.0	10.0	1.0	0.6	800	600		
ECQE2A683□( )	0.068	19.0	5.8	11.0	16.0	15.0	10.0	1.0	0.6	700			
ECQE2A823□( )	0.082	19.0	6.3	12.0	17.0	15.0	10.0	1.0	0.6	600	500	500	
ECQE2A104□( )	0.10	19.0	6.3	14.0	19.0	15.0	10.0	1.0	0.6				
ECQE2A124□( )	0.12	19.0	6.8	14.5	19.5	15.0	10.0	1.0	0.8				
ECQE2A154□( )	0.15	19.0	7.5	15.4	20.4	15.0	10.0	1.0	0.8				
ECQE2A184□( )	0.18	19.0	8.0	16.0	21.0	15.0	10.0	1.0	0.8	500	400		
ECQE2A224□( )	0.22	19.0	9.0	16.9	21.9	15.0	10.0	1.0	0.8				
ECQE2A274□( )	0.27	26.5	7.0	16.5	21.5	22.5	15.0	1.0	0.8	—	—		
ECQE2A334□( )	0.33	26.5	7.8	17.0	22.0	22.5	15.0	1.0	0.8				
ECQE2A394□( )	0.39	26.5	8.5	17.9	22.9	22.5	15.0	1.0	0.8				
ECQE2A474□( )	0.47	26.5	9.3	18.5	23.5	22.5	15.0	1.0	0.8				

\* □ : Capacitance tolerance code  
( ) : Suffix for lead crimped or taped type

Type D : 0.010  $\mu$ F to 0.047  $\mu$ F  
Type B : 0.056  $\mu$ F to 0.47  $\mu$ F

### Notice for AC rated

AC rated capacitors complying with clause 1 of "Electrical Appliance and Material Safety Law".

As for clause 2 of "Electrical Appliance and Material Safety Law", please use ECQUA type or ECQUL type.

When using these capacitors as a across-the-line capacitor, it shall be required to follow either item 1. or item 2. condition.

- Capacitor shall be connected in parallel with varistor (Specified varistor voltage in table 1.)
- Voltage applied for capacitor shall not exceed other than specified in table 1, when using these capacitors.

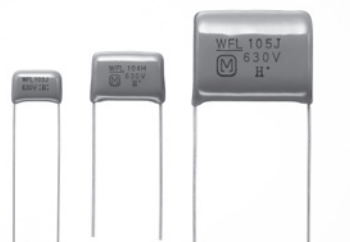
Table 1

Capacitor rated voltage	Varistor voltage	Pulse voltage
125 V.AC	250 V	250 V <sub>D,P</sub>
250 V.AC	470 V	630 V <sub>D,P</sub>

## Metallized Polypropylene Film Capacitor

Type : **ECWF(L)**

Non-inductive construction using metallized polypropylene film with flame retardant epoxy resin coating.



### Features

- Small size
- Excellent frequency characteristics
- Low loss
- Flame retardant epoxy resin coating
- 85 °C, 85 % RH, W.V. × 1.0 for 500 hours
- RoHS directive compliant

### Recommended applications

- Lighting
- High frequency and high current circuit

### Explanation of part number

1	2	3	4	5	6	7	8	9	10	11
<b>E</b>	<b>C</b>	<b>W</b>	<b>F</b>						<b>L</b>	
Product code		Dielectric & construction		Rated voltage	Capacitance			Cap. Tol.	Suffix	Suffix
				4	400 V.DC			H	±3 %	Code
				6	630 V.DC			J	±5 %	Lead Form
										Blank
										B
										C

- Odd size taping

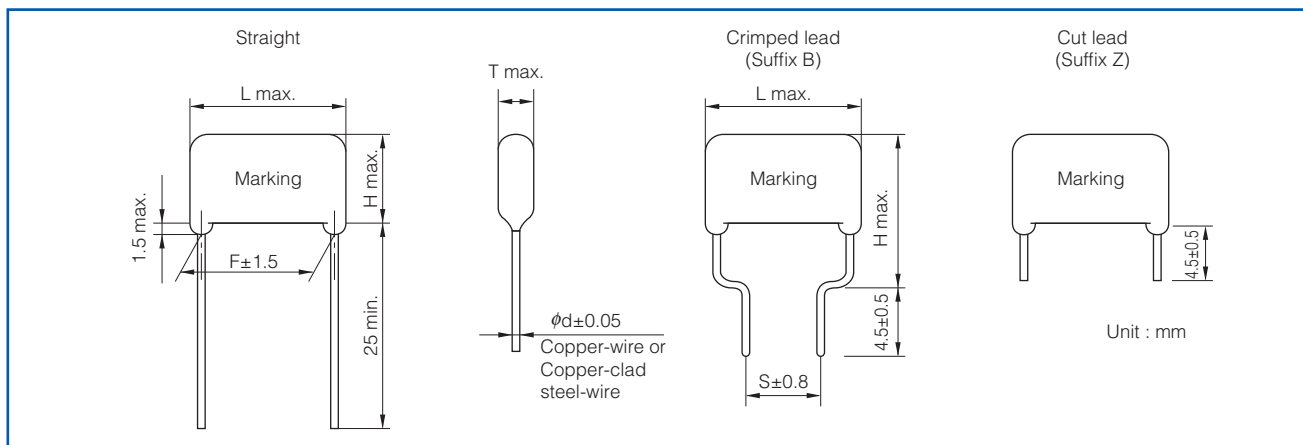
1	2	3	4	5	6	7	8	9	10	11
<b>E</b>	<b>C</b>	<b>W</b>	<b>F</b>					<b>R</b>		<b>L</b>
Product code		Dielectric & construction		Rated voltage	Capacitance			Suffix	Cap. Tol.	Suffix

### Specifications

Category temp. range (Including temperature-rise on unit surface)	- 40 °C to +105 °C	
Rated voltage	400 V.DC, 630 V.DC	
Capacitance range	400 V.DC	0.022 μF to 2.4 μF
	630 V.DC	0.010 μF to 1.3 μF
Capacitance tolerance	±3 % (H), ±5 % (J)	
Dissipation factor (tan δ)	tan δ ≤ 0.05 % ( 20 °C, 1 kHz )	
	tan δ ≤ 0.20 % ( 20 °C, 10 kHz )	
Withstand voltage	Between terminals : Rated volt. (V.DC) × 150 %, 60 s	
Insulation resistance (IR)	C ≤ 0.33 μF : IR ≥ 9000 MΩ (20 °C, 100 V.DC, 60 s for 400 V.DC)	
	C > 0.33 μF : IR ≥ 3000 MΩ · μF (20 °C, 500 V.DC, 60 s for 630 V.DC)	

\* 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".

## Dimensions



## Packaging specifications for bulk package

- Packing quantity : 100 pcs./bag

## Taping specifications for automatic insertion

- Taping style



\* Refer to the page of taping specifications.

- Packaging specifications

Type	Rated voltage (V.DC)	Capacitance range (μF)	Taping style					Packing	suffix
			AD	AB	C	D	E		
ECWF(L)	400	0.022 to 0.091				○		Ammo	R( ) L
		0.10 to 1.0					○	Ammo	R( ) L
	630	0.010 to 0.043				○		Ammo	R( ) L
		0.047 to 0.43					○	Ammo	R( ) L

- Lead spacing

Style	Lead spacing
D	7.5 mm
E	7.5 mm



## Rating · Dimensions · Quantity

● Rated voltage : 400 V.DC, Capacitance tolerance :  $\pm 3 \%$ (J),  $\pm 5 \%$ (J)

Part No.	Cap. (μF)	Dimensions (mm)							Min. order Q'ty		
		L max.	T max.	H max.		F	S	φd	Taping	Bulk	
				Straight	Crimped lead	Straight	Crimped lead		7.5 mm	Straight	Crimped lead
ECWF4223□L( )	0.022	12.5	5.8	8.6	13.6	10.0	7.5	0.6	1100	500	500
ECWF4243□L( )	0.024	12.5	6.0	8.8	13.8	10.0	7.5	0.6			
ECWF4273□L( )	0.027	12.5	6.2	9.0	14.0	10.0	7.5	0.6	1000		
ECWF4303□L( )	0.030	12.5	6.4	9.3	14.3	10.0	7.5	0.6			
ECWF4333□L( )	0.033	12.5	6.7	9.5	14.5	10.0	7.5	0.6	900		
ECWF4363□L( )	0.036	12.5	5.7	8.4	13.4	10.0	7.5	0.6	1100		
ECWF4393□L( )	0.039	12.5	5.8	8.6	13.6	10.0	7.5	0.6			
ECWF4433□L( )	0.043	12.5	6.0	8.8	13.8	10.0	7.5	0.6	1000		
ECWF4473□L( )	0.047	12.5	6.2	9.0	14.0	10.0	7.5	0.6			
ECWF4513□L( )	0.051	12.5	6.4	9.2	14.2	10.0	7.5	0.6	1000		
ECWF4563□L( )	0.056	12.5	6.6	9.4	14.4	10.0	7.5	0.6			
ECWF4623□L( )	0.062	13.0	6.8	9.6	14.6	10.0	7.5	0.8	900		
ECWF4683□L( )	0.068	13.0	7.0	9.9	14.9	10.0	7.5	0.8			
ECWF4753□L( )	0.075	13.0	7.3	10.1	15.1	10.0	7.5	0.8	800		
ECWF4823□L( )	0.082	13.0	7.5	10.4	15.4	10.0	7.5	0.8			
ECWF4913□L( )	0.091	13.0	7.8	10.7	15.7	10.0	7.5	0.8	500		
ECWF4104□L( )	0.10	15.5	6.5	11.0	16.0	12.5	7.5	0.8			
ECWF4114□L( )	0.11	15.5	6.8	11.3	16.3	12.5	7.5	0.8	400		
ECWF4124□L( )	0.12	15.5	7.0	11.5	16.5	12.5	7.5	0.8			
ECWF4134□L( )	0.13	15.5	7.2	11.8	16.8	12.5	7.5	0.8			
ECWF4154□L( )	0.15	15.5	7.6	12.2	17.2	12.5	7.5	0.8			
ECWF4164□L( )	0.16	15.5	7.8	12.4	17.4	12.5	7.5	0.8			
ECWF4184□L( )	0.18	15.5	8.2	12.8	17.8	12.5	7.5	0.8	300		
ECWF4204□L( )	0.20	15.5	8.6	13.3	18.3	12.5	7.5	0.8			
ECWF4224□L( )	0.22	15.5	9.0	13.6	18.6	12.5	7.5	0.8			
ECWF4244□L( )	0.24	18.0	8.3	13.0	18.0	15.0	10.0	0.8			
ECWF4274□L( )	0.27	18.0	8.8	13.4	18.4	15.0	10.0	0.8			
ECWF4304□L( )	0.30	18.0	9.2	13.9	18.9	15.0	10.0	0.8	200		
ECWF4334□L( )	0.33	18.0	9.6	14.3	19.3	15.0	10.0	0.8			
ECWF4364□L( )	0.36	18.0	9.9	14.7	19.7	15.0	10.0	0.8			
ECWF4394□L( )	0.39	18.0	10.3	15.1	20.1	15.0	10.0	0.8			
ECWF4434□L( )	0.43	18.0	10.7	15.6	20.6	15.0	10.0	0.8			
ECWF4474□L( )	0.47	18.0	11.2	16.1	21.1	15.0	10.0	0.8	200		
ECWF4514□L( )	0.51	20.5	10.3	16.8	21.8	17.5	12.5	0.8	300		
ECWF4564□L( )	0.56	20.5	10.7	17.3	22.3	17.5	12.5	0.8			
ECWF4624□L( )	0.62	20.5	11.3	17.9	22.9	17.5	12.5	0.8	200		
ECWF4684□L( )	0.68	20.5	11.8	18.5	23.5	17.5	12.5	0.8			
ECWF4754□L( )	0.75	20.5	12.3	19.1	24.1	17.5	12.5	0.8			
ECWF4824□L( )	0.82	23.0	11.8	18.5	23.5	20.0	12.5	0.8			
ECWF4914□L( )	0.91	23.0	12.4	19.2	24.2	20.0	12.5	0.8			
ECWF4105□L( )	1.0	23.0	13.0	19.8	24.8	20.0	12.5	0.8	-		
ECWF4115□L( )	1.1	23.0	13.6	20.5	25.5	20.0	12.5	0.8			
ECWF4125□L( )	1.2	28.0	12.3	19.1	24.1	25.0	17.5	0.8			
ECWF4135□L( )	1.3	28.0	12.8	19.6	24.6	25.0	17.5	0.8			
ECWF4155□L( )	1.5	28.0	13.7	20.7	25.7	25.0	17.5	0.8			
ECWF4165□L( )	1.6	28.0	14.2	21.2	26.2	25.0	17.5	0.8	400		
ECWF4185□L( )	1.8	28.0	15.2	22.2	27.2	25.0	17.5	0.8			
ECWF4205□L( )	2.0	28.0	16.0	23.1	28.1	25.0	17.5	0.8			
ECWF4225□L( )	2.2	28.0	16.8	24.0	29.0	25.0	17.5	0.8			
ECWF4245□L( )	2.4	28.0	17.5	24.8	29.8	25.0	17.5	0.8			

\* □ : Capacitance tolerance code  
( ) : Suffix for lead crimped



## Rating · Dimensions · Quantity

● Rated voltage : 630 V.DC, Capacitance tolerance :  $\pm 3 \%$ (J),  $\pm 5 \%$ (J)

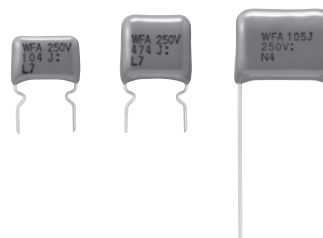
Part No.	Cap. (μF)	Dimensions (mm)							Min. order Q'ty		
		L max.	T max.	H max.		F	S	φd	Taping	Bulk	
				Straight	Crimped lead	Straight	Crimped lead		7.5 mm	Straight	Crimped lead
ECWF6103□L( )	0.010	12.5	5.2	8.0	13.0	10.0	7.5	0.6	1200	500	500
ECWF6113□L( )	0.011	12.5	5.4	8.2	13.2	10.0	7.5	0.6			
ECWF6123□L( )	0.012	12.5	5.5	8.3	13.3	10.0	7.5	0.6			
ECWF6133□L( )	0.013	12.5	5.6	8.5	13.5	10.0	7.5	0.6	1100		
ECWF6153□L( )	0.015	12.5	5.9	8.7	13.7	10.0	7.5	0.6			
ECWF6163□L( )	0.016	12.5	6.0	8.9	13.9	10.0	7.5	0.6			
ECWF6183□L( )	0.018	12.5	6.2	9.1	14.1	10.0	7.5	0.6	1000		
ECWF6203□L( )	0.020	12.5	6.5	9.3	14.3	10.0	7.5	0.6			
ECWF6223□L( )	0.022	12.5	6.2	9.0	14.0	10.0	7.5	0.6			
ECWF6243□L( )	0.024	12.5	6.4	9.2	14.2	10.0	7.5	0.6	900		
ECWF6273□L( )	0.027	13.0	6.6	9.5	14.5	10.0	7.5	0.8			
ECWF6303□L( )	0.030	13.0	6.9	9.7	14.7	10.0	7.5	0.8			
ECWF6333□L( )	0.033	13.0	7.1	10.0	15.0	10.0	7.5	0.8	800		
ECWF6363□L( )	0.036	13.0	7.3	10.2	15.2	10.0	7.5	0.8			
ECWF6393□L( )	0.039	13.0	7.6	10.4	15.4	10.0	7.5	0.8			
ECWF6433□L( )	0.043	13.0	7.9	10.7	15.7	10.0	7.5	0.8	500		
ECWF6473□L( )	0.047	15.5	6.4	10.8	15.8	12.5	7.5	0.8			
ECWF6513□L( )	0.051	15.5	6.6	11.0	16.0	12.5	7.5	0.8			
ECWF6563□L( )	0.056	15.5	6.8	11.2	16.2	12.5	7.5	0.8	400		
ECWF6623□L( )	0.062	15.5	7.1	11.5	16.5	12.5	7.5	0.8			
ECWF6683□L( )	0.068	15.5	7.4	11.8	16.8	12.5	7.5	0.8			
ECWF6753□L( )	0.075	15.5	7.7	12.1	17.1	12.5	7.5	0.8			
ECWF6823□L( )	0.082	15.5	8.0	12.4	17.4	12.5	7.5	0.8			
ECWF6913□L( )	0.091	15.5	8.3	12.7	17.7	12.5	7.5	0.8			
ECWF6104□L( )	0.10	18.0	7.7	12.1	17.1	15.0	10.0	0.8	300		
ECWF6114□L( )	0.11	18.0	8.0	12.4	17.4	15.0	10.0	0.8			
ECWF6124□L( )	0.12	18.0	8.3	12.7	17.7	15.0	10.0	0.8			
ECWF6134□L( )	0.13	18.0	8.5	13.0	18.0	15.0	10.0	0.8			
ECWF6154□L( )	0.15	18.0	9.1	13.5	18.5	15.0	10.0	0.8			
ECWF6164□L( )	0.16	18.0	9.3	13.8	18.8	15.0	10.0	0.8			
ECWF6184□L( )	0.18	18.0	9.8	14.2	19.1	15.0	10.0	0.8			
ECWF6204□L( )	0.20	18.0	10.3	14.7	19.7	15.0	10.0	0.8			
ECWF6224□L( )	0.22	18.0	10.8	15.5	20.5	15.0	10.0	0.8			
ECWF6244□L( )	0.24	18.0	11.2	15.9	20.9	15.0	10.0	0.8	200		
ECWF6274□L( )	0.27	20.5	10.4	16.7	21.7	17.5	12.5	0.8	300		
ECWF6304□L( )	0.30	20.5	10.9	17.2	22.2	17.5	12.5	0.8			
ECWF6334□L( )	0.33	20.5	11.4	17.7	22.7	17.5	12.5	0.8			
ECWF6364□L( )	0.36	20.5	11.9	18.5	23.5	17.5	12.5	0.8	200		
ECWF6394□L( )	0.39	20.5	12.4	19.0	24.0	17.5	12.5	0.8			
ECWF6434□L( )	0.43	20.5	13.0	19.5	24.5	17.5	12.5	0.8			
ECWF6474□L( )	0.47	20.5	13.5	20.1	25.1	17.5	12.5	0.8	—		
ECWF6514□L( )	0.51	28.0	11.1	17.3	22.3	25.0	17.5	0.8			
ECWF6564□L( )	0.56	28.0	11.6	17.8	22.8	25.0	17.5	0.8			
ECWF6624□L( )	0.62	28.0	12.1	18.7	23.7	25.0	17.5	0.8			
ECWF6684□L( )	0.68	28.0	12.7	19.3	24.3	25.0	17.5	0.8			
ECWF6754□L( )	0.75	28.0	13.3	19.9	24.9	25.0	17.5	0.8			
ECWF6824□L( )	0.82	28.0	13.9	20.5	25.5	25.0	17.5	0.8			
ECWF6914□L( )	0.91	28.0	14.6	21.2	26.2	25.0	17.5	0.8			
ECWF6105□L( )	1.0	28.0	15.5	22.3	27.3	25.0	17.5	0.8			
ECWF6115□L( )	1.1	28.0	16.3	23.0	28.0	25.0	17.5	0.8			
ECWF6125□L( )	1.2	28.0	17.0	23.7	28.7	25.0	17.5	0.8	400	400	
ECWF6135□L( )	1.3	28.0	17.6	24.4	29.4	25.0	17.5	0.8			

\* □ : Capacitance tolerance code  
( ) : Suffix for lead crimped

## Metallized Polypropylene Film Capacitor

Type : **ECWF(A)**

Non-inductive construction using metallized polypropylene film with flame retardant epoxy resin coating.



### Features

- Small size
- Excellent frequency characteristics
- Low loss
- Low Hum Sound Noise
- Flame retardant epoxy resin coating
- 85 degree C , 85 %RH , 500 V.DC , 500 hours (630 V.DC)
- RoHS directive compliant

### Recommended applications

- 250 V.DC, 630 V.DC : High frequency and high current circuit
- 450 V.DC : Active filter circuit

### Explanation of part number

- 250 V.DC, 450 V.DC (Bulk)

1	2	3	4	5	6	7	8	9	10	11	12		
E	C	W	F							A			
Product code		Dielectric & construction		Rated voltage		Capacitance			Cap. Tol.	Suffix	Suffix		
				2	250 V.DC	H	±3 %						
						J	±5 %						
				2W	450 V.DC	J	±5 %						
						K	±10 %						
										Code	Lead Form		
										Blank	Straight		
										B	Crimped lead		
										Q	Crimped lead		
										C	Cut lead		

- 250 V.DC, 450 V.DC (Odd size taping)

1	2	3	4	5	6	7	8	9	10	11	12
<b>E</b>	<b>C</b>	<b>W</b>	<b>F</b>						<b>R</b>		<b>A</b>
Product code		Dielectric & construction		Rated voltage		Capacitance			Suffix	Cap. Tol.	Suffix

- 630 V.DC (Bulk, Odd size taping)

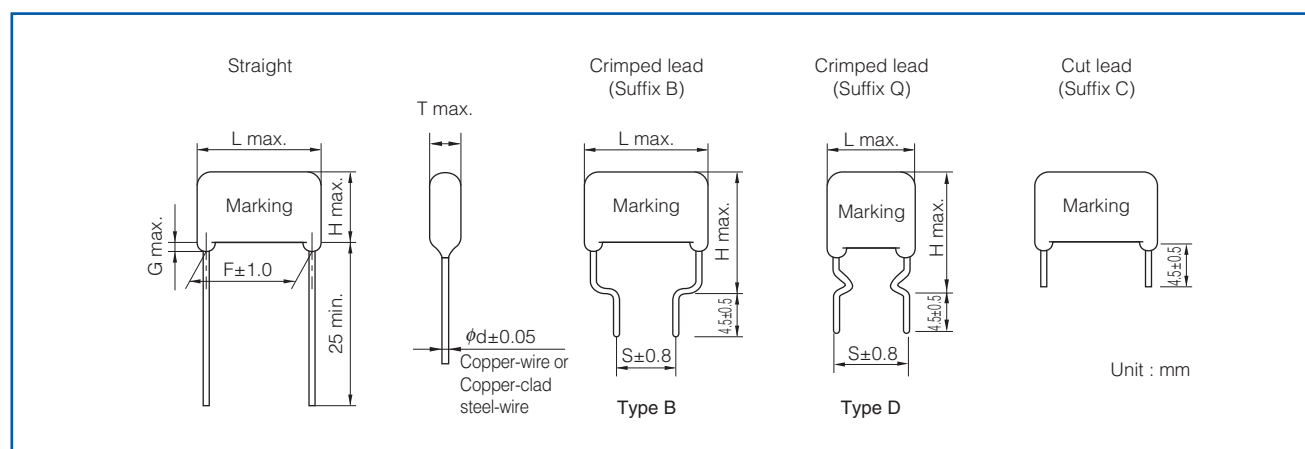
1	2	3	4	5	6	7	8	9	10	11	12
E	C	W	F	A	2	J				J	
Product code		Dielectric & construction			Rated voltage		Capacitance			Cap. Tol.	Suffix

## Specifications

Category temp. range (Including temperature-rise on unit surface)	- 40 °C to +105 °C	
Rated voltage	250 V.DC	
	450 V.DC (Derating of rated voltage by 1.25%/°C at more than 85 °C) Peak to peak voltage applied on the capacitor should be less than 240 Vp-p, and zero to peak voltage should be less than 450 Vo-p.	
	630 V.DC (Derating of rated voltage by 1.0%/°C at more than 85 °C)	
Capacitance range	250 V.DC	0.1 µF to 6.8 µF
	450 V.DC	0.1 µF to 4.7 µF
	630 V.DC	0.1 µF to 2.2 µF
Capacitance tolerance	250 V.DC	±3 % (H), ±5 % (J)
	450 V.DC	±5 % (J), ±10 % (K)
	630 V.DC	±5 % (J)
Dissipation factor (tan δ)	tan δ ≤ 0.1 % (20 °C, 1 kHz)	
Withstand voltage	Between terminals : Rated volt. (V.DC) × 150 %, 60 s	
Insulation resistance (IR)	250 V.DC	$C \leq 0.33 \mu\text{F}$ : IR ≥ 9000 MΩ $C > 0.33 \mu\text{F}$ : IR ≥ 3000 MΩ · µF (20 °C, 100 V.DC, 60 s)
	450 V.DC	$C \leq 0.33 \mu\text{F}$ : IR ≥ 30000 MΩ $C > 0.33 \mu\text{F}$ : IR ≥ 10000 MΩ · µF (20 °C, 100 V.DC, 60 s)
	630 V.DC	$C \leq 0.33 \mu\text{F}$ : IR ≥ 9000 MΩ $C > 0.33 \mu\text{F}$ : IR ≥ 3000 MΩ · µF (20 °C, 500 V.DC, 60 s)

\* 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".

## Dimensions

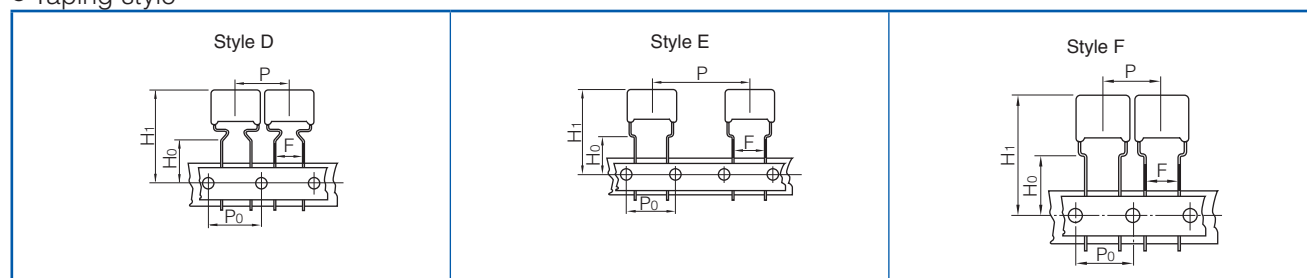


## Packaging specifications for bulk package

- Packing quantity : 100 pcs./bag

## Taping specifications for automatic insertion

### ● Taping style



\* Refer to the page of taping specifications.

### ● Packaging specifications

Type	Rated voltage (V.DC)	Capacitance range (μF)	Taping style							Packing	suffix
			AD	AS	B	C	D	E	F		
ECWF(A)	250	0.10 to 0.47					○			Ammo	R(    ) A
		0.56 to 3.9						○			
	450	0.10 to 0.47							○		
		0.56 to 2.2						○			
	630	0.10 to 0.68						○			J4

### ● Lead spacing

Style	Lead spacing
D	7.5 mm
E	7.5 mm
F	7.5 mm

## Rating · Dimensions · Quantity

● Rated voltage : 250 V.DC, Capacitance tolerance : ± 3 % (H), ± 5 % (J)

Part No.	Cap. (μF)	Dimensions (mm)										Min. order Q'ty	
		L max.	T max.	H max.			F	S		G max.	φd	Taping 7.5 mm	Bulk Straight · Crimped lead
				Straight	Crimped lead (Suffix B)	Crimped lead (Suffix Q)		Crimped lead (Suffix B)	Crimped lead (Suffix Q)				
ECWF2104□A( )	0.10	13.0	5.0		14.1	14.1		7.5	10.0		0.6	1300	500
ECWF2124□A( )	0.12	13.0	5.3		14.4	14.4		7.5	10.0		0.6	1200	
ECWF2154□A( )	0.15	13.0	5.6		14.7	14.7		7.5	10.0		0.6	1100	
ECWF2184□A( )	0.18	13.0	5.9		15.1	15.1		7.5	10.0		0.6	1000	
ECWF2224□A( )	0.22	13.0	6.3		15.4	15.4		7.5	10.0		0.6	900	
ECWF2274□A( )	0.27	13.0	6.8		15.9	15.9		7.5	10.0		0.6	800	
ECWF2334□A( )	0.33	13.0	7.3		16.4	16.4		7.5	10.0		0.6	700	
ECWF2394□A( )	0.39	13.0	7.8		16.9	16.9		7.5	10.0		0.6		
ECWF2474□A( )	0.47	13.0	8.4		17.6	17.6		7.5	10.0		0.6		
ECWF2564□A( )	0.56	18.1	6.9		16.4	18.4		7.5	15.0		0.8		
ECWF2684□A( )	0.68	18.1	7.4		17.0	19.0		7.5	15.0		0.8	400	
ECWF2824□A( )	0.82	18.1	8.0		17.6	19.6		7.5	15.0		0.8		
ECWF2105□A( )	1.0	18.1	8.5	13.3	18.3	20.3	15.0	7.5	15.0	1.5	0.8	300	
ECWF2125□A( )	1.2	18.8	9.5	14.6	19.6	21.6	15.0	7.5	15.0	1.5	0.8		
ECWF2155□A( )	1.5	18.8	10.5	15.6	20.6	22.6	15.0	7.5	15.0	1.5	0.8		
ECWF2185□A( )	1.8	18.8	11.4	16.5	21.5	23.5	15.0	7.5	15.0	1.5	0.8	200	
ECWF2225□A( )	2.2	18.8	12.6	17.6	22.6	24.6	15.0	7.5	15.0	1.5	0.8		
ECWF2275□A( )	2.7	23.8	11.4	17.2	22.2	24.2	20.0	12.5	20.0	1.5	0.8	300	
ECWF2335□A( )	3.3	23.8	12.5	18.3	23.3	25.3	20.0	12.5	20.0	1.5	0.8		
ECWF2395□A( )	3.9	23.8	13.5	19.3	24.3	26.3	20.0	12.5	20.0	1.5	0.8		
ECWF2475□A( )	4.7	23.8	14.8	20.6	25.6	27.6	20.0	12.5	20.0	1.5	0.8		
ECWF2565□A( )	5.6	23.8	16.2	21.9	26.9	28.9	20.0	12.5	20.0	1.5	0.8		
ECWF2685□A( )	6.8	23.8	17.8	23.5	28.5	30.5	20.0	12.5	20.0	1.5	0.8		

\* □ : Capacitance tolerance code  
( ) : Suffix for lead crimped

## Rating · Dimensions · Quantity

● Rated voltage : 450 V.DC, Capacitance tolerance :  $\pm 5\%$ (J),  $\pm 10\%$ (K)

Part No.	Cap. (μF)	Dimensions (mm)										Min. order Q'ty		
		L max.	T max.	H max.			F	S		G max.	ϕd	Taping	Bulk	
				Straight	Crimped lead (Suffix B)	Crimped lead (Suffix Q)		Crimped lead (Suffix B)	Crimped lead (Suffix Q)			7.5 mm	Straight - Crimped lead	
ECWF2W104□A( )	0.10	13.0	5.1	—	14.3	14.3	—	7.5	10.0	1.5	0.6	1200	500	
ECWF2W124□A( )	0.12	13.0	5.4		14.5	14.5		7.5	10.0	1.5	0.6			
ECWF2W154□A( )	0.15	13.0	5.7		14.9	14.9		7.5	10.0	1.5	0.6			
ECWF2W184□A( )	0.18	13.0	6.1		15.2	15.2		7.5	10.0	1.5	0.6	1000		
ECWF2W224□A( )	0.22	13.0	6.5		15.6	15.6		7.5	10.0	1.5	0.6			
ECWF2W274□A( )	0.27	13.0	7.0		16.1	16.1		7.5	10.0	1.5	0.6			
ECWF2W334□A( )	0.33	13.0	7.6		16.7	16.7		7.5	10.0	1.5	0.6	800		
ECWF2W394□A( )	0.39	13.0	8.1		17.2	17.2		7.5	10.0	1.5	0.6			
ECWF2W474□A( )	0.47	13.0	8.7		17.9	17.9		7.5	10.0	1.5	0.6	600		
ECWF2W564□A( )	0.56	18.1	7.0	11.5	16.5	18.5	15.0	7.5	15.0	1.5	0.8	400		
ECWF2W684□A( )	0.68	18.1	7.5	12.1	17.1	19.1	15.0	7.5	15.0	1.5	0.8			
ECWF2W824□A( )	0.82	18.1	8.2	12.7	17.7	19.7	15.0	7.5	15.0	1.5	0.8			
ECWF2W105□A( )	1.0	18.1	9.3	12.6	17.6	19.6	15.0	7.5	15.0	1.5	0.8	300		
ECWF2W125□A( )	1.2	18.8	9.7	14.7	19.7	21.7	15.0	7.5	15.0	1.5	0.8			
ECWF2W155□A( )	1.5	18.8	10.7	15.8	20.8	22.8	15.0	7.5	15.0	1.5	0.8			
ECWF2W185□A( )	1.8	18.8	11.6	16.7	21.7	23.7	15.0	7.5	15.0	1.5	0.8	200		
ECWF2W225□A( )	2.2	18.8	12.8	17.9	22.9	24.9	15.0	7.5	15.0	1.5	0.8			
ECWF2W275□A( )	2.7	26.3	10.6	16.5	21.5	23.5	22.5	15.0	22.5	1.5	0.8	—		
ECWF2W335□A( )	3.3	26.3	11.7	17.5	22.5	24.5	22.5	15.0	22.5	1.5	0.8			
ECWF2W395□A( )	3.9	26.3	12.6	18.4	23.4	25.4	22.5	15.0	22.5	1.5	0.8			
ECWF2W475□A( )	4.7	26.3	13.8	19.6	24.6	26.6	22.5	15.0	22.5	1.5	0.8			

\* □ : Capacitance tolerance code  
( ) : Suffix for lead crimped

● Rated voltage : 630 V.DC, Capacitance tolerance :  $\pm 5\%$ (J)

Part No.	Cap. ( $\mu$ F)	Dimensions (mm)										Min. order Q'ty				
		L max.	T max.	H max.			F	S		G max.	$\phi$ d	Taping	Bulk			
				Straight	Crimped lead (Suffix B)	Crimped lead (Suffix Q)		Crimped lead (Suffix B)	Crimped lead (Suffix Q)			7.5 mm	Straight	Crimped lead		
ECWFA2J104J( )	0.10	18.2	5.2	10.4	15.4	15.4	15.0	7.5	15.0	1.5	0.6	600	1000	1000		
ECWFA2J124J( )	0.12	18.2	5.5	10.8	15.8	15.8	15.0	7.5	15.0	1.5	0.6					
ECWFA2J154J( )	0.15	18.2	6.0	11.2	16.2	16.2	15.0	7.5	15.0	1.5	0.6	500				
ECWFA2J184J( )	0.18	18.2	6.5	11.7	16.7	16.7	15.0	7.5	15.0	1.5	0.6					
ECWFA2J224J( )	0.22	18.2	7.1	12.3	17.3	17.3	15.0	7.5	15.0	1.5	0.6	400				
ECWFA2J274J( )	0.27	18.2	7.8	12.9	17.9	17.9	15.0	7.5	15.0	1.5	0.6					
ECWFA2J334J( )	0.33	18.2	8.5	13.6	18.6	18.6	15.0	7.5	15.0	1.5	0.6	300				
ECWFA2J394J( )	0.39	18.2	9.2	14.3	19.3	19.3	15.0	7.5	15.0	1.5	0.6					
ECWFA2J474J( )	0.47	18.2	10.0	15.1	20.1	20.1	15.0	7.5	15.0	1.5	0.6					
ECWFA2J564J( )	0.56	18.2	10.9	16.0	21.0	21.0	15.0	7.5	15.0	1.5	0.6					
ECWFA2J684J( )	0.68	18.2	12.0	17.1	22.1	22.1	15.0	7.5	15.0	1.5	0.6	200	800	600		
ECWFA2J824J( )	0.82	26.0	10.1	15.3	20.3	22.3	22.5	15.0	22.5	1.5	0.8	-				
ECWFA2J105J( )	1.0	26.0	11.1	16.2	21.2	23.2	22.5	15.0	22.5	1.5	0.8		600			
ECWFA2J125J( )	1.2	26.0	12.1	17.2	22.2	24.2	22.5	15.0	22.5	1.5	0.8				500	
ECWFA2J155J( )	1.5	26.0	13.5	18.6	23.6	25.6	22.5	15.0	22.5	1.5	0.8		400			
ECWFA2J185J( )	1.8	26.0	14.8	19.8	24.8	26.8	22.5	15.0	22.5	1.5	0.8				500	
ECWFA2J225J( )	2.2	26.0	16.3	21.4	26.4	28.4	22.5	15.0	22.5	1.5	0.8		500			

\* ( ) : Suffix for lead crimped

## Metallized Polypropylene Film Capacitor

Type : **ECWFD**

Non-inductive construction using metallized Polypropylene film with flame retardant epoxy resin coating.



### Features

- Small size
- Low loss
- Low Hum Sound Noise
- Excellent frequency characteristics
- Flame-retardant epoxy resin coating
- RoHS directive compliant

### Recommended applications

- Active filter circuit
- High frequency circuit

### Explanation of part number

- Standard product

1	2	3	4	5	6	7	8	9	10	11	12																						
E	C	W	F	D																													
Product code		Dielectric & construction			Rated voltage		Capacitance			Cap. Tol.	Suffix																						
					<table><tr><td>2W</td><td>450 V.DC</td></tr><tr><td>2J</td><td>630 V.DC</td></tr></table>		2W	450 V.DC	2J	630 V.DC	<table><tr><td>J</td><td>±5 %</td></tr><tr><td>K</td><td>±10 %</td></tr></table>			J	±5 %	K	±10 %	<table><tr><th>Code</th><th>Lead Form</th></tr><tr><td>Blank</td><td>Straight</td></tr><tr><td>B</td><td>Crimped lead</td></tr><tr><td>Q</td><td>Crimped lead</td></tr><tr><td>C</td><td>Cut lead</td></tr><tr><td>3</td><td>Crimped taping (Ammo)</td></tr><tr><td>4</td><td>Odd size taping</td></tr></table>		Code	Lead Form	Blank	Straight	B	Crimped lead	Q	Crimped lead	C	Cut lead	3	Crimped taping (Ammo)	4	Odd size taping
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- Short lead space product 450 V.DC (0.47  $\mu$ F, 0.68  $\mu$ F, 1.0  $\mu$ F), 630 V.DC (1.0  $\mu$ F)

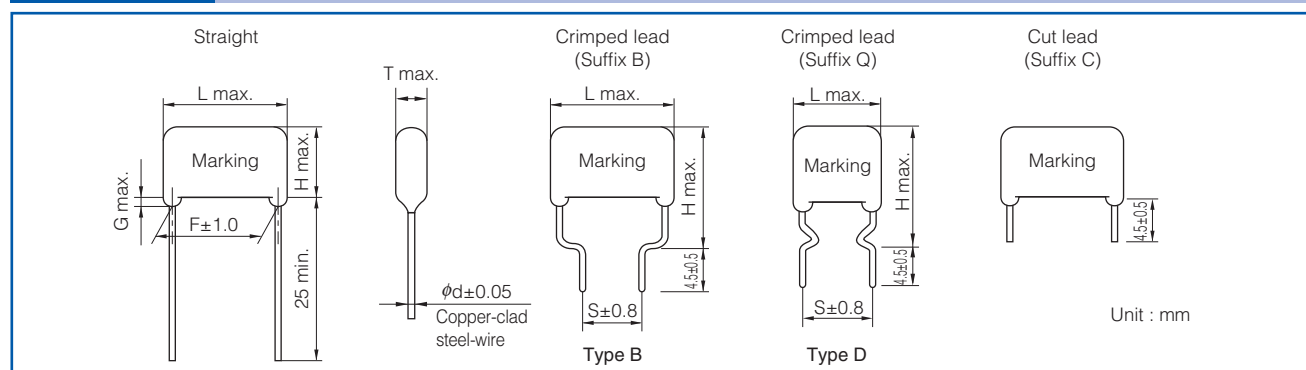
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4	Odd size taping																																		

## Specifications

Category temp. range (Including temperature-rise on unit surface)	450 V.DC	- 40 °C to +110 °C
	630 V.DC	- 40 °C to +105 °C
Rated voltage	450 V.DC (Derating of rated voltage by 0.62%/°C at more than 85°C Peak to peak voltage applied on the capacitor should be less than 240 Vp-p, and zero to peak voltage should be less than 450 Vo-p. 630 V.DC (Derating of rated voltage by 1.0%/°C at more than 85°C Peak to peak voltage applied on the capacitor should be less than 400 Vp-p, and zero to peak voltage should be less than 630 Vo-p.	
Capacitance range	450 V.DC	0.1 µF to 4.7 µF
	630 V.DC	0.047 µF to 4.7 µF
Capacitance tolerance	±5 % (J), ±10 % (K)	
Dissipation factor (tan δ)	tan δ ≤ 0.1 % ( 20 °C, 1 kHz )	
Withstand voltage	Between terminals: Rated voltage (V.DC) × 150 %, 60 s	
Insulation resistance (IR)	450 V.DC	C ≤ 0.33 µF : IR ≥ 30000 MΩ C > 0.33 µF : IR ≥ 10000 MΩ · µF (20 °C, 100 V.DC, 60 s)
	630 V.DC	C ≤ 0.33 µF : IR ≥ 9000 MΩ C > 0.33 µF : IR ≥ 3000 MΩ · µF (20 °C, 500 V.DC, 60 s)

\* 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".

## Dimensions

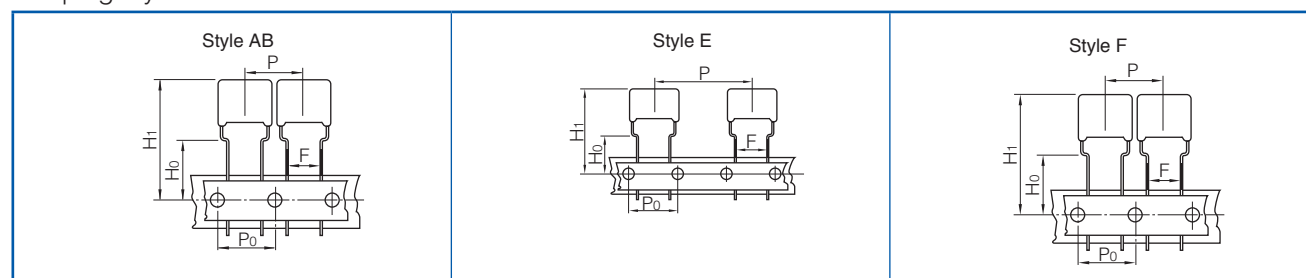


## Packaging specifications for bulk package

- Packing quantity : 100 pcs./bag

## Taping specifications for automatic insertion

- Taping style



\* Refer to the page of taping specifications.

- Taping style

Type	Rated voltage (V.DC)	Capacitance range (µF)	Taping style								Packing	suffix
			AD	AS	AB	B	C	D	E	F		
ECWFD	450	0.10 to 0.39			○						Ammo	3
		0.47, 0.68, 1.0			○							P3/Q3
		0.10 to 0.39								○		4
		0.47, 0.68, 1.0								○		P4/Q4
	630	0.47 to 2.2							○			4
		0.047 to 0.22								○		4
		0.27 to 0.82							○			4
		1.0							○			P4/Q4

- Lead spacing

Style	Lead spacing
AB	5.0 mm
E	7.5 mm
F	7.5 mm

## Rating · Dimensions · Quantity

● Rated voltage : 450 V.DC, Capacitance tolerance :  $\pm 5\%$  (J),  $\pm 10\%$  (K),

Part No.	Cap. (μF)	Dimensions (mm)										Min. order Q'ty				
		L max.	T max.	H max.			F	S		G max.	φd	Taping		Bulk		
				Straight	Crimped lead (Suffix B)	Crimped lead (Suffix Q)		Crimped lead (Suffix B)	Crimped lead (Suffix Q)			5.0 mm	7.5 mm	Straight	Crimped lead	
ECWFD2W104□( )	0.10	12.6	4.5	—	13.9	13.9	—	7.5	10.0	—	0.6	1500	1400	—	1000	
ECWFD2W124□( )	0.12	12.6	4.6		14.0	14.0		7.5	10.0		0.6					
ECWFD2W154□( )	0.15	12.6	4.6		14.1	14.1		7.5	10.0		0.6					
ECWFD2W184□( )	0.18	12.6	4.8		14.3	14.3		7.5	10.0		0.6	1400	1300			
ECWFD2W224□( )	0.22	12.6	5.0		14.6	14.6		7.5	10.0		0.6		1200			
ECWFD2W274□( )	0.27	12.6	5.3		15.0	15.0		7.5	10.0		0.6	1300				
ECWFD2W334□( )	0.33	12.6	5.6		15.4	15.4		7.5	10.0		0.6	1200	1100			
ECWFD2W394□( )	0.39	12.6	6.0		15.7	15.7		7.5	10.0		0.6	1100	1000			
ECWFD2W474P( ) ECWFD2W474Q( )	0.47	12.6	6.5	11.2	16.2	16.2	10.0	7.5	10.0	1.5	0.6	1000	900	1000		
ECWFD2W474□( )	0.47	17.5	5.8	9.0	14.0	16.0	15.0	7.5	15.0	1.5	0.8	—	500			
ECWFD2W564□( )	0.56	17.5	6.2	9.4	14.4	16.4	15.0	7.5	15.0	1.5	0.8	—				
ECWFD2W684P( ) ECWFD2W684Q( )	0.68	12.6	7.7	12.4	17.4	17.4	10.0	7.5	10.0	1.5	0.6	800	700			
ECWFD2W684□( )	0.68	17.5	6.7	9.9	14.9	16.9	15.0	7.5	15.0	1.5	0.8	—	400			
ECWFD2W824□( )	0.82	17.5	7.2	10.4	15.4	17.4	15.0	7.5	15.0	1.5	0.8	—				
ECWFD2W105P( ) ECWFD2W105Q( )	1.0	12.6	9.2	13.9	18.9	18.9	10.0	7.5	10.0	1.5	0.6	700	600			
ECWFD2W105□( )	1.0	17.5	7.8	11.0	16.0	18.0	15.0	7.5	15.0	1.5	0.8	—	400			
ECWFD2W125□( )	1.2	17.5	8.5	11.6	16.6	18.6	15.0	7.5	15.0	1.5	0.8		300			
ECWFD2W155□( )	1.5	17.5	9.3	12.5	17.5	19.5	15.0	7.5	15.0	1.5	0.8					
ECWFD2W185□( )	1.8	17.5	10.1	13.3	18.3	20.3	15.0	7.5	15.0	1.5	0.8					
ECWFD2W225□( )	2.2	17.5	11.1	14.3	19.3	21.3	15.0	7.5	15.0	1.5	0.8		200			
ECWFD2W275□( )	2.7	25.3	9.0	13.7	18.7	20.7	22.5	15.0	22.5	1.5	0.8		—			800
ECWFD2W335□( )	3.3	25.3	9.8	14.6	19.6	21.6	22.5	15.0	22.5	1.5	0.8					
ECWFD2W395□( )	3.9	25.3	10.7	15.4	20.4	22.4	22.5	15.0	22.5	1.5	0.8					
ECWFD2W475□( )	4.7	25.3	11.7	16.4	21.4	23.4	22.5	15.0	22.5	1.5	0.8					600

\* □ : Capacitance tolerance code  
( ) : Suffix for lead crimped

Note) Part Number marked with ★ is Short Lead Space Product.



## Rating · Dimensions · Quantity

● Rated voltage : 630 V.DC, Capacitance tolerance :  $\pm 5\%$  (J),  $\pm 10\%$  (K),

Part No.	Cap. ( $\mu$ F)	Dimensions (mm)										Min. order Q'ty		
		L max.	T max.	H max.			F	S		G max.	$\phi$ d	Taping		Bulk
				Straight	Crimped lead (Suffix B)	Crimped lead (Suffix Q)		Crimped lead (Suffix B)	Crimped lead (Suffix Q)			7.5 mm	Straight	Crimped lead
ECWFD2J473□( )	0.047	12.6	4.4	–	12.8	12.8	–	7.5	10.0	–	0.6	1300	–	1000
ECWFD2J563□( )	0.056	12.6	4.7		13.1	13.1		7.5	10.0		0.6	1200		
ECWFD2J683□( )	0.068	12.6	5.0		13.4	13.4		7.5	10.0		0.6	1000		
ECWFD2J823□( )	0.082	12.6	5.4		13.7	13.7		7.5	10.0		0.6	900		
ECWFD2J104□( )	0.10	12.6	5.8		14.2	14.2		7.5	10.0		0.6	700		
ECWFD2J124□( )	0.12	12.6	6.2		14.6	14.6		7.5	10.0		0.6	500		
ECWFD2J154□( )	0.15	12.6	6.8		15.2	15.2		7.5	10.0		0.6	400		
ECWFD2J184□( )	0.18	12.6	7.4		15.7	15.7		7.5	10.0		0.6	300		
ECWFD2J224□( )	0.22	12.6	8.1		16.4	16.4		7.5	10.0		0.6	200		
ECWFD2J274□( )	0.27	17.8	6.0	11.0	16.0	18.0	15.0	7.5	15.0	1.5	0.8	500	1000	1000
ECWFD2J334□( )	0.33	17.8	6.6	11.5	16.5	18.5	15.0	7.5	15.0	1.5	0.8	400		
ECWFD2J394□( )	0.39	17.8	7.1	12.0	17.0	19.0	15.0	7.5	15.0	1.5	0.8	300		
ECWFD2J474□( )	0.47	17.8	7.8	12.7	17.7	19.7	15.0	7.5	15.0	1.5	0.8	200		
ECWFD2J564□( )	0.56	17.8	8.4	13.3	18.3	20.3	15.0	7.5	15.0	1.5	0.8	100		
ECWFD2J684□( )	0.68	17.8	9.3	14.2	19.2	21.2	15.0	7.5	15.0	1.5	0.8	80		
ECWFD2J824□( )	0.82	17.8	10.2	15.1	20.1	22.1	15.0	7.5	15.0	1.5	0.8	60		
★ ECWFD2J105P( )	1.0	17.8	11.2	16.1	21.1	23.1	15.0	7.5	15.0	1.5	0.8	50		
ECWFD2J105Q( )	1.0	17.8	11.2	16.1	21.1	23.1	15.0	7.5	15.0	1.5	0.8	40		
ECWFD2J105□( )	1.0	25.3	8.4	13.5	18.5	20.5	22.5	15.0	22.5	1.5	0.8	300	–	400
ECWFD2J125□( )	1.2	25.3	9.2	14.3	19.3	21.3	22.5	15.0	22.5	1.5	0.8	200		
ECWFD2J155□( )	1.5	25.3	10.3	15.5	20.5	22.5	22.5	15.0	22.5	1.5	0.8	150		
ECWFD2J185□( )	1.8	25.3	11.2	16.5	21.5	23.5	22.5	15.0	22.5	1.5	0.8	100		
ECWFD2J225□( )	2.2	25.3	12.4	17.7	22.7	24.7	22.5	15.0	22.5	1.5	0.8	80		
ECWFD2J275□( )	2.7	25.3	13.8	19.2	24.2	26.2	22.5	15.0	22.5	1.5	0.8	60		
ECWFD2J335□( )	3.3	25.3	15.3	20.7	25.7	27.7	22.5	15.0	22.5	1.5	0.8	50		
ECWFD2J395□( )	3.9	25.3	16.6	22.1	27.1	29.1	22.5	15.0	22.5	1.5	0.8	40		
ECWFD2J475□( )	4.7	25.3	18.3	23.9	28.9	30.9	22.5	15.0	22.5	1.5	0.8	30		

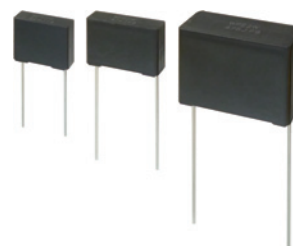
\* □ : Capacitance tolerance code  
( ) : Suffix for lead crimped

Note) Part Number marked with ★ is Short Lead Space Product.

## Metallized Polypropylene Film Capacitor

Type : **ECWFE**

Non-inductive construction using metallized Polypropylene film with flame retardant plastic case.



### Features

- Small size
- Excellent frequency characteristics
- Low loss
- Flame retardant plastic case and non-combustible resin
- Low Hum Sound Noise
- RoHS directive compliant

### Recommended applications

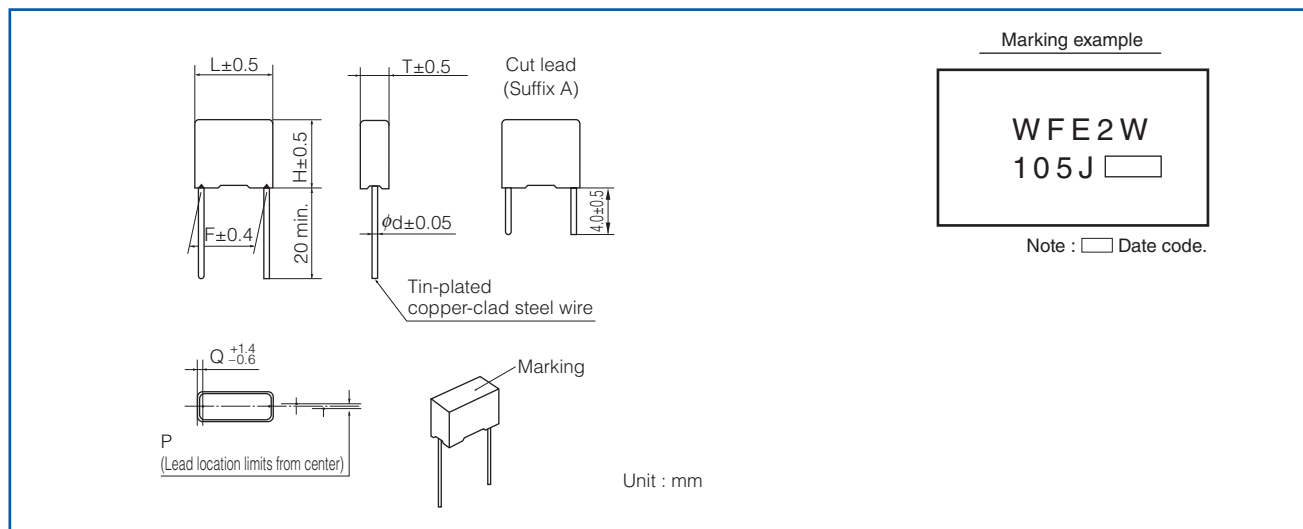
- Active filter circuit
- High frequency circuit

### Explanation of part number

- Standard

1	2	3	4	5	6	7	8	9	10	11	12
E	C	W	F	E							
Product code		Dielectric & construction			Rated voltage		Capacitance			Cap. Tol.	Suffix
					2W 450 V.DC 2J 630 V.DC		J ±5 % K ±10 %				

## Dimensions



## Rating · Dimensions · Quantity

- Rated voltage : 450 V.DC, Capacitance tolerance :  $\pm 5\%$  (J),  $\pm 10\%$  (K),

Part No.	Cap. ( $\mu$ F)	Dimensions (mm)							Min. order Q'ty	
		L	T	H	F	$\phi$ d	P	Q	Straight	Cut lead
ECWFE2W104□( )	0.10	13.0	5.0	10.5	10.0	0.6	0 $\pm$ 0.8	1.5	1000	1000
ECWFE2W154□( )	0.15	13.0	5.0	10.5	10.0	0.6	0 $\pm$ 0.8	1.5		
ECWFE2W224□( )	0.22	13.0	6.0	12.0	10.0	0.6	0 $\pm$ 0.8	1.5		
ECWFE2W334□( )	0.33	13.0	6.0	12.0	10.0	0.6	0 $\pm$ 0.8	1.5		
★ ECWFE2W474P( ) ECWFE2W474Q( )	0.47	13.0	7.0	12.5	10.0	0.6	0 $\pm$ 0.8	1.5		
ECWFE2W474□( )	0.47	17.5	6.0	11.5	15.0	0.8	0 $\pm$ 0.8	1.3		
ECWFE2W684□( )	0.68	17.5	7.0	12.5	15.0	0.8	0 $\pm$ 0.8	1.3		
ECWFE2W105□( )	1.0	17.5	7.0	12.5	15.0	0.8	0 $\pm$ 0.8	1.3		
ECWFE2W155□( )	1.5	17.5	10.0	15.5	15.0	0.8	0 $\pm$ 0.8	1.3		
ECWFE2W225□( )	2.2	17.5	10.0	15.5	15.0	0.8	0 $\pm$ 0.8	1.3		
ECWFE2W335□( )	3.3	26.0	10.0	17.0	22.5	0.8	0 $\pm$ 0.8	1.8	500	300
ECWFE2W475□( )	4.7	26.0	12.0	19.0	22.5	0.8	0 $\pm$ 0.8	1.8	300	200

\* □ : Capacitance tolerance code  
( ) : Suffix for lead crimped

Note) Part Number marked with ★ is Short Lead Space Product.

- Rated voltage : 630 V.DC, Capacitance tolerance :  $\pm 5\%$  (J),  $\pm 10\%$  (K),

Part No.	Cap. ( $\mu$ F)	Dimensions (mm)							Min. order Q'ty	
		L	T	H	F	$\phi$ d	P	Q	Straight	Cut lead
ECWFE2J104□( )	0.10	17.5	5.0	10.5	15.0	0.6	0 $\pm$ 0.8	1.3	1000	1000
ECWFE2J154□( )	0.15	17.5	6.0	11.5	15.0	0.6	0 $\pm$ 0.8	1.3		
ECWFE2J224□( )	0.22	17.5	7.0	12.5	15.0	0.6	0 $\pm$ 0.8	1.3		
ECWFE2J334□( )	0.33	17.5	8.5	14.5	15.0	0.6	0 $\pm$ 0.8	1.3		
ECWFE2J474□( )	0.47	17.5	10.0	15.5	15.0	0.6	0 $\pm$ 0.8	1.3		
ECWFE2J684□( )	0.68	17.5	11.0	17.5	15.0	0.6	0 $\pm$ 0.8	1.3	600	600
ECWFE2J105□( )	1.0	26.0	10.0	17.0	22.5	0.8	0 $\pm$ 0.8	1.8	500	
ECWFE2J155□( )	1.5	26.0	12.0	19.0	22.5	0.8	0 $\pm$ 0.8	1.8	300	200
ECWFE2J225□( )	2.2	26.0	16.0	23.0	22.5	0.8	0 $\pm$ 0.8	1.8	200	

\* □ : Capacitance tolerance code  
( ) : Suffix for lead crimped

## Metallized Polypropylene Film Capacitor

Type : **ECWH(V)**

Non-inductive construction using metallized polypropylene film with flame retardant epoxy resin coating.



### Features

- Low-loss
- Excellent electrical characteristics
- Flame retardant epoxy resin coating
- RoHS directive compliant

### Recommended applications

- High frequency high voltage circuit  
(General resonance, inverter circuit)

### Explanation of part number

1	2	3	4	5	6	7	8	9	10	11	12																		
E	C	W	H							V																			
Product code		Dielectric & construction		Rated voltage		Capacitance		Cap. Tol.		Suffix	Suffix																		
				<table><tr><td>10</td><td>1000 V.DC</td></tr><tr><td>12</td><td>1250 V.DC</td></tr><tr><td>16</td><td>1600 V.DC</td></tr><tr><td>20</td><td>2000 V.DC</td></tr></table>		10	1000 V.DC	12	1250 V.DC	16	1600 V.DC	20	2000 V.DC	<table><tr><td>H</td><td>±3 %</td></tr><tr><td>J</td><td>±5 %</td></tr></table>		H	±3 %	J	±5 %	<table><tr><th>Code</th><th>Lead Form</th></tr><tr><td>Blank</td><td>Straight</td></tr><tr><td>B</td><td>Crimped lead</td></tr><tr><td>C</td><td>Cut lead</td></tr></table>		Code	Lead Form	Blank	Straight	B	Crimped lead	C	Cut lead
10	1000 V.DC																												
12	1250 V.DC																												
16	1600 V.DC																												
20	2000 V.DC																												
H	±3 %																												
J	±5 %																												
Code	Lead Form																												
Blank	Straight																												
B	Crimped lead																												
C	Cut lead																												

- Odd size taping

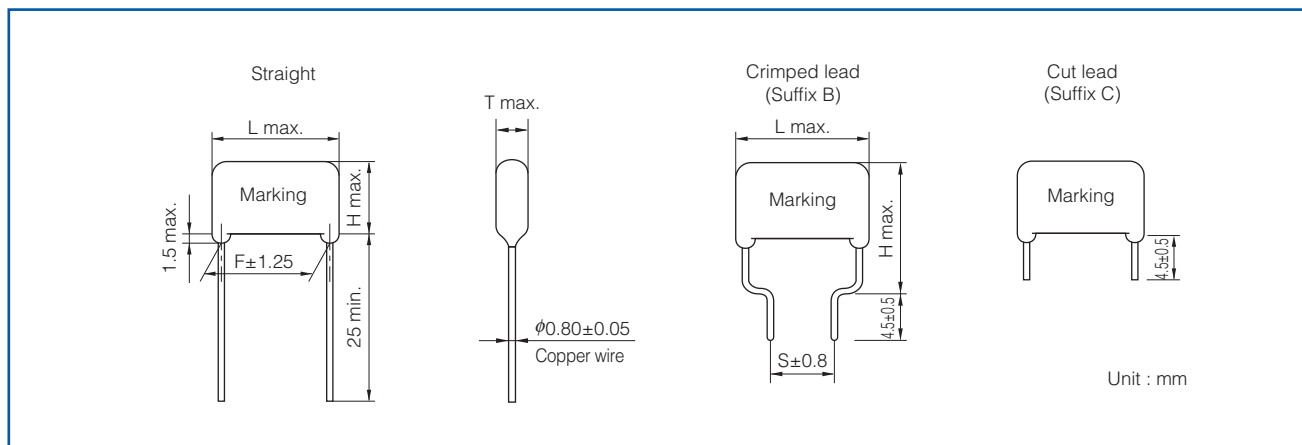
1	2	3	4	5	6	7	8	9	10	11	12
<b>E</b>	<b>C</b>	<b>W</b>	<b>H</b>						<b>R</b>		<b>V</b>
Product code		Dielectric & construction		Rated voltage		Capacitance		Cap. Tol.		Suffix	Suffix

### Specifications

Category temp. range (Including temperature-rise on unit surface)	- 40 °C to +105 °C	
Rated voltage	1000 V.DC, 1250 V.DC (1000 Vp-p) 1600 V.DC (1200 Vp-p), 2000 V.DC (1500 Vp-p) (Derating of rated voltage by 1.25 %/°C at more than 85 °C)	
Capacitance range	1000 V.DC	0.0075 μF to 0.10 μF
	1250 V.DC	0.0036 μF to 0.10 μF
	1600 V.DC	0.0013 μF to 0.056 μF
	2000 V.DC	0.001 μF to 0.015 μF
Capacitance tolerance	±3 % (H), ±5 % (J)	
Dissipation factor (tan δ)	tan δ ≤ 0.1 % (20 °C, 1 kHz) tan δ ≤ 0.2 % (20 °C, 10 kHz)	
Withstand voltage	Between terminals : Rated volt. (V.DC) × 150 %, 60 s Between terminals to enclosure : 1500 V.AC 60 s	
Insulation resistance (IR)	IR ≥ 30000 MΩ (20 °C, 500 V.DC, 60 s)	

\* 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".

## Dimensions

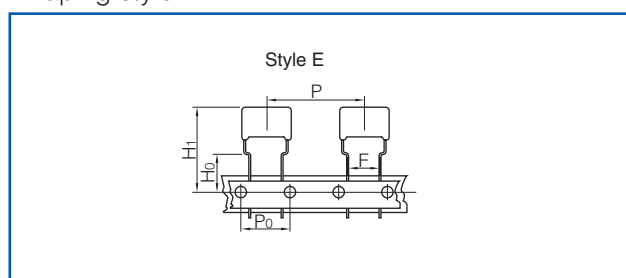


## Packaging specifications for bulk package

- Packing quantity : 100 pcs./bag

## Taping specifications for automatic insertion

- Taping style



\* Refer to the page of taping specifications.

- Taping style

Type	Rated voltage (V.DC)	Capacitance range (μF)	Taping style						Packing	suffix
			AD	AS	B	C	D	E		
ECWH(V)	1000	0.0075 to 0.10						○	Ammo	R( ) V
	1250	0.0036 to 0.051						○		R( ) V
	1600	0.0013 to 0.020						○		R( ) V
	2000	0.0010 to 0.015						○		R( ) V

\* See the column "Rating · Dimensions · Quantity" for packing quantity

- Lead spacing

Style	Lead spacing
E	7.5 mm

## Rating · Dimensions · Quantity

● Rated voltage : 1000 V.DC, Capacitance tolerance :  $\pm 3\%$  (H),  $\pm 5\%$  (J)

Part No.	Cap. ( $\mu$ F)	Dimensions (mm)							Min. order Q'ty		
		L max.	T max.	H max.		F		S	$\phi$ d	Taping	Bulk
				Straight	Crimped lead	Straight	Crimped lead	7.5 mm		Straight · Crimped lead	
ECWH10752□V( )	0.0075	18.0	6.0	12.5	17.5	15.0	10.0	0.8	500	500	
ECWH10822□V( )	0.0082	18.0	6.0	12.5	17.5	15.0	10.0	0.8			
ECWH10912□V( )	0.0091	18.0	6.0	13.0	18.0	15.0	10.0	0.8			
ECWH10103□V( )	0.010	18.0	6.5	13.0	18.0	15.0	10.0	0.8			
ECWH10113□V( )	0.011	18.0	6.5	13.5	18.5	15.0	10.0	0.8			
ECWH10123□V( )	0.012	18.0	6.5	13.5	18.5	15.0	10.0	0.8			
ECWH10133□V( )	0.013	18.0	7.0	13.5	18.5	15.0	10.0	0.8			
ECWH10153□V( )	0.015	18.0	7.0	14.0	19.0	15.0	10.0	0.8			
ECWH10163□V( )	0.016	18.0	7.5	14.0	19.0	15.0	10.0	0.8			
ECWH10183□V( )	0.018	18.0	7.5	14.5	19.5	15.0	10.0	0.8			
ECWH10203□V( )	0.020	18.0	8.0	15.0	20.0	15.0	10.0	0.8	400		
ECWH10223□V( )	0.022	18.0	8.5	15.0	20.0	15.0	10.0	0.8			
ECWH10243□V( )	0.024	18.0	8.5	15.5	20.5	15.0	10.0	0.8			
ECWH10273□V( )	0.027	18.0	9.0	16.0	21.0	15.0	10.0	0.8	300		
ECWH10303□V( )	0.030	18.0	9.5	16.5	21.5	15.0	10.0	0.8			
ECWH10333□V( )	0.033	23.0	7.5	16.0	21.0	20.0	15.0	0.8	400		
ECWH10363□V( )	0.036	23.0	7.5	16.0	21.0	20.0	15.0	0.8			
ECWH10393□V( )	0.039	23.0	8.0	16.5	21.5	20.0	15.0	0.8			
ECWH10433□V( )	0.043	23.0	8.5	16.5	21.5	20.0	15.0	0.8			
ECWH10473□V( )	0.047	23.0	8.5	17.0	22.0	20.0	15.0	0.8			
ECWH10513□V( )	0.051	23.0	9.0	17.5	22.5	20.0	15.0	0.8	300		
ECWH10563□V( )	0.056	23.0	9.5	17.5	22.5	20.0	15.0	0.8			
ECWH10623□V( )	0.062	23.0	9.5	18.0	23.0	20.0	15.0	0.8			
ECWH10683□V( )	0.068	23.0	10.0	19.0	24.0	20.0	15.0	0.8			
ECWH10753□V( )	0.075	23.0	10.5	19.5	24.5	20.0	15.0	0.8			
ECWH10823□V( )	0.082	23.0	11.0	20.0	25.0	20.0	15.0	0.8			
ECWH10913□V( )	0.091	23.0	11.5	20.5	25.5	20.0	15.0	0.8			
ECWH10104□V( )	0.10	23.0	12.0	21.0	26.0	20.0	15.0	0.8			

\* □ : Capacitance tolerance code  
( ) : Suffix for lead crimped

## Rating · Dimensions · Quantity

● Rated voltage : 1250 V.DC, Capacitance tolerance :  $\pm 3\%$  (H),  $\pm 5\%$  (J)

Part No.	Cap. (μF)	Dimensions (mm)							Min. order Q'ty		
		L max.	T max.	H max.		F	S	ød	Taping	Bulk	
				Straight	Crimped lead	Straight	Crimped lead		7.5 mm	Straight	Crimped lead
ECWH12362□V( )	0.0036	18.0	6.0	12.5	17.5	15.0	10.0	0.8	500	500	500
ECWH12392□V( )	0.0039	18.0	6.0	12.5	17.5	15.0	10.0	0.8			
ECWH12432□V( )	0.0043	18.0	6.0	13.0	18.0	15.0	10.0	0.8			
ECWH12472□V( )	0.0047	18.0	6.0	13.0	18.0	15.0	10.0	0.8			
ECWH12512□V( )	0.0051	18.0	6.5	13.0	18.0	15.0	10.0	0.8			
ECWH12562□V( )	0.0056	18.0	6.5	13.5	18.5	15.0	10.0	0.8			
ECWH12622□V( )	0.0062	18.0	6.5	13.5	18.5	15.0	10.0	0.8			
ECWH12682□V( )	0.0068	18.0	7.0	13.5	18.5	15.0	10.0	0.8			
ECWH12752□V( )	0.0075	18.0	7.0	14.0	19.0	15.0	10.0	0.8			
ECWH12822□V( )	0.0082	18.0	7.5	14.0	19.0	15.0	10.0	0.8			
ECWH12912□V( )	0.0091	18.0	7.5	14.5	19.5	15.0	10.0	0.8	400		
ECWH12103□V( )	0.010	18.0	8.0	15.0	20.0	15.0	10.0	0.8			
ECWH12113□V( )	0.011	18.0	8.5	15.0	20.0	15.0	10.0	0.8			
ECWH12123□V( )	0.012	18.0	8.5	15.5	20.5	15.0	10.0	0.8			
ECWH12133□V( )	0.013	18.0	9.0	15.5	20.5	15.0	10.0	0.8			
ECWH12153□V( )	0.015	18.0	9.5	16.0	21.0	15.0	10.0	0.8	500		
ECWH12163□V( )	0.016	23.0	7.5	16.0	21.0	20.0	15.0	0.8			
ECWH12183□V( )	0.018	23.0	7.5	16.0	21.0	20.0	15.0	0.8			
ECWH12203□V( )	0.020	23.0	8.0	16.5	21.5	20.0	15.0	0.8	400		
ECWH12223□V( )	0.022	23.0	8.5	16.5	21.5	20.0	15.0	0.8			
ECWH12243□V( )	0.024	23.0	8.5	17.0	22.0	20.0	15.0	0.8			
ECWH12273□V( )	0.027	23.0	9.0	17.5	22.5	20.0	15.0	0.8			
ECWH12303□V( )	0.030	23.0	9.5	18.0	23.0	20.0	15.0	0.8			
ECWH12333□V( )	0.033	23.0	10.0	18.5	23.5	20.0	15.0	0.8	300		
ECWH12363□V( )	0.036	23.0	10.0	19.0	24.0	20.0	15.0	0.8			
ECWH12393□V( )	0.039	23.0	10.5	19.5	24.5	20.0	15.0	0.8			
ECWH12433□V( )	0.043	23.0	11.0	20.0	25.0	20.0	15.0	0.8			
ECWH12473□V( )	0.047	23.0	11.5	20.5	25.5	20.0	15.0	0.8			
ECWH12513□V( )	0.051	23.0	12.0	21.0	26.0	20.0	15.0	0.8			
ECWH12563□V( )	0.056	28.0	11.5	20.0	25.0	25.0	17.5	0.8	—		
ECWH12623□V( )	0.062	28.0	12.0	21.0	26.0	25.0	17.5	0.8			
ECWH12683□V( )	0.068	28.0	12.5	21.5	26.5	25.0	17.5	0.8			
ECWH12753□V( )	0.075	28.0	13.5	22.0	27.0	25.0	17.5	0.8			
ECWH12823□V( )	0.082	28.0	14.0	22.5	27.5	25.0	17.5	0.8			
ECWH12913□V( )	0.091	28.0	14.5	23.0	28.0	25.0	17.5	0.8			
ECWH12104□V( )	0.10	28.0	15.5	24.0	29.0	25.0	17.5	0.8			

\* □ : Capacitance tolerance code  
( ) : Suffix for lead crimped

## Rating · Dimensions · Quantity

● Rated voltage : 1600 V.DC, Capacitance tolerance :  $\pm 3\%$  (H),  $\pm 5\%$  (J)

Part No.	Cap. (μF)	Dimensions (mm)							Min. order Q'ty															
		L max.	T max.	H max.		F	S	ød	Taping	Bulk														
				Straight	Crimped lead	Straight	Crimped lead		7.5 mm	Straight	Crimped lead													
ECWH16132□V( )	0.0013	18.0	6.5	13.0	18.0	15.0	10.0	0.8	500	500	500													
ECWH16152□V( )	0.0015	18.0	6.5	13.5	18.5	15.0	10.0	0.8																
ECWH16162□V( )	0.0016	18.0	7.0	13.5	18.5	15.0	10.0	0.8																
ECWH16182□V( )	0.0018	18.0	7.0	14.0	19.0	15.0	10.0	0.8																
ECWH16202□V( )	0.0020	18.0	7.0	14.0	19.0	15.0	10.0	0.8																
ECWH16222□V( )	0.0022	18.0	6.5	13.5	18.5	15.0	10.0	0.8																
ECWH16242□V( )	0.0024	18.0	7.0	13.5	18.5	15.0	10.0	0.8																
ECWH16272□V( )	0.0027	18.0	7.0	14.0	19.0	15.0	10.0	0.8																
ECWH16302□V( )	0.003	18.0	7.5	14.0	19.0	15.0	10.0	0.8	400			500	500											
ECWH16332□V( )	0.0033	18.0	7.5	14.5	19.5	15.0	10.0	0.8																
ECWH16362□V( )	0.0036	18.0	7.0	13.5	18.5	15.0	10.0	0.8	500					500	500									
ECWH16392□V( )	0.0039	18.0	7.0	14.0	19.0	15.0	10.0	0.8																
ECWH16432□V( )	0.0043	18.0	7.0	14.0	19.0	15.0	10.0	0.8																
ECWH16472□V( )	0.0047	23.0	6.5	14.5	19.5	20.0	15.0	0.8																
ECWH16512□V( )	0.0051	23.0	6.5	15.0	20.0	20.0	15.0	0.8																
ECWH16562□V( )	0.0056	23.0	6.5	15.0	20.0	20.0	15.0	0.8																
ECWH16622□V( )	0.0062	23.0	7.0	15.0	20.0	20.0	15.0	0.8																
ECWH16682□V( )	0.0068	23.0	7.0	15.5	20.5	20.0	15.0	0.8																
ECWH16752□V( )	0.0075	23.0	7.5	15.5	20.5	20.0	15.0	0.8	400							500	500							
ECWH16822□V( )	0.0082	23.0	7.5	16.0	21.0	20.0	15.0	0.8																
ECWH16912□V( )	0.0091	23.0	8.0	16.0	21.0	20.0	15.0	0.8																
ECWH16103□V( )	0.010	23.0	8.0	16.5	21.5	20.0	15.0	0.8																
ECWH16113□V( )	0.011	23.0	8.5	17.0	22.0	20.0	15.0	0.8	300									500	500					
ECWH16123□V( )	0.012	23.0	9.0	17.0	22.0	20.0	15.0	0.8																
ECWH16133□V( )	0.013	23.0	9.0	17.5	22.5	20.0	15.0	0.8																
ECWH16153□V( )	0.015	23.0	9.5	18.0	23.0	20.0	15.0	0.8																
ECWH16163□V( )	0.016	23.0	10.0	18.5	23.5	20.0	15.0	0.8																
ECWH16183□V( )	0.018	23.0	10.5	19.5	24.5	20.0	15.0	0.8																
ECWH16203□V( )	0.020	23.0	11.0	20.0	25.0	20.0	15.0	0.8																
ECWH16223□V( )	0.022	28.0	9.5	18.0	23.0	25.0	17.5	0.8												—	500	500		
ECWH16243□V( )	0.024	28.0	10.0	18.5	23.5	25.0	17.5	0.8																
ECWH16273□V( )	0.027	28.0	10.5	19.5	24.5	25.0	17.5	0.8																
ECWH16303□V( )	0.030	28.0	11.0	20.0	25.0	25.0	17.5	0.8																
ECWH16333□V( )	0.033	28.0	11.5	20.5	25.5	25.0	17.5	0.8																
ECWH16363□V( )	0.036	28.0	12.5	21.5	26.5	25.0	17.5	0.8																
ECWH16393□V( )	0.039	28.0	13.5	22.0	27.0	25.0	17.5	0.8																
ECWH16433□V( )	0.043	28.0	14.5	22.5	27.5	25.0	17.5	0.8																
ECWH16473□V( )	0.047	28.0	15.0	23.5	28.5	25.0	17.5	0.8																
ECWH16513□V( )	0.051	28.0	15.5	24.0	29.0	25.0	17.5	0.8	400														500	500
ECWH16563□V( )	0.056	28.0	16.0	24.5	29.5	25.0	17.5	0.8																

\* □ : Capacitance tolerance code  
( ) : Suffix for lead crimped



## Rating · Dimensions · Quantity

● Rated voltage : 2000 V.DC, Capacitance tolerance :  $\pm 3\%$ (H),  $\pm 5\%$ (J)

Part No.	Cap. (μF)	Dimensions (mm)							Min. order Q'ty	
		L max.	T max.	H max.		F	S	ød	Taping	Bulk
				Straight	Crimped lead	Straight	Crimped lead		7.5 mm	Straight · Crimped lead
ECWH20102□V( )	0.0010	18.0	6.5	13.5	18.5	15.0	10.0	0.8	500	500
ECWH20112□V( )	0.0011	18.0	6.5	13.5	18.5	15.0	10.0	0.8		
ECWH20122□V( )	0.0012	18.0	7.0	13.5	18.5	15.0	10.0	0.8		
ECWH20132□V( )	0.0013	18.0	7.0	14.0	19.0	15.0	10.0	0.8		
ECWH20152□V( )	0.0015	18.0	7.5	14.0	19.0	15.0	10.0	0.8	400	
ECWH20162□V( )	0.0016	18.0	7.5	14.5	19.5	15.0	10.0	0.8		
ECWH20182□V( )	0.0018	18.0	8.0	14.5	19.5	15.0	10.0	0.8		
ECWH20202□V( )	0.0020	18.0	8.0	15.0	20.0	15.0	10.0	0.8		
ECWH20222□V( )	0.0022	18.0	8.5	15.0	20.0	15.0	10.0	0.8	300	
ECWH20242□V( )	0.0024	18.0	8.5	15.5	20.5	15.0	10.0	0.8		
ECWH20272□V( )	0.0027	18.0	9.0	16.0	21.0	15.0	10.0	0.8		
ECWH20302□V( )	0.0030	18.0	9.5	16.0	21.0	15.0	10.0	0.8		
ECWH20332□V( )	0.0033	18.0	8.5	15.5	20.5	15.0	10.0	0.8	400	
ECWH20362□V( )	0.0036	18.0	9.0	15.5	20.5	15.0	10.0	0.8	300	
ECWH20392□V( )	0.0039	18.0	9.0	16.0	21.0	15.0	10.0	0.8		
ECWH20432□V( )	0.0043	18.0	9.5	16.0	21.0	15.0	10.0	0.8		
ECWH20472□V( )	0.0047	23.0	7.0	15.5	20.5	20.0	15.0	0.8	500	
ECWH20512□V( )	0.0051	23.0	7.5	16.0	21.0	20.0	15.0	0.8	400	
ECWH20562□V( )	0.0056	23.0	7.5	16.0	21.0	20.0	15.0	0.8		
ECWH20622□V( )	0.0062	23.0	8.0	16.5	21.5	20.0	15.0	0.8		
ECWH20682□V( )	0.0068	23.0	8.5	16.5	21.5	20.0	15.0	0.8		
ECWH20752□V( )	0.0075	23.0	9.5	18.0	23.0	20.0	15.0	0.8	300	
ECWH20822□V( )	0.0082	23.0	10.0	18.0	23.0	20.0	15.0	0.8		
ECWH20912□V( )	0.0091	23.0	10.0	19.0	24.0	20.0	15.0	0.8		
ECWH20103□V( )	0.010	23.0	10.5	19.5	24.5	20.0	15.0	0.8		
ECWH20113□V( )	0.011	23.0	11.0	20.0	25.0	20.0	15.0	0.8		
ECWH20123□V( )	0.012	23.0	11.5	20.5	25.5	20.0	15.0	0.8		
ECWH20133□V( )	0.013	23.0	12.0	21.0	26.0	20.0	15.0	0.8		
ECWH20153□V( )	0.015	23.0	12.0	21.5	26.5	20.0	15.0	0.8		

\* □ : Capacitance tolerance code  
( ) : Suffix for lead crimped

## Metallized Polypropylene Film Capacitor

Type : **ECWH(A)**

Non-inductive construction using metallized polypropylene film with flame retardant epoxy resin coating



### Features

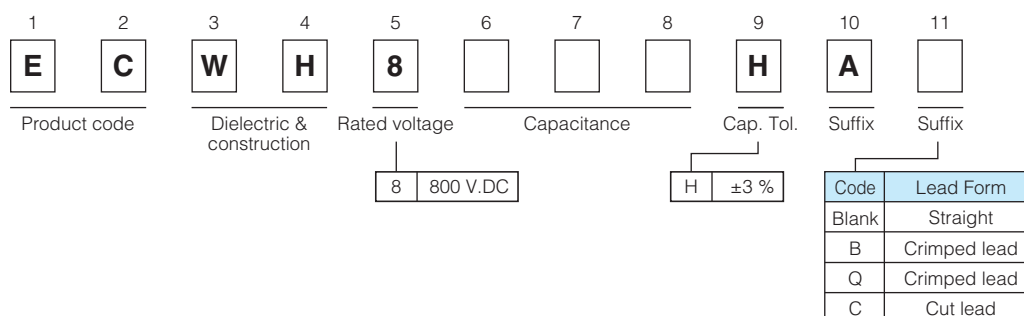
- Small size
- Excellent electrical characteristics
- Low loss
- Low Hum Sound Noise
- Flame retardant epoxy resin coating
- RoHS directive compliant

### Recommended applications

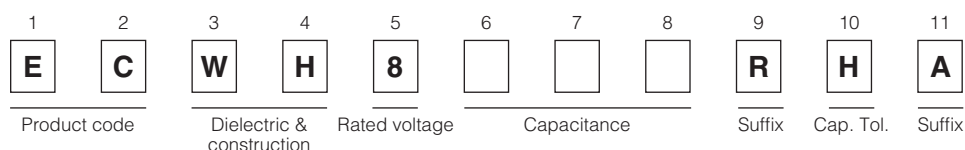
- General resonance circuit

### Explanation of part number

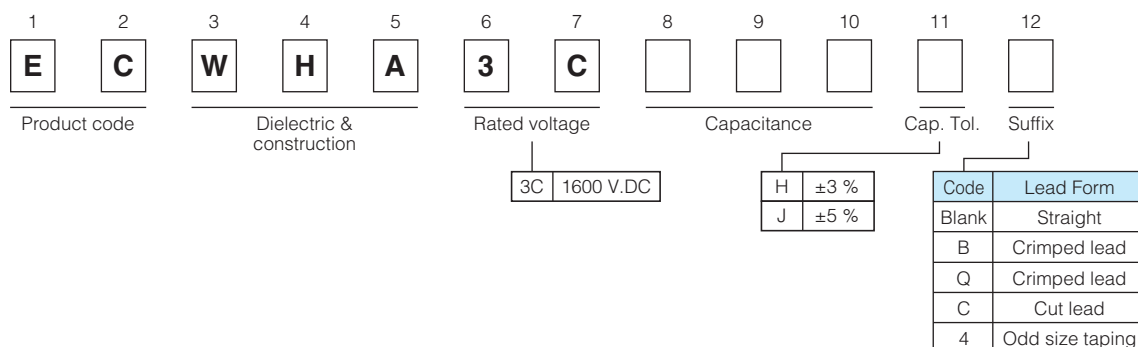
- Rated voltage 800 V.DC (Bulk)



- Rated voltage 800 V.DC (Odd size taping)



- Rated voltage 1600 V.DC

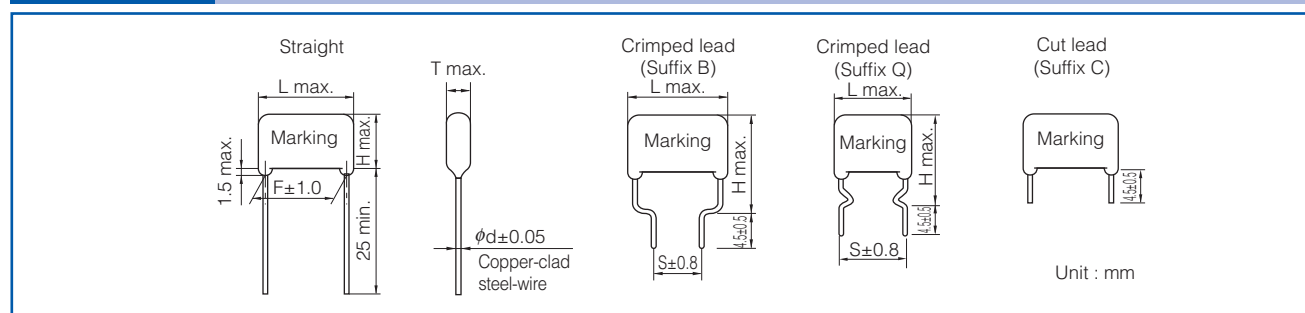


## Specifications

Category temp. range (Including temperature-rise on unit surface)	- 40 °C to +105 °C	
Rated voltage	800 V.DC	1600 V.DC
Capacitance range	0.010 µF to 0.047 µF	0.0010 µF to 0.047 µF
Capacitance tolerance	±3 % (H)	±3 % (H), ±5 % (J)
Dissipation factor (tan δ)	tan δ ≤ 0.1 % ( 20 °C, 1 kHz )	
Withstand voltage	Between terminals : Rated volt. (V.DC) × 150 %, 60 s	
Insulation resistance (IR)	IR ≥ 30000 MΩ (20 °C, 500 V.DC, 60 s)	

\* 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".

## Dimensions

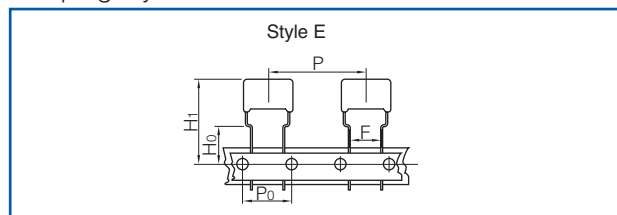


## Packaging specifications for bulk package

- Packing quantity : 100 pcs./bag

## Taping specifications for automatic insertion

- Taping style



\* Refer to the page of taping specifications.

- Taping style

Type	Rated voltage (V.DC)	Capacitance range (µF)	Taping style						Packing	suffix
			AD	AS	B	C	D	E		
ECWH(A)	800	0.010 to 0.047						○	Ammo	RHA
	1600	0.0010 to 0.047						○		( ) 4

- Lead spacing

Style	Lead spacing
E	7.5 mm

## Rating · Dimensions · Quantity

- Rated voltage : 800 V.DC, Capacitance tolerance : ±3 % (H)

Part No.	Cap. (μF)	Dimensions (mm)									Min. order Q'ty	
		L max.	T max.	H max.			F	S		φd	Taping	Bulk
				Straight	Crimped lead (Suffix B)	Crimped lead (Suffix Q)		Crimped lead (Suffix B)	Crimped lead (Suffix Q)		7.5 mm	Straight Crimped lead
ECWH8103HA( )	0.010	15.4	5.4	9.8	14.8	14.8	12.5	7.5	12.5	0.6	500	500
ECWH8123HA( )	0.012	15.4	5.8	10.2	15.2	15.2	12.5	7.5	12.5	0.6		
ECWH8153HA( )	0.015	15.4	6.2	10.6	15.6	15.6	12.5	7.5	12.5	0.6		
ECWH8183HA( )	0.018	15.7	6.6	11.0	16.0	18.0	12.5	7.5	12.5	0.8		
ECWH8223HA( )	0.022	15.7	7.1	11.5	16.5	18.5	12.5	7.5	12.5	0.8	400	
ECWH8273HA( )	0.027	15.7	7.6	12.0	17.0	19.0	12.5	7.5	12.5	0.8		
ECWH8333HA( )	0.033	15.7	8.4	12.8	17.8	19.8	12.5	7.5	12.5	0.8		
ECWH8393HA( )	0.039	15.7	8.9	13.3	18.3	20.3	12.5	7.5	12.5	0.8	300	
ECWH8473HA( )	0.047	15.7	9.7	14.1	19.1	21.1	12.5	7.5	12.5	0.8		

\* H : Capacitance tolerance code  
( ) : Suffix for lead crimped taped type

## Rating · Dimensions · Quantity

● Rated voltage : 1600 V.DC, Capacitance tolerance :  $\pm 3\%$  (H),  $\pm 5\%$  (J)

Part No.	Cap. ( $\mu$ F)	Dimensions (mm)									Min. order Q'ty		
		L max.	T max.	H max.			F	S		$\phi$ d	Taping	Bulk	
				Straight	Crimped lead (Suffix B)	Crimped lead (Suffix Q)		Crimped lead (Suffix B)	Crimped lead (Suffix Q)		7.5 mm	Straight	Crimped lead
ECWHA3C102□( )	0.0010	17.8	5.2	—	13.0	13.0	—	10.0	15.0	0.6	600	—	
ECWHA3C112□( )	0.0011	17.8	5.4		13.1	13.1		10.0	15.0	0.6			
ECWHA3C122□( )	0.0012	17.8	5.5		13.2	13.2		10.0	15.0	0.6			
ECWHA3C132□( )	0.0013	17.8	5.7		13.4	13.4		10.0	15.0	0.6			
ECWHA3C152□( )	0.0015	17.8	5.9		13.7	13.7		10.0	15.0	0.6			
ECWHA3C162□( )	0.0016	17.8	6.1		13.9	13.9		10.0	15.0	0.6			
ECWHA3C182□( )	0.0018	17.8	6.4		14.1	14.1		10.0	15.0	0.6			
ECWHA3C202□( )	0.0020	17.8	6.6		14.3	14.3		10.0	15.0	0.6			
ECWHA3C222□( )	0.0022	17.8	6.7		14.5	14.5		10.0	15.0	0.6	400		
ECWHA3C242□( )	0.0024	17.8	7.0		14.7	14.7		10.0	15.0	0.6			
ECWHA3C272□( )	0.0027	17.8	5.2		13.0	13.0		10.0	15.0	0.6	600		
ECWHA3C302□( )	0.0030	17.8	5.5		13.2	13.2		10.0	15.0	0.6			
ECWHA3C332□( )	0.0033	17.8	5.6		13.4	13.4		10.0	15.0	0.6			
ECWHA3C362□( )	0.0036	17.8	5.7		13.5	13.5		10.0	15.0	0.6			
ECWHA3C392□( )	0.0039	17.8	6.0		13.8	13.8		10.0	15.0	0.6			
ECWHA3C432□( )	0.0043	17.8	6.2		13.9	13.9		10.0	15.0	0.6			
ECWHA3C472□( )	0.0047	17.8	6.4	9.1	14.1	14.1	15.0	10.0	15.0	0.6		1000	
ECWHA3C512□( )	0.0051	17.8	6.6	9.4	14.4	14.4	15.0	10.0	15.0	0.6			
ECWHA3C562□( )	0.0056	17.8	6.8	9.6	14.6	14.6	15.0	10.0	15.0	0.6	400		
ECWHA3C622□( )	0.0062	17.8	7.1	9.8	14.8	14.8	15.0	10.0	15.0	0.6			
ECWHA3C682□( )	0.0068	17.8	6.1	12.1	17.1	17.1	15.0	10.0	15.0	0.6	500		
ECWHA3C752□( )	0.0075	17.8	6.5	12.4	17.4	17.4	15.0	10.0	15.0	0.6			
ECWHA3C822□( )	0.0082	17.8	6.8	12.7	17.7	17.7	15.0	10.0	15.0	0.6			
ECWHA3C912□( )	0.0091	17.8	7.1	13.0	18.0	18.0	15.0	10.0	15.0	0.6			
ECWHA3C103□( )	0.010	20.3	6.4	12.3	17.3	17.3	17.5	10.0	17.5	0.6	500		
ECWHA3C113□( )	0.011	20.3	6.6	12.5	17.5	17.5	17.5	10.0	17.5	0.6			
ECWHA3C123□( )	0.012	20.3	6.8	12.8	17.8	17.8	17.5	10.0	17.5	0.6			
ECWHA3C133□( )	0.013	20.3	7.1	13.0	18.0	18.0	17.5	10.0	17.5	0.6	400		
ECWHA3C153□( )	0.015	20.3	7.6	13.5	18.5	18.5	17.5	10.0	17.5	0.6			
ECWHA3C163□( )	0.016	20.3	7.9	13.8	18.8	18.8	17.5	10.0	17.5	0.6			
ECWHA3C183□( )	0.018	20.6	8.2	14.1	19.1	21.1	17.5	10.0	17.5	0.8		800	
ECWHA3C203□( )	0.020	20.6	8.7	14.6	19.6	21.6	17.5	10.0	17.5	0.8			
ECWHA3C223□( )	0.022	20.6	9.1	15.0	20.0	22.0	17.5	10.0	17.5	0.8	300		
ECWHA3C243□( )	0.024	20.6	9.6	15.4	20.4	22.4	17.5	10.0	17.5	0.8			
ECWHA3C273□( )	0.027	20.6	10.0	15.9	20.9	22.9	17.5	10.0	17.5	0.8			
ECWHA3C303□( )	0.030	20.6	10.7	16.5	21.5	23.5	17.5	10.0	17.5	0.8			
ECWHA3C333□( )	0.033	20.6	11.2	17.0	22.0	24.0	17.5	10.0	17.5	0.8			
ECWHA3C363□( )	0.036	20.6	11.7	17.5	22.5	24.5	17.5	10.0	17.5	0.8			
ECWHA3C393□( )	0.039	20.6	12.1	18.0	23.0	25.0	17.5	10.0	17.5	0.8			
ECWHA3C433□( )	0.043	20.6	12.8	18.6	23.6	25.6	17.5	10.0	17.5	0.8			
ECWHA3C473□( )	0.047	20.6	13.4	19.2	24.2	26.2	17.5	10.0	17.5	0.8		600	800

\* □ : Capacitance tolerance code  
( ) : Suffix for lead crimped taped type

## Metallized Polypropylene Film Capacitor

Type : **ECWH(C)**

Non-inductive construction using metallized polypropylene film with flame retardant epoxy resin coating



### Features

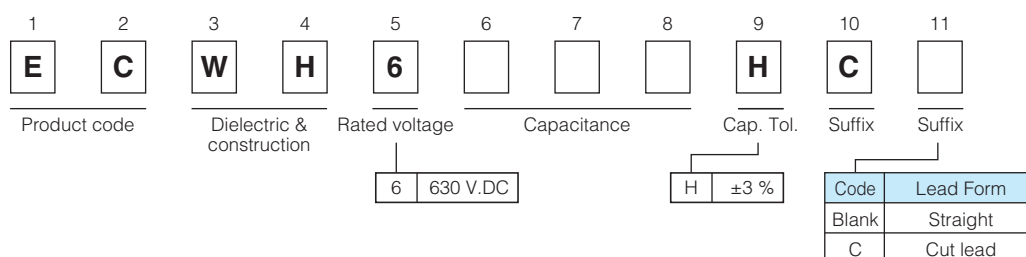
- Excellent electrical characteristics
- Low loss
- Flame-retardant epoxy resin coating
- RoHS directive compliant

### Recommended applications

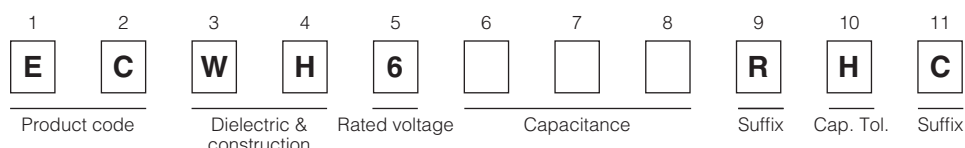
- General resonance circuit (630 V.DC, 1250 V.DC)
- Resonance circuit for microwave oven and IH cooker (630 V.DC, 1250 V.DC)
- General high voltage circuit (3000 V.DC)

### Explanation of part number

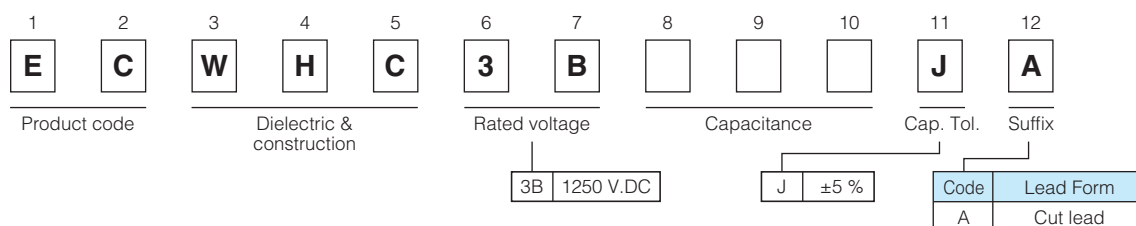
- Rated voltage 630 V.DC (Bulk)



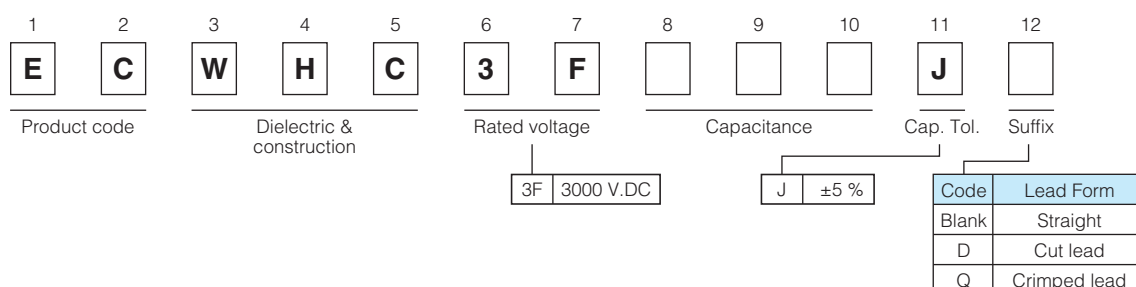
- Rated voltage 630 V.DC (Odd size taping)



- Rated voltage 1250 V.DC (Cut lead)



- Rated voltage 3000 V.DC (Bulk)

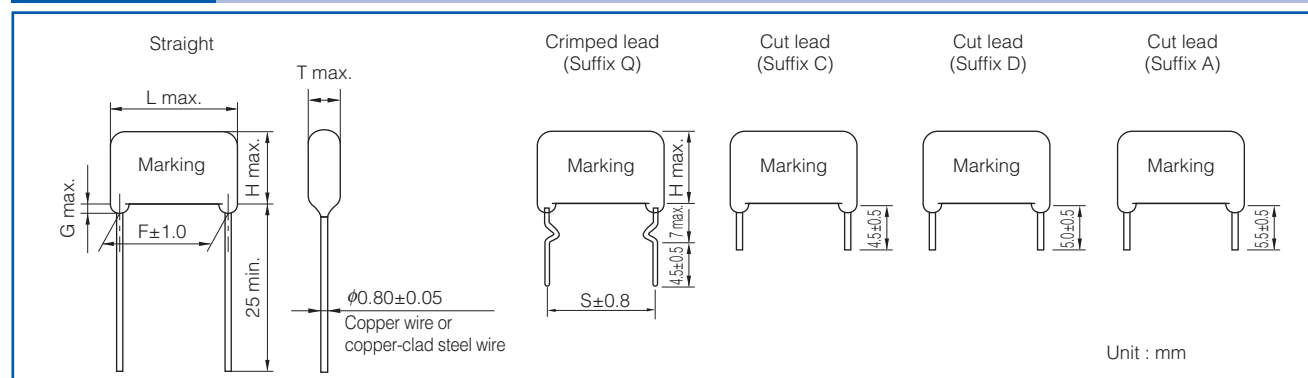


## Specifications

Category temp. range (Including temperature-rise on unit surface)	630 V.DC	- 40 °C to +105 °C : General resonance circuit - 40 °C to +85 °C : When using compulsive air cooling for a resonance circuit
	1250 V.DC	- 40 °C to +105 °C : General resonance circuit - 40 °C to +85 °C : When using compulsive air cooling for a resonance circuit
	3000 V.DC	- 40 °C to +85 °C : General high voltage circuit
	630 VDC, 1250 VDC, 3000 VDC	
Rated voltage	630 VDC, 1250 VDC, 3000 VDC	
Capacitance range	630 V.DC	0.10 $\mu$ F to 0.33 $\mu$ F
	1250 V.DC	0.08 $\mu$ F to 0.12 $\mu$ F
	3000 V.DC	0.0024 $\mu$ F to 0.01 $\mu$ F
Capacitance tolerance	630 V.DC	$\pm 3 \%$ (H)
	1250 V.DC	$\pm 5 \%$ (J)
	3000 V.DC	$\pm 5 \%$ (J)
Dissipation factor ( $\tan \delta$ )	630 V.DC	$\tan \delta \leq 0.05 \%$ ( 20 °C, 1 kHz )
	1250 V.DC	$\tan \delta \leq 0.1 \%$ ( 20 °C, 10 kHz )
	3000 V.DC	$\tan \delta \leq 0.1 \%$ ( 20 °C, 1 kHz ), $\tan \delta \leq 0.1 \%$ ( 20 °C, 10 kHz )
Withstand voltage	630 V.DC	Between terminals : Rated volt. (V.DC) $\times 150 \%$ , 60 s
	1250 V.DC	
	3000 V.DC	Between terminals : 6615 V.DC, 3 s
Insulation resistance (IR)	630 V.DC	IR $\geq 9000 \text{ M}\Omega$ (20 °C, 500 V.DC, 60 s)
	1250 V.DC	
	3000 V.DC	IR $\geq 50000 \text{ M}\Omega$ (20 °C, 500 V.DC, 60 s)

\* 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".

## Dimensions

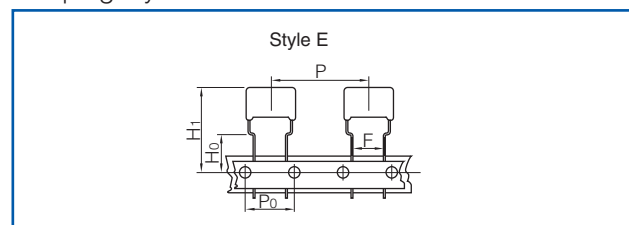


## Packaging specifications for bulk package

- Packing quantity : 100 pcs./bag

## Taping specifications for automatic insertion

- Taping style



\* Refer to the page of taping specifications.

- Taping style

Type	Rated voltage (V.DC)	Capacitance range ( $\mu$ F)	Taping style					Packing
			AD	AS	B	C	D	
ECWH(C)	630	0.10 to 0.21						Amo

\* See the column "Rating · Dimensions · Quantity" for packing quantity

- Lead spacing

Style	Lead spacing
E	7.5 mm

## Rating · Dimensions · Quantity

● Rated voltage : 630 V.DC, Capacitance tolerance :  $\pm 3\%$ (H)

Part No.	Capacitance ( $\mu$ F)	Dimensions (mm)						Min. order Q'ty	
		L max.	T max.	H max.	F	G max.	$\phi$ d	Taping	Bulk
								7.5 mm	Straight · Crimped lead
ECWH6104HC( )	0.10	20.7	8.6	13.5	17.5	1.5	0.8	350	1000
ECWH6114HC( )	0.11	20.7	9.0	13.9	17.5	1.5	0.8	300	
ECWH6124HC( )	0.12	20.7	9.4	14.3	17.5	1.5	0.8	300	
ECWH6184HC( )	0.18	20.7	11.5	16.3	17.5	1.5	0.8	250	
ECWH6214HC( )	0.21	20.7	12.4	17.2	17.5	1.5	0.8	200	
ECWH6244HC( )	0.24	20.7	13.2	18.1	17.5	1.5	0.8	-	700
ECWH6274HC( )	0.27	20.7	14.0	18.9	17.5	1.5	0.8		
ECWH6284HC( )	0.28	20.7	14.3	19.1	17.5	1.5	0.8		
ECWH6304HC( )	0.30	20.7	14.8	19.6	17.5	1.5	0.8		
ECWH6324HC( )	0.32	20.7	14.5	20.9	17.5	1.5	0.8		
ECWH6334HC( )	0.33	20.7	14.7	21.1	17.5	1.5	0.8		

\* ( ) : Suffix for lead form

● Rated voltage : 1250 V.DC, Capacitance tolerance :  $\pm 5\%$ (J)

Part No.	Capacitance ( $\mu$ F)	Dimensions (mm)						Min. order Q'ty	
		L max.	T max.	H max.	F	G max.	$\phi$ d	Bulk	Straight · Crimped lead
ECWHC3B803JA	0.08	20.7	12.0	19.0	17.5	1.5	0.8	700	
ECWHC3B104JA	0.10	20.7	13.5	20.6	17.5	1.5	0.8		
ECWHC3B114JA	0.11	20.7	14.2	21.3	17.5	1.5	0.8		
ECWHC3B124JA	0.12	20.7	14.9	21.9	17.5	1.5	0.8	600	

● Rated voltage : 3000 V.DC, Capacitance tolerance :  $\pm 5\%$ (J)

Part No.	Capacitance ( $\mu$ F)	Dimensions (mm)							Min. order Q'ty	
		L max.	T max.	H max.	F	S	G max.	$\phi$ d	Bulk	Straight · Crimped lead
						Crimped lead (Suffix Q)				
ECWHC3F242J( )	0.0024	25.8	6.1	10.9	22.5	23.0	1.5	0.8	1000	
ECWHC3F362J( )	0.0036	25.8	7.2	11.9	22.5	23.0	1.5	0.8		
ECWHC3F392J( )	0.0039	25.8	7.5	12.2	22.5	23.0	1.5	0.8		
ECWHC3F432J( )	0.0043	25.8	6.5	11.2	22.5	23.0	1.5	0.8		
ECWHC3F562J( )	0.0056	25.8	7.3	12.0	22.5	23.0	1.5	0.8		
ECWHC3F822J( )	0.0082	25.8	7.5	15.3	22.5	23.0	1.5	0.8		
ECWHC3F103J( )	0.01	25.8	8.2	16.1	22.5	23.0	1.5	0.8		

\* ( ) : Suffix for lead form

## Metallized Polypropylene Film Capacitors

Type : **TMF Series**  
(for smoothing and resonance)



### Features

- Wide voltage range up to 2300 V.AC
- High frequency and high current capability
- Low loss, Low ESR
- Long life time, High reliability
- Flame retardant
- RoHS directive compliant

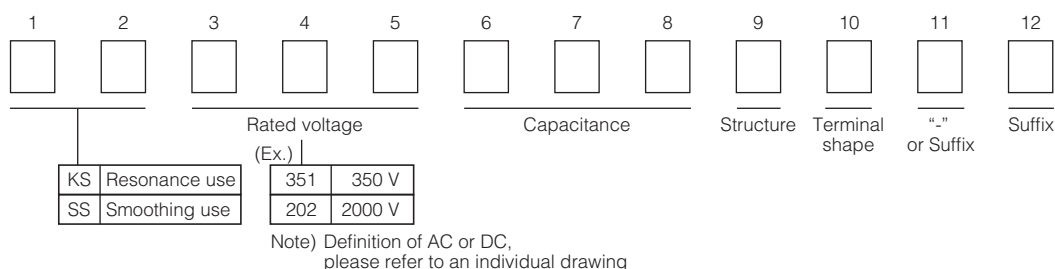
### Recommended applications

- Smoothing and resonance circuit, IH equipment and Industrial power supply

### Construction

- Dielectric : Polypropylene film
- Electrodes : Metallized plastic film
- Plastic case : UL94 V-0
- Sealing : UL94 V-0
- Terminal : Lead wire (tin plating), Plate terminal (tin plating)

### Explanation of part number



### Specifications

	Smoothing circuit		Resonance circuit	
Rated voltage *1	150 V.AC to 220 V.AC 350 V.DC to 630 V.DC		300 V.AC to 2300 V.AC 500 V.DC to 1200 V.DC	
Rated capacitance *1	150 V.AC to 220 V.AC	1 $\mu$ F to 10 $\mu$ F	300 V.AC to 2300 V.AC	0.01 $\mu$ F to 4.0 $\mu$ F
	350 V.DC to 630 V.DC	1 $\mu$ F to 10 $\mu$ F	500 V.DC to 1200 V.DC	0.01 $\mu$ F to 4.0 $\mu$ F
Capacitance tolerance	Please refer to an individual drawing			
Withstand voltage	Please refer to an individual drawing			
Insulation resistance	Please refer to an individual drawing			
Maximum permissible temperature (Case wall)	85 °C (Including self temperature rising)			

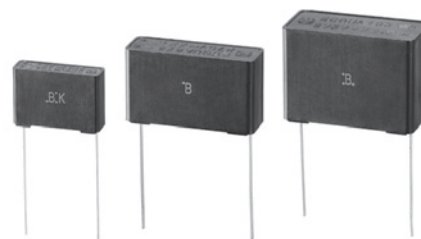
\*1 These are typical values. Please contact if necessary other Voltage and Capacitance.



## Metallized Polypropylene Film Capacitor

Type : **ECQUA [Class X2]**

In accordance with UL/CSA and European safety regulation class X2  
Equipped with a safety mechanism



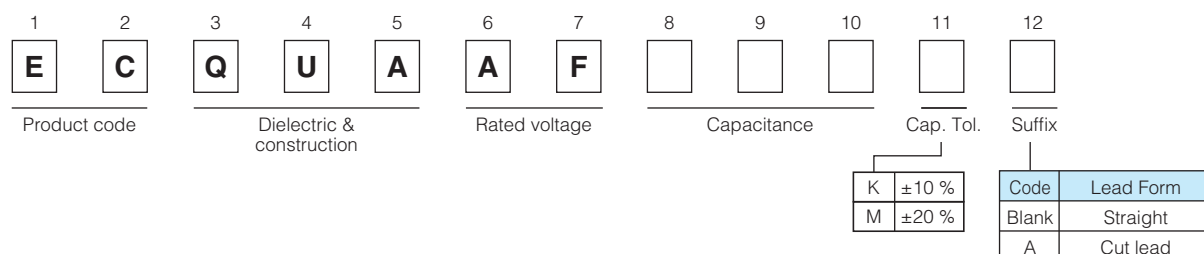
### Features

- High humidity resistance  
(THB test : 85 °C/85 %/240 V.AC/1000 h ( $C \leq 1.0 \mu\text{F}$ ))
- High safety (safety function installed)
- Compact
- Flame-retardant plastic case and non-combustible resin
- RoHS directive compliant

### Recommended applications

- Interference suppressors

### Explanation of part number



### Applicable standard

\* It is certified as type ECQUA in the following approval.

Approval		Class	Certification organization
UL	UL60384-14	Class X2	UL
CSA	CAN/CSA E60384-14	Class X2	
Europe	EN60384-14	Class X2	VDE
International	IEC60384-14	Class X2	

\* When applying this capacitor to European and American safety standards, please use type designation and rating such as ECQUA, 0.1  $\mu\text{F}$ .

\* Approval number (File No.) of safety regulations are subject to revision without notice. Ask factory for a copy of the latest file No.

### Specifications

Category temperature range	-40 °C to +110 °C
Rated voltage	275 V.AC
Rated capacitance	0.10 $\mu\text{F}$ to 4.7 $\mu\text{F}$
Capacitance tolerance	±10 % (K), ±20 % (M)
Dissipation factor ( $\tan \delta$ )	$C \leq 1.0 \mu\text{F}$ : $\tan \delta \leq 0.1 \%$ ( 20 °C, 1 kHz ) $C > 1.0 \mu\text{F}$ : $\tan \delta \leq 0.2 \%$ ( 20 °C, 1 kHz )
Withstand voltage	Between terminals : 633 V.AC, 1183 V.DC, 60 s Between terminals to enclosure : 2050 V.AC, 60 s
Insulation resistance (IR)	$C \leq 0.33 \mu\text{F}$ : $\text{IR} \geq 15000 \text{ M}\Omega$ ( 20 °C, 100 V.DC, 60 s ) $C > 0.33 \mu\text{F}$ : $\text{IR} \geq 5000 \text{ M}\Omega \cdot \mu\text{F}$ ( 20 °C, 100 V.DC, 60 s ) $C \leq 0.47 \mu\text{F}$ : $\text{IR} \geq 2000 \text{ M}\Omega$ ( 20 °C, 500 V.DC, 60 s )
Maximum AC voltage *	310 V.AC

\* Use of this capacitor is limited to AC voltage (50 Hz or 60 Hz sine wave).

\* A faint corona discharge may occur inside of the capacitor element at rated voltage, however there is no influence on the reliability of the capacitor.  
(Suitable for series to the mains usage - for more details, please contact your Panasonic contact person.)

\* Maximum AC voltage including line voltage fluctuation is 310 V.AC.

310 V.AC is not nominal continuous applied voltage, but only indicates maximum value including in the voltage of the power supply. Basic nominal voltage is considered as 240 V.AC.

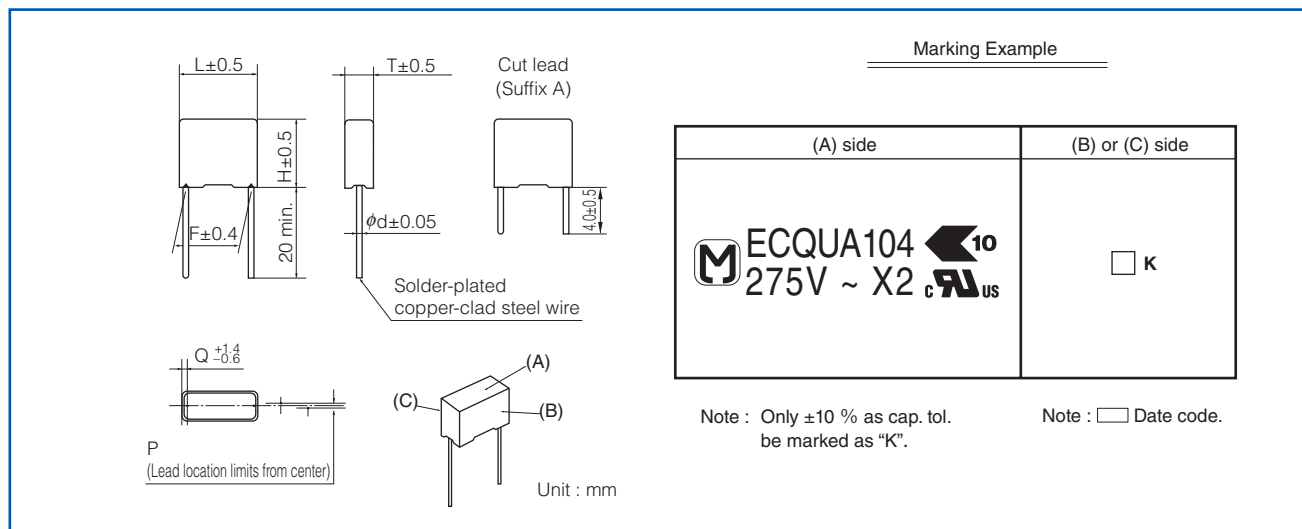
This maximum AC voltage is specified in only ECQUA type, not specified in other types.

Please refer to individual product specification, and contact us for further questions regarding design life.

Design and specifications are each subject to change without notice. Ask factory for the current technical specifications before purchase and/or use.

Should a safety concern arise regarding this product, please be sure to contact us immediately.

## Dimensions



## Rating · Dimensions · Quantity

- Capacitance tolerance :  $\pm 10\%$  (K),  $\pm 20\%$  (M)

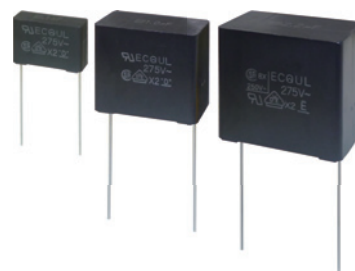
Part No.	Cap. ( $\mu$ F)	Dimensions (mm)							Min. order Q'ty	
		L	T	H	F	$\phi d$	P	Q	Straight	Cut lead
ECQUAAF104□( )	0.10	17.5	5.0	12.0	15.0	0.6	0 $\pm$ 0.8	1.3	1000	1000
ECQUAAF154□( )	0.15	17.5	6.0	13.0	15.0	0.6	0 $\pm$ 0.8	1.3		
ECQUAAF224□( )	0.22	17.5	7.5	14.0	15.0	0.6	0 $\pm$ 0.8	1.3		
ECQUAAF334□( )	0.33	17.5	9.0	16.0	15.0	0.6	0 $\pm$ 0.8	1.3		
ECQUAAF474□( )	0.47	26.0	8.5	15.0	22.5	0.8	0 $\pm$ 0.8	1.8	600	800
ECQUAAF684□( )	0.68	26.0	10.0	17.0	22.5	0.8	0 $\pm$ 0.8	1.8	500	500
ECQUAAF105□( )	1.0	26.0	12.0	19.0	22.5	0.8	0 $\pm$ 0.8	1.8	300	300
ECQUAAF155□( )	1.5	31.0	12.0	22.0	27.5	0.8	0 $\pm$ 0.8	1.8	200	200
ECQUAAF225□( )	2.2	31.0	14.5	24.5	27.5	0.8	0 $\pm$ 0.8	1.8		
<b>NEW</b> ECQUAAF335□( )	3.3	31.0	19.0	29.0	27.5	0.8	0 $\pm$ 0.8	1.8	150	150
<b>NEW</b> ECQUAAF475□( )	4.7	31.0	23.0	33.0	27.5	0.8	0 $\pm$ 0.8	1.8	100	100

\* □ : Capacitance tolerance code  
( ) : Suffix for lead form

## Metallized Polyester Film Capacitor

Type : **ECQUL** [Class X2]  
[Class Y2/X2]

In accordance with UL/CSA and European safety regulation class X2 or class Y2/X2



### Features

- Compact
- Flame-retardant plastic case and non-combustible resin
- RoHS directive compliant

### Recommended applications

- Interference suppressors

### Explanation of part number

1	2	3	4	5	6	7	8	9	10	11	12
<b>E</b>	<b>C</b>	<b>Q</b>	<b>U</b>	<b>2</b>	<b>A</b>					<b>L</b>	
Product code		Dielectric & construction		Rated voltage		Capacitance			Cap. Tol.	Suffix	Suffix
									K ±10 %		Code
									M ±20 %		Lead Form
											Blank Straight
											A Cut lead

### Applicable standard

\* It is certified as type ECQUL in the following approval.

Approval		Class	Capacitance range	Certification organization
UL	UL60384-14	Class Y2/X2	(0.0010 µF to 0.0068 µF)	UL
		Class X2	(0.0082 µF to 2.2 µF)	
CSA	CAN/CSA E60384-14	Class Y2/X2	(0.0010 µF to 0.0068 µF)	CSA
		Class X2	(0.0082 µF to 2.2 µF)	
	CSA C22.2 No.8-M1986	Electromagnetic Interference (EMI) Filters	(1.2 µF to 2.2 µF)	
Europe	EN60384-14	Class Y2/X2	(0.0010 µF to 0.0068 µF)	VDE
		Class X2	(0.0082 µF to 2.2 µF)	
International	IEC60384-14	Class Y2/X2	(0.0010 µF to 0.0068 µF)	
		Class X2	(0.0082 µF to 2.2 µF)	

\* When applying this capacitor to European and American safety standards, please use type designation and rating such as ECQUL, 0.1 µF.

\* Approval number (File No.) of safety regulations are subject to revision without notice. Ask factory for a copy of the latest file No.

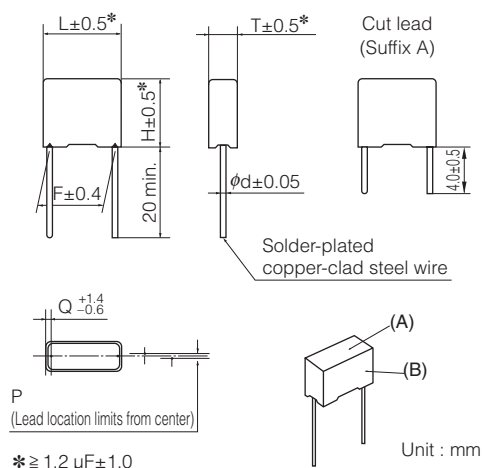
\* This capacitor is recognized for European standards by VDE only. But, there are no problems using this capacitor in a device which will get approvals from certification bodies in Europe, SEMKO, DEMKO, NEMKO, FIMKO and SEV etc.

### Specifications

Category temperature range	-40 °C to +100 °C (85 °C max. on CSA C22.2 No.8 spec.)
Rated voltage	275 V.AC (250 V.AC on CSA C22.2 No.8 spec.)
Rated capacitance	0.0010 µF to 2.2 µF
Capacitance tolerance	±10 % (K), ±20 % (M)
Dissipation factor (tan δ)	tan δ ≤ 1.0 % (20 °C, 1 kHz)
Withstand voltage	Between terminals : 575 V.AC, 1768 V.DC, 60 s (0.0082 µF to 2.2 µF) Between terminals : 1500 V.AC, 2121 V.DC, 60 s (0.0010 µF to 0.0068 µF) Between terminals to enclosure : 2050 V.AC, 60 s
Insulation resistance (IR)	C ≤ 0.33 µF : IR ≥ 15000 MΩ (20 °C, 100 V.DC, 60 s) C > 0.33 µF : IR ≥ 5000 MΩ · µF (20 °C, 100 V.DC, 60 s) IR ≥ 2000 MΩ (20 °C, 500 V.DC, 60 s)

\* Use of this capacitor is limited to AC voltage (50 Hz or 60 Hz sine wave).

## Dimensions



Marking example

STYLE	(A) side	(B) side
1 0.0010 μF to 0.0068 μF	0.001 μF K	ECQUL 275V~ X2/Y2
2 0.0082 μF to 1.0 μF	0.0082 μF K	ECQUL 275V~ X2
3 1.2 μF to 2.2 μF	1.5 μF K	ECQUL 275V~ X2

Note : Only ±10 % as cap. tol.  
be marked as "K".

Note : □ Date code.

## Rating · Dimensions · Quantity

- Capacitance tolerance : ±10 % (K), ±20 % (M)

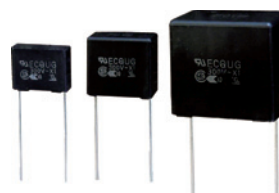
Part No.	Capacitance (μF)	Dimensions (mm)							Min. order Q'ty	
		L	T	H	F	φd	P	Q	Straight	Cut lead
ECQU2A102□L ( )	0.0010	15.0	5.0	11.5	12.5	0.6	0±0.50	1.3	500	500
ECQU2A122□L ( )	0.0012	15.0	5.0	11.5	12.5	0.6	0±0.50	1.3		
ECQU2A152□L ( )	0.0015	15.0	5.0	11.5	12.5	0.6	0±0.50	1.3		
ECQU2A182□L ( )	0.0018	15.0	5.0	11.5	12.5	0.6	0±0.50	1.3		
ECQU2A222□L ( )	0.0022	15.0	5.0	11.5	12.5	0.6	0±0.50	1.3		
ECQU2A272□L ( )	0.0027	15.0	5.0	11.5	12.5	0.6	0±0.50	1.3		
ECQU2A332□L ( )	0.0033	15.0	5.0	11.5	12.5	0.6	0±0.50	1.3		
ECQU2A392□L ( )	0.0039	15.0	5.0	11.5	12.5	0.6	0±0.50	1.3		
ECQU2A472□L ( )	0.0047	15.0	5.0	11.5	12.5	0.6	0±0.50	1.3		
ECQU2A562□L ( )	0.0056	15.0	5.0	11.5	12.5	0.6	0±0.50	1.3		
ECQU2A682□L ( )	0.0068	15.0	5.0	11.5	12.5	0.6	0±0.50	1.3		
ECQU2A822□L ( )	0.0082	15.0	5.0	11.5	12.5	0.6	0±0.50	1.3		
ECQU2A103□L ( )	0.010	15.0	5.0	11.5	12.5	0.6	0±0.50	1.3		
ECQU2A123□L ( )	0.012	15.0	5.0	11.5	12.5	0.6	0±0.50	1.3		
ECQU2A153□L ( )	0.015	15.0	5.0	11.5	12.5	0.6	0±0.50	1.3		
ECQU2A183□L ( )	0.018	15.0	5.0	11.5	12.5	0.6	0±0.50	1.3		
ECQU2A223□L ( )	0.022	15.0	5.0	11.5	12.5	0.6	0±0.50	1.3		
ECQU2A273□L ( )	0.027	15.0	5.0	11.5	12.5	0.6	0±0.50	1.3		
ECQU2A333□L ( )	0.033	15.0	6.0	13.0	12.5	0.6	0±0.50	1.3		
ECQU2A393□L ( )	0.039	15.0	6.0	13.0	12.5	0.6	0±0.50	1.3		
ECQU2A473□L ( )	0.047	15.0	6.0	13.0	12.5	0.6	0±0.50	1.3		
ECQU2A563□L ( )	0.056	17.5	4.5	11.5	15.0	0.6	0±0.50	1.3		
ECQU2A683□L ( )	0.068	17.5	4.5	11.5	15.0	0.6	0±0.50	1.3		
ECQU2A823□L ( )	0.082	17.5	5.5	12.0	15.0	0.6	0±0.50	1.3		
ECQU2A104□L ( )	0.10	17.5	5.5	12.0	15.0	0.6	0±0.50	1.3		
ECQU2A124□L ( )	0.12	17.5	6.5	14.5	15.0	0.6	0±0.50	1.3		
ECQU2A154□L ( )	0.15	17.5	6.5	14.5	15.0	0.6	0±0.50	1.3		
ECQU2A184□L ( )	0.18	17.5	8.0	16.0	15.0	0.6	0±0.50	1.3		
ECQU2A224□L ( )	0.22	17.5	8.0	16.0	15.0	0.6	0±0.50	1.3		
ECQU2A274□L ( )	0.27	17.5	9.5	17.5	15.0	0.8	0±0.50	1.3		
ECQU2A334□L ( )	0.33	17.5	9.5	17.5	15.0	0.8	0±0.50	1.3		
ECQU2A394□L ( )	0.39	25.5	8.5	17.5	22.5	0.8	0±0.75	1.5	300	400
ECQU2A474□L ( )	0.47	25.5	8.5	17.5	22.5	0.8	0±0.75	1.5		
ECQU2A564□L ( )	0.56	25.5	10.5	19.5	22.5	0.8	0±0.75	1.5		
ECQU2A684□L ( )	0.68	25.5	10.5	19.5	22.5	0.8	0±0.75	1.5	200	200
ECQU2A824□L ( )	0.82	25.5	12.0	22.0	22.5	0.8	0±0.75	1.5		
ECQU2A105□L ( )	1.0	25.5	12.0	22.0	22.5	0.8	0±0.75	1.5		
ECQU2A125□L ( )	1.2	30.5	16.5	26.0	27.5	0.8	0±0.75	1.5	150	150
ECQU2A155□L ( )	1.5	30.5	16.5	26.0	27.5	0.8	0±0.75	1.5		
ECQU2A185□L ( )	1.8	30.5	19.0	29.5	27.5	0.8	0±0.75	1.5		
ECQU2A225□L ( )	2.2	30.5	19.0	29.5	27.5	0.8	0±0.75	1.5		

\* □ : Capacitance tolerance code  
( ) : Suffix for lead form

## Metallized Polyester Film Capacitor

Type : **ECQUG [Class X1]**

In accordance with UL/CSA  
and European safety regulation class X1



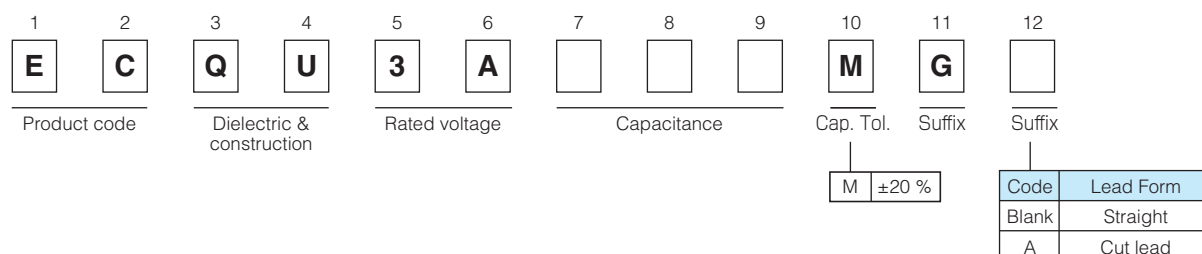
## Features

- Equipped with a safety mechanism
- Flame-retardant plastic case and non combustible resin
- RoHS directive compliant

## Recommended applications

- Interference suppressors

## Explanation of part number



### Applicable standard

\* It is certified as type ECQUG in the following approval.

Approval		Class	Certification organization
UL	UL60384-14	Class X1	UL
CSA	CAN/CSA E60384-14	Class X1	CSA
Europe	EN60384-14	Class X1	VDE
International	IEC60384-14	Class X1	

\* When applying this capacitor to European and American safety standards, please use type designation and rating such as ECQUG, 0.1  $\mu$ F.

\* Approval number (File No.) of safety regulations are subject to revision without notice. Ask factory for a copy of the latest file No..

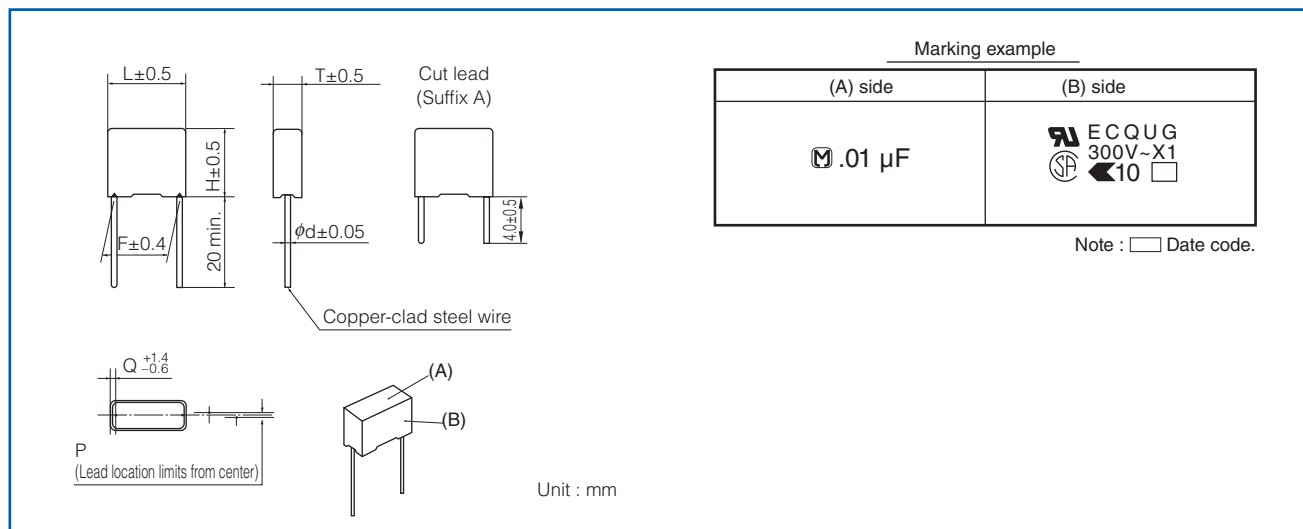
\* European standards marking are ENEC (VDE). But, there are no problem using this capacitor in a device which will get approvals from certification bodies in Europe. NEMKO, FIMKO, SEMKO, DEMKO, and SEV etc.

## Specifications

Category temperature range	−40 °C to +100 °C
Rated voltage	300 V.AC
Rated capacitance	0.010 μF to 1.0 μF (E6)
Capacitance tolerance	±20 % (M)
Dissipation factor ( $\tan \delta$ )	$\tan \delta \leq 1.0 \%$ (20 °C, 1 kHz )
Withstand voltage	Between terminals : 575 V.AC, 1768 V.DC, 60 s Between terminals to enclosure : 2100 V.AC, 60 s
Insulation resistance (IR)	$C \leq 0.33 \mu F$ : $IR \geq 15000 M\Omega$ (20 °C, 100 V.DC, 60 s) $C > 0.33 \mu F$ : $IR \geq 5000 M\Omega \cdot \mu F$ (20 °C, 100 V.DC, 60 s) $IR \geq 2000 M\Omega$ (20 °C, 500 V.DC, 60 s)

\* Use of this capacitor is limited to AC voltage (50 Hz or 60 Hz sine wave).

## Dimensions



## Rating · Dimensions · Quantity

- Capacitance tolerance :  $\pm 20\%$ (M)

Part No.	Capacitance ( $\mu$ F)	Dimensions (mm)							Min. order Q'ty	
		L	T	H	F	$\phi d$	P	Q	Straight	Cut lead
ECQU3A103MG( )	0.010	15.0	5.0	11.5	12.5	0.6	0 $\pm$ 0.50	1.3	500	500
ECQU3A153MG( )	0.015	15.0	5.0	11.5	12.5	0.6	0 $\pm$ 0.50	1.3		
ECQU3A223MG( )	0.022	15.0	5.0	11.5	12.5	0.6	0 $\pm$ 0.50	1.3		
ECQU3A333MG( )	0.033	15.0	6.0	13.0	12.5	0.6	0 $\pm$ 0.50	1.3		
ECQU3A473MG( )	0.047	15.0	6.0	13.0	12.5	0.6	0 $\pm$ 0.50	1.3		
ECQU3A683MG( )	0.068	15.0	8.0	15.0	12.5	0.6	0 $\pm$ 0.50	1.3		
ECQU3A104MG( )	0.10	15.0	8.0	15.0	12.5	0.6	0 $\pm$ 0.50	1.3		
ECQU3A154MG( )	0.15	18.0	8.0	16.5	15.0	0.8	0 $\pm$ 0.50	1.3		
ECQU3A224MG( )	0.22	18.0	9.0	17.5	15.0	0.8	0 $\pm$ 0.50	1.3		
ECQU3A334MG( )	0.33	26.0	9.0	18.5	22.5	0.8	0 $\pm$ 0.50	1.5		
ECQU3A474MG( )	0.47	26.0	10.5	20.0	22.5	0.8	0 $\pm$ 0.75	1.5	300	400
ECQU3A684MG( )	0.68	26.0	12.5	22.0	22.5	0.8	0 $\pm$ 0.75	1.5		300
ECQU3A105MG( )	1.0	27.0	16.5	25.5	22.5	0.8	0 $\pm$ 0.75	2.2		300

\* ( ) : Suffix for lead form

## Film Capacitor for AC Motor

Type : **AMF Series**



### Features

- High safety (Safety function installed)
- High reliability
- Small size, lightness, and low loss
- RoHS directive compliant

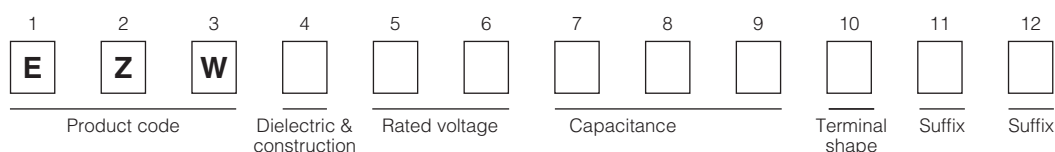
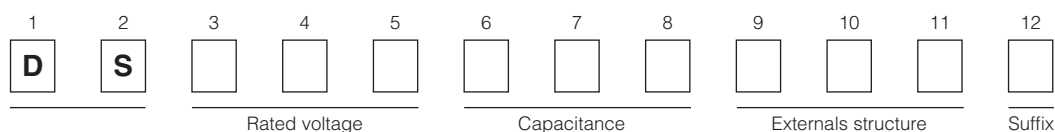
### Recommended applications

- Motor and compressor (for running)

### Construction

- Internal electrode : Metallized plastic film (Safety function installed)
- Plastic case : UL94 V-0
- Sealing : UL94 V-0
- Terminal : Faston terminal (tin plating)

### Explanation of part number



### Applicable standard

Japan	JIS C 4908 Capacitors for electrical apparatus CMJ registration parts. Registration No.1475- C9902-026(JET)
UL/cUL	UL810/CSA C22.2 No. 190 FILE No. E76560

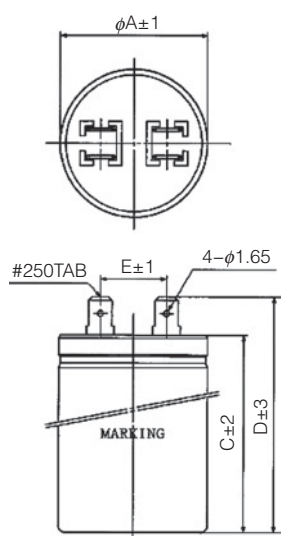
### Specifications

Applicable standard *1		JIS UL
Safety class		Safety function installed P2 (CMJ approval), 10000 AFC (UL)
Rated voltage (50/60 Hz) *2		180 V.AC to 440 V.AC
Rated capacitance *2		10 $\mu$ F to 40 $\mu$ F
Capacitance tolerance		-5 %/+10 % (Refer to the individual drawing)
Withstand voltage	Between terminals	Rated voltage $\times$ 1.75, 60 s
	Between terminals to enclosure	(min. 2000 V.AC) Rated voltage $\times$ 2.0+1000 (V.AC), 60 s
Maximum permissible temperature (Case wall)		70 °C (Including self temperature rising)

\*1 The range of approval is different depending on each approval.

\*2 These are typical values.

## Dimension (Example)\*3



Unit : mm

\*3 Other shape and specific requirement can be designed. Please contact, if necessary.

## Rating · Dimensions\*4

Rated voltage (V.AC)	Capacitance ( $\mu\text{F}$ )	Dimensions (mm)				
		A	B	C	D	E
440	10.0	40.0	60.0	70.5	18.0	16.0
	10.5 to 18.5	40.0	90.0	100.5	18.0	16.0
	19.0 to 27.5	40.0	120.0	130.5	18.0	16.0
	16.0 to 21.0	45.0	80.0	90.5	18.0	16.0
	21.5 to 25.0	45.0	90.0	100.5	18.0	16.0
	25.5 to 28.5	45.0	100.0	110.5	18.0	16.0
	29.0 to 36.5	45.0	120.0	130.5	18.0	18.0
	31.0 to 37.0	50.0	100.0	100.5	18.0	18.0
	37.5 to 40.0	50.0	120.0	130.5	18.0	18.0

\*4 Please contact if necessary other Voltage and Capacitance.



## Film Capacitor for AC Motor

Type : **DMF Series**



### Features

- High safety (with built-in safety device)
- High reliability, Safety standard approval
- Small size, lightness, and low loss
- RoHS directive compliant

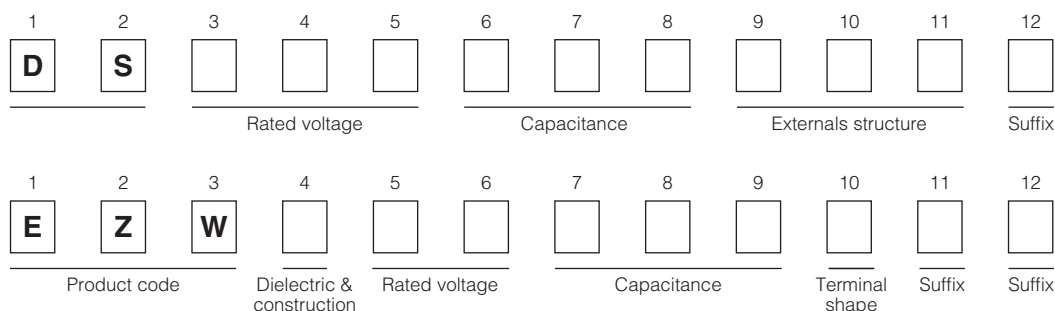
### Recommended applications

- Motor and compressor (for running)

### Construction

- Internal electrode : Metallized plastic film
- Exterior material : Metal case (oil sealing up type)
- Terminal : Faston terminal (tin plating)

### Explanation of part number



### Applicable standard

Japan	JIS C 4908 Capacitors for electrical apparatus CMJ registration parts. Registration No.1475- C9902-026(JET)
UL/cUL	UL810/CSA C22.2 No. 190 FILE No. E76560
Europe	EN60252-1 AC motor Capacitors TUV
China	GB/T 3667.1 AC motor Capacitors CQC

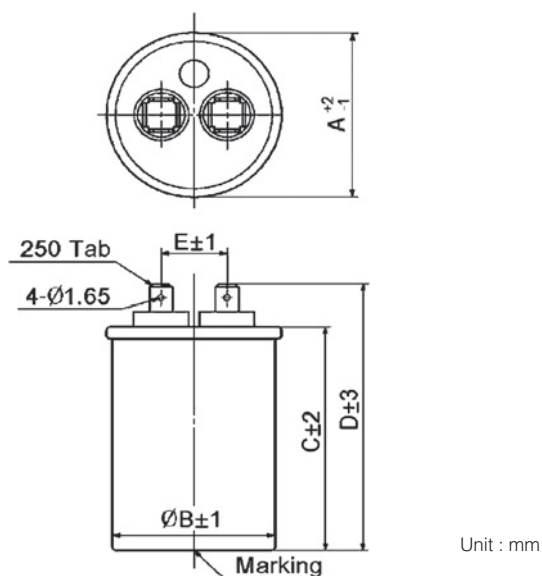
### Specifications

Applicable standard *1		JIS UL	EN GB
Safety class		With built-in safety device P1(CMJ approval) 10000 AFC (UL)	S2
Rated voltage (50/60 Hz) *2		180 V.AC to 450 V.AC	EN GB : 440 V.AC, 450 V.AC
Rated capacitance *2		10 $\mu$ F to 60 $\mu$ F	
Capacitance tolerance		-5 %/+10 %, $\pm$ 5 % (Refer to the individual drawing)	
Withstand voltage	Between terminals	Rated voltage $\times$ 1.75, 60 s	Rated voltage $\times$ 2.0, 60 s
	Between terminals to enclosure	(min. 2000 V.AC) Rated voltage $\times$ 2.0+1000 (V.AC), 60 s	
Maximum permissible temperature (Case wall)		70 °C (Including self temperature rising)	

\*1 The range of approval is different depending on each approval.

\*2 These are typical values.

## Dimension (Example)<sup>\*3</sup>



<sup>\*3</sup> Other shape and specific requirement can be designed. Please contact, if necessary.  
Three tabs and as many as four tabs are also possible though standards of the number of terminal tabs are two tabs.

## Rating · Dimensions<sup>\*4</sup>

Rated voltage (V.AC)	Capacitance ( $\mu$ F)	Dimensions (mm)				
		A	B	C	D	E
370 to 440	5.0 to 10.0	43.0	41.0	70.0	83.0	16.0
	11.0 to 15.0	43.0	41.0	80.0	93.0	16.0
	16.0 to 20.0	43.0	41.0	90.0	103.0	16.0
	21.0 to 25.0	43.0	41.0	100.0	113.0	16.0
	26.0 to 30.0	43.0	41.0	110.0	123.0	16.0
	31.0 to 35.0	43.0	41.0	130.0	143.0	16.0
	36.0 to 40.0	48.0	45.0	110.0	123.0	18.0
	41.0 to 50.0	48.0	45.0	130.0	143.0	18.0
	51.0 to 55.0	53.0	50.5	110.0	123.0	18.0
	56.0 to 60.0	63.0	60.5	90.0	103.0	20.0
	61.0 to 65.0	63.0	60.5	100.0	113.0	20.0

Rated voltage (V.AC)	Capacitance ( $\mu$ F)	Dimensions (mm)				
		A	B	C	D	E
450	5.0 to 10.0	43.0	41.0	70.0	83.0	16.0
	11.0 to 15.0	43.0	41.0	90.0	103.0	16.0
	16.0 to 20.0	43.0	41.0	110.0	123.0	16.0
	21.0 to 25.0	48.0	45.0	100.0	113.0	18.0
	26.0 to 30.0	48.0	45.0	110.0	123.0	18.0
	31.0 to 35.0	53.0	50.5	100.0	113.0	18.0
	36.0 to 40.0	53.0	50.5	110.0	123.0	18.0
	41.0 to 50.0	63.0	60.5	100.0	113.0	20.0
	51.0 to 55.0	63.0	60.5	110.0	123.0	20.0
	56.0 to 60.0	63.0	60.5	130.0	143.0	20.0

<sup>\*4</sup> Please contact if necessary other Voltage and Capacitance.

## Film Capacitor for AC Motor

Type : **PMF Series**



### Features

- High safety (safety function installed)
- High reliability, safety standard approval
- Small size, lightness, and low loss
- RoHS directive compliant

### Recommended applications

- Motor and small compressor (for running)

### Construction

- Internal electrode : Metallized plastic film (safety function installed)
- Plastic case : UL94 V-0
- Sealing : UL94 V-0
- Terminal : Faston terminal (tin plating), Lead wire (tin plating), Insulated wire

### Explanation of part number

1	2	3	4	5	6	7	8	9	10	11	12
<b>D</b>	<b>S</b>										
Rated voltage				Capacitance				Externals structure			Suffix
1	2	3	4	5	6	7	8	9	10	11	12
<b>E</b>	<b>Z</b>	<b>P</b>									
Product code		Dielectric & construction		Rated voltage		Capacitance		Terminal shape	Suffix	Suffix	

### Applicable standard

Japan	JIS C 4908 Capacitors for electrical apparatus CMJ registration parts. Registration No.1475- C9902-026(JET)
UL/cUL CSA	UL810 FILE No. E76560 CSA C22.2 No. 190
Europe	EN60252-1 AC motor Capacitors TUV
China	GB/T 3667.1 AC motor Capacitors CQC

### Specifications

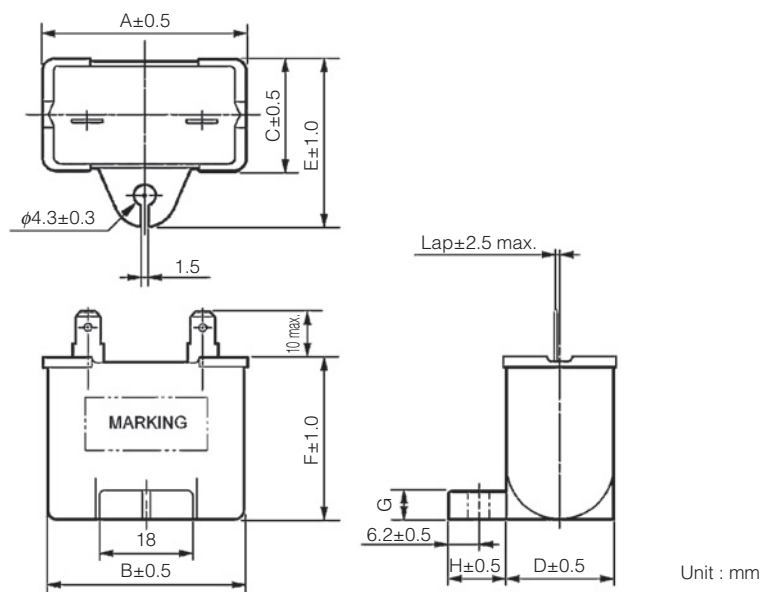
Applicable standard *1		JIS UL	EN GB
Safety class		With built-in safety function P2 (CMJ approval) 10000 AFC (UL)	S3
Rated voltage (50/60 Hz) *2		150 V.AC to 500 V.AC (For UL Approved P/N : up to 480 V.AC)	EN/TUV : 450 V.AC GB : 250 V.AC, 450 V.AC
Rated capacitance *2		0.5 $\mu$ F to 65 $\mu$ F	
Capacitance tolerance		-5 %/+10 %, $\pm$ 5 % (Refer to the individual drawing)	
Withstand voltage	Between terminals	Rated voltage $\times$ 1.75, 60 s	Rated voltage $\times$ 2.0, 60 s
	Between terminals to enclosure	(min. 2000 V) Rated voltage $\times$ 2.0+1000 (V), 60 s	
Maximum permissible temperature (Case wall)		70 °C (Including self temperature rising)	

\*1 The range of approval is different depending on each approval.

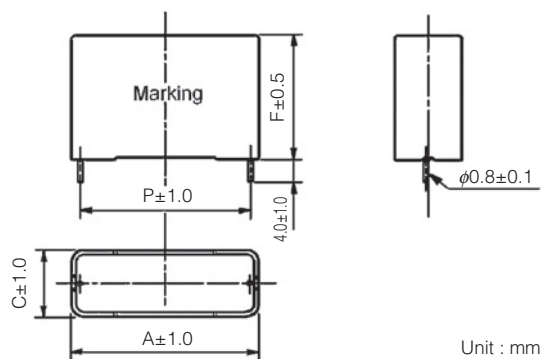
\*2 These are typical values.

## Dimension (Example)\*3

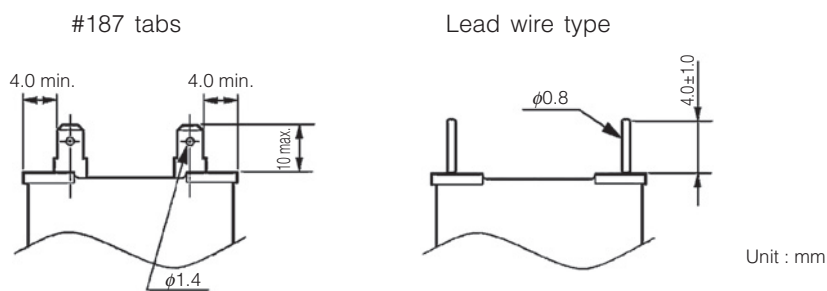
- Q series (Mounting type) \* Non Mounting type is available. (P series).



- T series (Printed circuit board (PCB))



- Terminal shape (Standard)



\*3 Other shape and specific requirement can be designed. Please contact, if necessary.

## Rating · Dimensions\*4

### ● Q series (Mounting type)

Rated voltage (V.AC)	Capacitance (μF)	Dimensions (mm)								Case series
		A	B	C	D	E	F	G	H	
250	3.0 to 4.5	39.5	38.5	16.2	14.8	27.0	27.0	4.0	11.5	Q
	5.0 to 6.0	39.5	38.2	18.3	16.8	29.0	29.0			
	6.5 to 9.5	39.5	38.2	22.0	20.8	32.5	32.5			
	10.0 to 16.0	49.7	48.3	24.0	22.5	34.5	34.5			
	16.5 to 20.0	50.0	48.5	26.7	25.3	37.5	38.0			
	20.5 to 25.0	50.0	48.5	30.5	28.8	41.0	41.5			
	25.5 to 34.5	50.0	48.5	34.0	32.6	45.0	45.0	6.0		
450	1.0 to 1.4	39.5	38.5	16.2	14.8	27.0	27.0	4.0	11.5	
	1.5 to 1.8	39.5	38.2	18.3	16.8	29.0	29.0			
	1.9 to 2.5	39.5	38.2	22.0	20.8	32.5	32.5			
	3.0 to 5.0	49.7	48.3	24.0	22.5	34.5	34.5			
	5.5 to 6.5	50.0	48.5	26.7	25.3	37.5	38.0			
	7.0 to 8.0	50.0	48.5	30.5	28.8	41.0	41.5			
	8.5 to 10.5	50.0	48.5	34.0	32.6	45.0	45.0	6.0		

### ● T series (Printed circuit board (PCB))

Rated voltage (V.AC)	Capacitance (μF)	Dimensions (mm)				Case series
		A	C	F	P	
250	3.0 to 4.0	38.5	14.0	25.5	36.0	T
	4.5 to 6.5	38.5	15.5	29.0	36.0	
	7.0 to 8.0	38.5	20.5	29.0	36.0	
	8.5 to 11.0	38.5	25.0	34.0	36.0	
	11.5 to 18.5	48.5	22.0	36.0	46.0	
450	1.0 to 1.3	38.5	14.0	25.5	36.0	
	1.4 to 2.0	38.5	15.5	29.0	36.0	
	2.1 to 2.5	38.5	20.5	29.0	36.0	
	3.0 to 3.5	38.5	25.0	34.0	36.0	
	4.0 to 5.5	48.5	22.0	36.0	46.0	

\*4 Please contact if necessary other Voltage and Capacitance.

## Film Capacitor for AC Motor

Type : **SMF Series**



### Features

- High safety (safety function installed)
- High reliability, safety standard approval
- Small size, lightness, and low loss
- RoHS directive compliant

### Recommended applications

- Motor and small compressor (for running)

### Construction

- Internal electrode : Metallized plastic film (safety function installed)
- Plastic case : UL94 V-0
- Sealing : UL94 V-0
- Terminal : Faston terminal (tin plating), Lead wire (tin plating), Insulated wire

### Explanation of part number

1	2	3	4	5	6	7	8	9	10	11	12
<b>D</b>	<b>S</b>										
Rated voltage				Capacitance				Externals structure		Suffix	
1	2	3	4	5	6	7	8	9	10	11	12
<b>E</b>	<b>Z</b>	<b>S</b>									
Product code		Dielectric & construction		Rated voltage		Capacitance		Terminal shape		Suffix	Suffix

### Applicable standard

Japan	JIS C 4908 Capacitors for electrical apparatus CMJ registration parts. Registration No.1475- C9902-026(JET)
UL/cUL	UL810 FILE No. E76560
Europe	EN60252-1 AC motor Capacitors VDE
China	GB/T 3667.1 AC motor Capacitors CQC

### Specifications

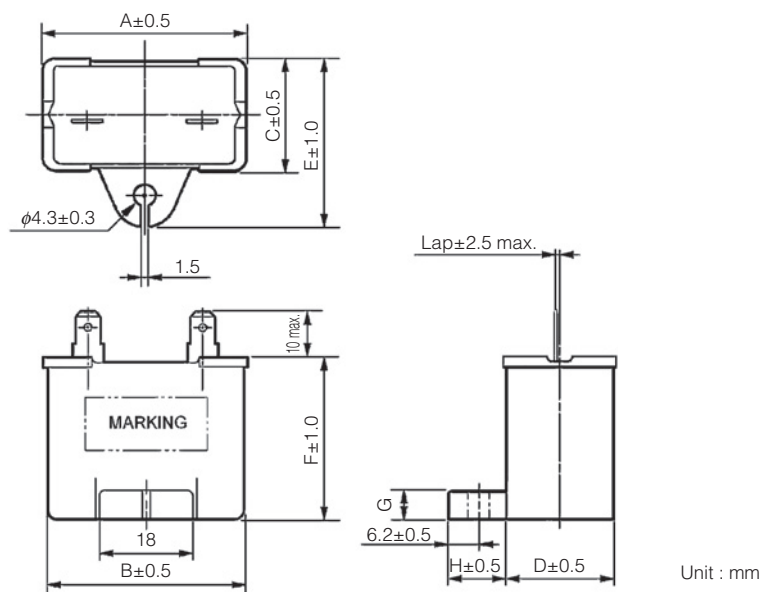
Applicable standard *1		JIS UL	EN GB
Safety class		With built-in safety function P2 (CMJ approval) 10000 AFC (UL)	S0
Rated voltage (50/60 Hz) *2		370 V.AC to 450 V.AC	400 V.AC, 450 V.AC
Rated capacitance *2		1.5 $\mu$ F to 9 $\mu$ F	
Capacitance tolerance		-5 %/+10 %, $\pm$ 5 % (Refer to the individual drawing)	
Withstand voltage	Between terminals	Rated voltage $\times$ 1.75, 60 s	Rated voltage $\times$ 2.0, 60 s
	Between terminals to enclosure	(min. 2000 V) Rated voltage $\times$ 2.0+1000 (V), 60 s	
Maximum permissible temperature (Case wall)		70 °C (Including self temperature rising)	

\*1 The range of approval is different depending on each approval.

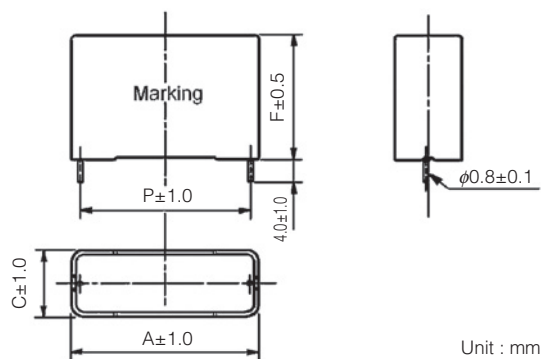
\*2 These are typical values.

## Dimension (Example)\*3

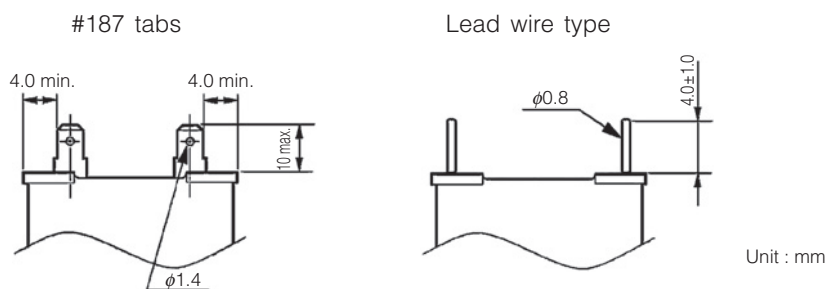
- SQ series (Mounting type) \* Non Mounting type is available. (SP series).



- T series (Printed circuit board (PCB))



- Terminal shape (Standard)



\*3 Other shape and specific requirement can be designed. Please contact, if necessary.

## Rating · Dimensions\*4

### ● SQ series (Installation leg type)

Rated voltage (V.AC)	Capacitance (μF)	Dimensions (mm)								Case series	
		A	B	C	D	E	F	G	H		
400	1.5 to 3.0	39.5	38.0	16.0	14.5	26.5	30.5	4.0	11.0	SQ	
	3.5	39.5	38.0	17.5	16.0	28.0	30.5				
	4.0 to 5.0	39.5	38.0	22.0	20.5	32.5	30.5				
	5.5 to 6.5	39.5	38.0	26.7	25.2	37.0	32.0				
	7.0 to 8.0	39.5	38.0	26.7	25.2	37.0	37.0				
	8.5 to 9.0	39.5	38.0	26.7	25.2	37.0	41.0				
450	1.5 to 2.5	39.5	38.0	16.0	14.5	26.5	30.5	4.0	11.0		
	3.0	39.5	38.0	17.5	16.0	28.0	30.5				
	3.5 to 4.0	39.5	38.0	22.0	20.5	32.5	30.5				
	4.5 to 5.5	39.5	38.0	26.7	25.2	37.0	32.0				
	6.0 to 6.5	39.5	38.0	26.7	25.2	37.0	37.0				
	7.0 to 7.5	39.5	38.0	26.7	25.2	37.0	41.0				

### ● T series (Printed circuit board (PCB))

Rated voltage (V.AC)	Capacitance (μF)	Dimensions (mm)				Case series
		A	C	F	P	
400	1.5 to 2.5	38.5	14.0	25.5	36.0	T
	3.0 to 3.5	38.5	15.5	29.0	36.0	
	4.0 to 5.0	38.5	20.5	29.0	36.0	
	5.5 to 7.5	38.5	25.0	34.0	36.0	
450	1.5 to 2.0	38.5	14.0	25.5	36.0	
	2.5 to 3.0	38.5	15.5	29.0	36.0	
	3.5 to 4.0	38.5	20.5	29.0	36.0	
	4.5 to 6.5	38.5	25.0	34.0	36.0	

\*4 Please contact if necessary other Voltage and Capacitance.



## Metalized Polyester Film Capacitor for Noise suppression of Automobile

Type : **ECQE**

Non-inductive construction using metallized polyester film with flame retardant epoxy resin



### Features

- Excellent water-proof and corrosion-proof construction properties.
- Guaranteed operation temperature of 130 °C max
- Available with wide variety of terminals, including blacket and lead wire
- RoHS directive compliant

### Recommended applications

- Noise suppression for automobile

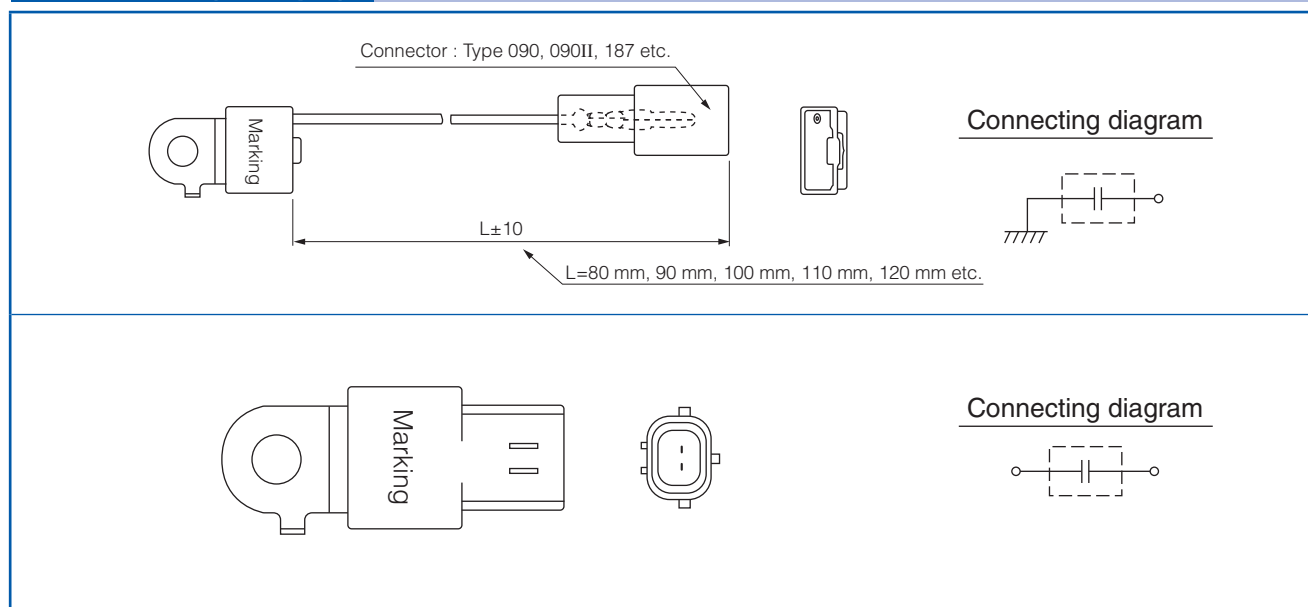
### Explanation of part number

1	2	3	4	5	6	7	8	9	10	11	12
<b>E</b>	<b>C</b>	<b>Q</b>	<b>E</b>	<b>2</b>	<b>4</b>	<b>7</b>	<b>4</b>				
Product code		Dielectric & construction		Rated voltage		Capacitance		Suffix	Suffix	Suffix	Suffix

### Applicable standard

Category temperature range (Including temperature-rise on unit surface)	-40 °C to +130 °C (Except cord, connector, tube and tape)
Rated voltage *	250 V.DC (Derating of rated voltage by 1.11 %/°C at more than 85 °C)
Rated capacitance *	0.47 μF, 2.2 μF, 4.7 μF
Capacitance tolerance	±20 % (M)
Dissipation factor (tan δ)	tan δ ≤ 1.0 % (20 °C, 1 kHz )
Withstand voltage	250 V.DC × 150 % for 60 s
Insulation resistance (IR)	IR ≥ 3000 MΩ · μF (20 °C, 100 V.DC, 60 s)

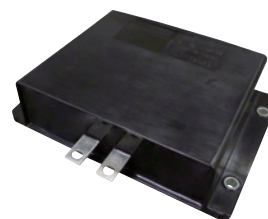
### Dimensions (Example)



\* Other voltage ratings, capacitance values and special dimensions are available upon request.  
Please consult engineering section.

## DC-Link Film Capacitor

Type : **TYPE1**



### Features

- High safety, Self-healing and Self-protecting function built in.
- No catastrophic failure upon natural end of life due to inbuilt fuse function.
- Open circuit failure mode by fuse function patterned electrode
- Can replace Electrolytic Capacitor
- Low ESR, High Ripple Current capability
- Low ESL
- RoHS directive compliant

### Recommended applications

- Any automotive and/or other application requiring DC Linkage
- \* Verify the usage and fitting environments, and make sure to observe the rated performance specified in the corresponding specifications.

### Construction

- Dielectric : Polypropylene
- Electrode : Metallized dielectric with Segment pattern
- Plastic Case : PPS. equivalent to UL94 V-0
- Sealing : Epoxy Resin equivalent to UL94 HB
- Terminal : Copper with Tin plating

### Explanation of part number

1	2	3	4	5	6	7	8	9	10	11	12
E	Z	T	V	K	C	T	Y	P	1	H	A

### Specifications

Operating temperature on the surface of the case	- 40 °C to +105 °C including self heat generation
Capacitance	581 μF <sup>+10%</sup> / <sub>-5%</sub> at 1 kHz, 25 °C
Rated voltage	450 V.DC
Maximum voltage	600 V.DC for 60 sec in life time
Rated ripple current	Continuous 80 Arms at 10 kHz
Current derating	Refer Fig.1
ESR	0.8 mΩ or less at 10KHz
ESL	20 nH or less at 1MHz
Insulation Resistance between Terminals and Case	1 GΩ or moreMeasure after applying 500 V.DC for 2 seconds.
Dimensions L × W × H (Typical data)	164 × 115 × 43.1 mm : Excluding terminals
Weight (Typical data)	980 g

Note:

1) Voltage includes ripple voltage

2) Derate the current when the maximum surface temperature exceeds 95 degC, as shown in Fig. 1.

## Current Derating

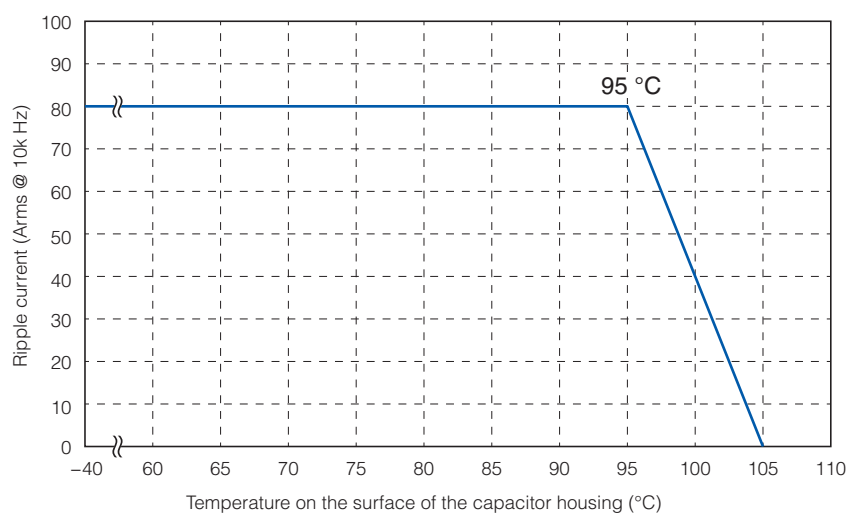
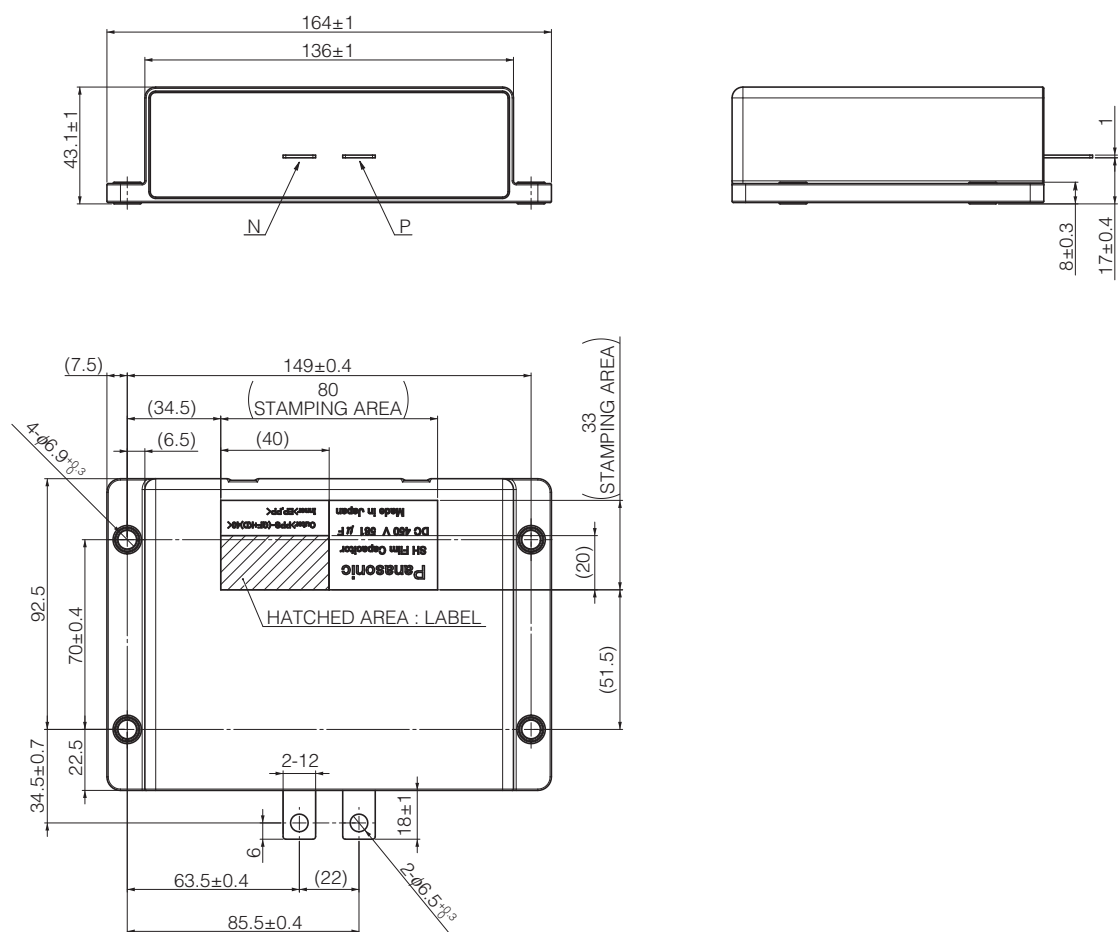


Fig.1 Current derating curve

## Dimensions

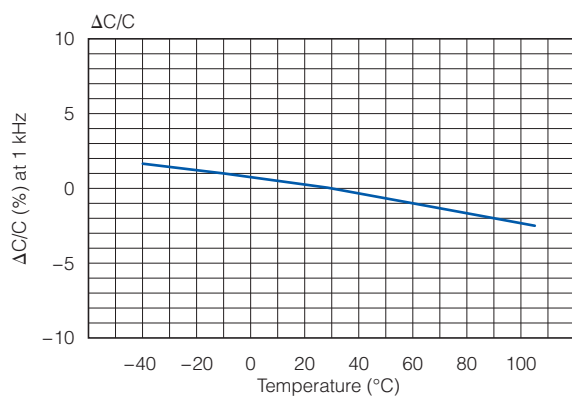
Unit : mm



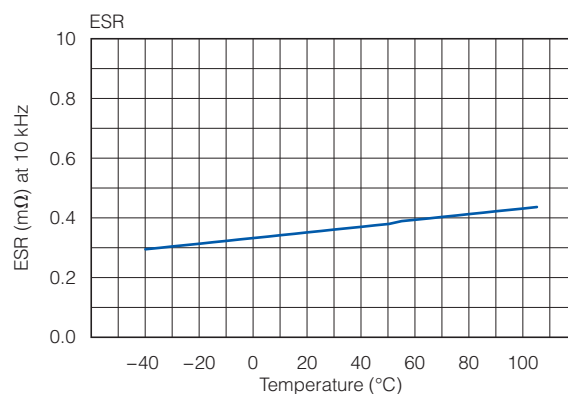
## Characteristics <Reference>

<Temperature characteristics (Typical curve)>

### ● Change of capacitance

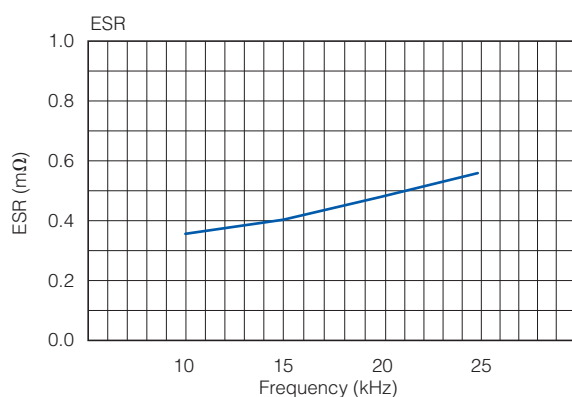


### ● Equivalent series resistance



<Frequency characteristics (Typical curve)>

### ● Equivalent series resistance



<Lifetime Expectancy (Reference)>

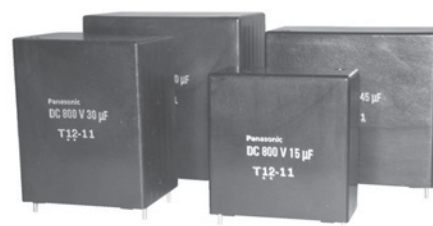
\* Expected life : 15,000 hours

\* Failure in Time : 300 Fits

The above values are reference calculated under an pre-assumed average operating condition.

## Metallized Polypropylene Film Capacitor

Type : **EZPE Series**



### Features

- High safety, Self-healing and Self-protecting function built-in
- Long product life, High reliability
- Low loss, Low ESR
- Flame retardant (Case and sealing resin)
- RoHS directive compliant

### Recommended applications

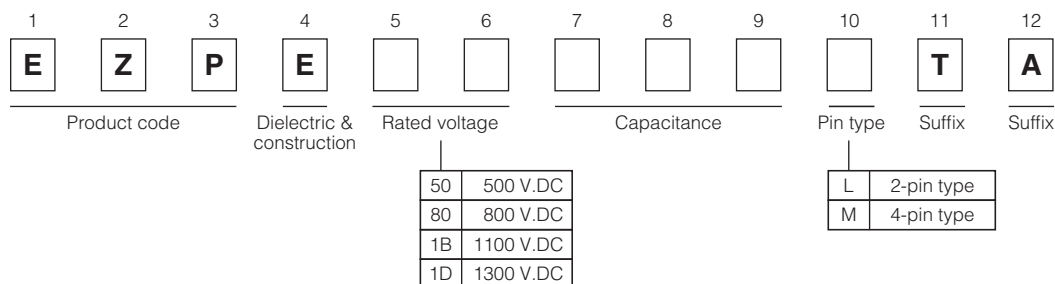
For DC filtering, DC link circuit

- Solar inverters
- Wind power generation
- Industrial power supplies
- Inverter circuit in appliances (Air Conditioners etc.)

### Construction

- Dielectric : Polypropylene film
- Electrodes : Metallized dielectric with segmented pattern
- Plastic case : UL94 V-0
- Sealing : UL94 V-0
- Terminals : Tinned wires, 2-pin and 4-pin versions

### Explanation of part number



### Specifications

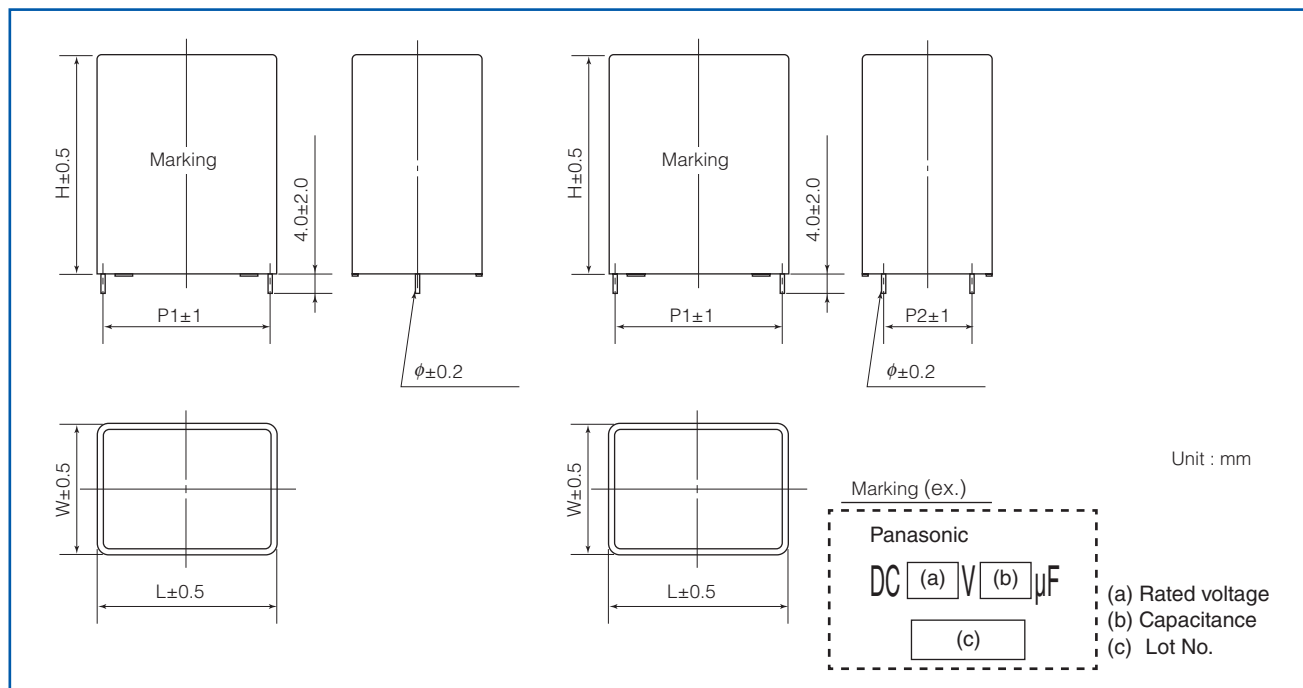
Category temperature range (T <sub>C</sub> ) *1	-40 °C to +85 °C	
Rated voltage(V <sub>R</sub> ) *2	500 V.DC, 800 V.DC, 1100 V.DC, 1300 V.DC (Derating of rated voltage by more than 70 °C *3)	
Rated capacitance (C <sub>R</sub> )	500 V.DC	10 µF to 110 µF
	800 V.DC	10 µF to 60 µF
	1100 V.DC	10 µF to 40 µF
	1300 V.DC	10 µF to 25 µF
Capacitance tolerance	±10 %	
Withstanding DC voltage	Between terminals : Rated voltage. (V.DC)×150 %, 10 s Terminal to case : 2110 V.AC (50 Hz or 60 Hz), 10 s	
Insulation resistance (CR)	CR ≥ 10000 Ω · F (20 °C, 500 V.DC, 60 s)	

\*1 : The temperature of capacitor surface (case)

\*2 : Use for DC voltage only

\*3 : Refer to the page of "DC voltage derating"

## Dimensions



## Rating · Dimensions · Quantity

● Rated voltage : 500 V.DC at 70 °C (450 V.DC at 85 °C)

Part No.	Cap. $C_R$ ( $\mu$ F)	Dimensions (mm)						dv/dt [V/ $\mu$ s]	Permissible current		ESR <sub>typ</sub> *3 (m $\Omega$ )	tan $\delta$ *4 (%)	Mass (g)	Min. order Q'ty *5 (pcs)
		W	H	L	P1	P2	$\phi$		Peak Current *1 (A <sub>o-p</sub> )	RMS Current *2 (A <sub>rms</sub> )				
EZPE50106LTA	10	20	42	41.5	37.5	—	1.2	21	210	5.0	22.0	0.28	45	600
EZPE50156LTA	15	20	42	41.5	37.5	—	1.2	21	315	7.5	14.8	0.28	45	
EZPE50206LTA	20	20	42	41.5	37.5	—	1.2	21	420	9.5	11.0	0.28	44	
EZPE50256LTA	25	20	42	41.5	37.5	—	1.2	21	525	11.0	8.8	0.28	43	
EZPE50306MTA	30	20	42	41.5	37.5	10.2	1.2	21	630	12.5	7.0	0.28	43	
EZPE50356MTA	35	30	51	41.5	37.5	10.2	1.2	21	735	13.5	6.2	0.28	83	400
EZPE50406MTA	40	30	51	41.5	37.5	10.2	1.2	21	840	14.5	5.4	0.28	82	
EZPE50456MTA	45	30	51	41.5	37.5	10.2	1.2	21	945	15.2	4.9	0.28	81	
EZPE50506MTA	50	30	51	41.5	37.5	20.3	1.2	21	1050	16.0	4.4	0.28	80	
EZPE50556MTA	55	30	51	41.5	37.5	20.3	1.2	21	1155	16.3	4.1	0.28	79	
EZPE50606MTA	60	30	51	41.5	37.5	20.3	1.2	21	1260	16.5	3.9	0.28	77	200
EZPE50656MTA	65	30	51	57.5	52.5	10.2	1.2	14	910	15.0	6.8	0.44	111	
EZPE50706MTA	70	30	51	57.5	52.5	10.2	1.2	14	980	15.5	6.5	0.44	109	
EZPE50756MTA	75	30	51	57.5	52.5	20.3	1.2	14	1050	16.0	6.0	0.44	108	
EZPE50806MTA	80	30	51	57.5	52.5	20.3	1.2	14	1120	16.5	5.7	0.44	106	
EZPE50856MTA	85	35	56	57.5	52.5	20.3	1.2	14	1190	16.7	5.4	0.44	142	200
EZPE50906MTA	90	35	56	57.5	52.5	20.3	1.2	14	1260	17.0	5.1	0.44	141	
EZPE50956MTA	95	35	56	57.5	52.5	20.3	1.2	14	1330	17.5	4.9	0.44	140	
EZPE50107MTA	100	35	56	57.5	52.5	20.3	1.2	14	1400	18.0	4.7	0.44	139	
EZPE50117MTA	110	35	56	57.5	52.5	20.3	1.2	14	1540	18.5	4.4	0.44	138	

\*1 : When rising temperature of capacitor surface by continuous peak current (included pulse current), use within limit specified for temperature of capacitor surface and self heating temperature rise.

\*2 : Maximum RMS current @70 °C, 10 kHz  
Use within limit for self heating temperature rise at capacitor surface.

\*3 : Typical values @ 20 °C, 10 kHz ESR : less than 2.5×ESR<sub>typ</sub>

\*4 : Maximum dissipation factor @ 20 °C, 1 kHz

\*5 : Minimum order quantity consists of 4 packing units.

## Rating · Dimensions · Quantity

● Rated voltage : 800 V.DC at 70 °C (700 V.DC at 85 °C)

Part No.	Cap. C <sub>R</sub> (μF)	Dimensions (mm)						dv/dt [V/μs]	Permissible current		ESR <sub>typ</sub> * <sup>3</sup> (mΩ)	tan δ * <sup>4</sup> (%)	Mass (g)	Min. order Q'ty * <sup>5</sup> (pcs)
		W	H	L	P1	P2	φ		Peak Current * <sup>1</sup> (A <sub>o-p</sub> )	RMS Current * <sup>2</sup> (A <sub>rms</sub> )				
EZPE80106LTA	10	20	42	41.5	37.5	—	1.2	22	220	7	15.8	0.22	44	600
EZPE80156MTA	15	20	42	41.5	37.5	10.2	1.2	22	330	9	10.5	0.22	43	
EZPE80206MTA	20	30	51	41.5	37.5	10.2	1.2	22	440	11	7.7	0.22	82	400
EZPE80256MTA	25	30	51	41.5	37.5	10.2	1.2	22	550	13	6.8	0.22	80	
EZPE80306MTA	30	30	51	41.5	37.5	20.3	1.2	22	660	15	5.3	0.22	78	200
EZPE80356MTA	35	30	51	57.5	52.5	10.2	1.2	15	525	12	9.7	0.33	110	
EZPE80406MTA	40	30	51	57.5	52.5	20.3	1.2	15	600	13	8.3	0.33	107	
EZPE80456MTA	45	30	51	57.5	52.5	20.3	1.2	15	675	14	7.0	0.33	104	
EZPE80506MTA	50	35	56	57.5	52.5	20.3	1.2	15	750	15	6.3	0.33	140	
EZPE80556MTA	55	35	56	57.5	52.5	20.3	1.2	15	825	16	5.9	0.33	138	
EZPE80606MTA	60	35	56	57.5	52.5	20.3	1.2	15	900	17	5.6	0.33	136	

● Rated voltage : 1100 V.DC at 70 °C (920 V.DC at 85 °C)

Part No.	Cap. C <sub>R</sub> (μF)	Dimensions (mm)						dv/dt [V/μs]	Permissible current		ESR <sub>typ</sub> * <sup>3</sup> (mΩ)	tan δ * <sup>4</sup> (%)	Mass (g)	Min. order Q'ty * <sup>5</sup> (pcs)
		W	H	L	P1	P2	φ		Peak Current * <sup>1</sup> (A <sub>o-p</sub> )	RMS Current * <sup>2</sup> (A <sub>rms</sub> )				
EZPE1B106MTA	10	20	42	41.5	37.5	10.2	1.2	54	540	7.0	12.3	0.20	43	600
EZPE1B156MTA	15	30	51	41.5	37.5	10.2	1.2	54	810	8.5	8.2	0.20	80	
EZPE1B206MTA	20	30	51	41.5	37.5	20.3	1.2	54	1080	10.0	6.3	0.20	76	400
EZPE1B256MTA	25	30	51	57.5	52.5	10.2	1.2	35	875	8.0	10.7	0.28	107	
EZPE1B306MTA	30	30	51	57.5	52.5	20.3	1.2	35	1050	9.0	8.5	0.28	103	200
EZPE1B356MTA	35	35	56	57.5	52.5	20.3	1.2	35	1225	10.0	7.2	0.28	137	
EZPE1B406MTA	40	35	56	57.5	52.5	20.3	1.2	35	1400	11.0	6.5	0.28	134	

● Rated voltage : 1300 V.DC at 70 °C (1100 V.DC at 85 °C)

Part No.	Cap. C <sub>R</sub> (μF)	Dimensions (mm)						dv/dt [V/μs]	Permissible current		ESR <sub>typ</sub> * <sup>3</sup> (mΩ)	tan δ * <sup>4</sup> (%)	Mass (g)	Min. order Q'ty * <sup>5</sup> (pcs)
		W	H	L	P1	P2	φ		Peak Current * <sup>1</sup> (A <sub>o-p</sub> )	RMS Current * <sup>2</sup> (A <sub>rms</sub> )				
EZPE1D106MTA	10	30	51	41.5	37.5	10.2	1.2	73	730	12.0	10.0	0.17	80	400
EZPE1D156MTA	15	30	51	57.5	52.5	10.2	1.2	50	750	10.0	14.5	0.22	109	200
EZPE1D206MTA	20	30	51	57.5	52.5	20.3	1.2	50	1000	14.0	11.1	0.22	103	
EZPE1D256MTA	25	35	56	57.5	52.5	20.3	1.2	50	1250	17.0	8.5	0.22	136	

\*1 : When rising temperature of capacitor surface by continuous peak current (included pulse current), use within limit specified for temperature of capacitor surface and self heating temperature rise.

\*2 : Maximum RMS current @70 °C, 10 kHz  
Use within limit for self heating temperature rise at capacitor surface.

\*3 : Typical values @ 20 °C, 10 kHz ESR : less than 2.5×ESR<sub>typ</sub>

\*4 : Maximum dissipation factor @ 20 °C, 1 kHz

\*5 : Minimum order quantity consists of 4 packing units.

## Metallized Polypropylene Film Capacitor

Type : **EZPE Series (Low profile type)**



### Features

- High safety, Self-healing and Self-protecting function built-in
- Long product life, High reliability, High moisture resistance
- Low loss, Low ESR
- Flame retardant
- Low profile design
- RoHS directive compliant

### Recommended applications

For DC filtering, DC link circuit

- Solar inverters, Micro inverters
- Wind power generation
- Industrial power supplies
- Inverter circuit in appliances (Air Conditioners etc.)

### Construction

- Dielectric : Polypropylene film
- Electrodes : Metallized dielectric with segmented pattern
- Plastic case : UL94 V-0
- Sealing : UL94 V-0
- Terminals : Tinned wires, 2-pin and 4-pin versions

### Explanation of part number

1	2	3	4	5	6	7	8	9	10	11	12	
E	Z	P	E							T		
Product code			Dielectric & construction	Rated voltage		Capacitance			Pin type	Suffix	Suffix	
				(Ex.)								
				45	450 V.DC							
				52	525 V.DC							
				57	575 V.DC							
				63	630 V.DC							
									L	2-pin type		
									M	4-pin type		

### Specifications

Category temperature range (T <sub>C</sub> ) *1	-40 °C to +85 °C	
Rated voltage(V <sub>R</sub> ) *2	450 V.DC, 525 V.DC, 575 V.DC, 630 V.DC (Derating of rated voltage by more than 70 °C *3)	
Rated capacitance (C <sub>R</sub> )	450 V.DC	66 µF
	525 V.DC	29 µF
	575 V.DC	12 µF
	630 V.DC	10 µF
Capacitance tolerance	±15 %	
Withstanding DC voltage	Between terminals : Rated voltage. (V.DC)×150 %, 10 s Terminal to case : 2000 V.AC (50 Hz or 60 Hz), 10 s	
Insulation resistance (CR)	CR ≥ 10000 Ω · F (20 °C, 500 V.DC, 60 s)	

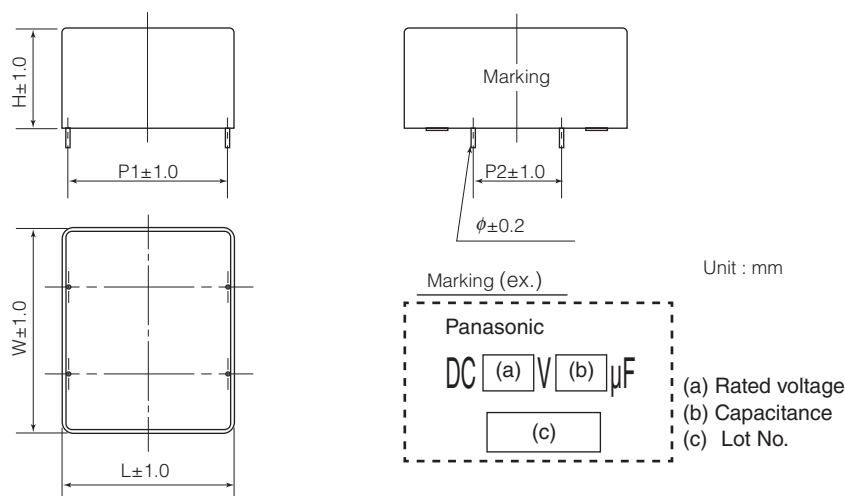
\*1 : The temperature of capacitor surface (case)

\*2 : Use for DC voltage only

\*3 : Refer to the page of "DC voltage derating"



## Dimensions



## Rating · Dimensions · Quantity

- Rated voltage : 450 V.DC at 70 °C

Part No.	Cap. $C_R$ ( $\mu$ F)	Dimensions (mm)						dv/dt [V/ $\mu$ s]	Permissible current		ESR <sub>typ</sub> *3 (m $\Omega$ )	tan $\delta$ *4 (%)	Mass (g)	Min. order Q'ty *5 (pcs)
		W	H	L	P1	P2	$\phi$		Peak Current *1 (A <sub>o-p</sub> )	RMS Current *2 (A <sub>rms</sub> )				
EZPE45666MTB	66	90	24	32.5	27.5	37.5	0.8	5	300	15.0	5.0	0.3	110	200

- Rated voltage : 525 V.DC at 70 °C

Part No.	Cap. $C_R$ ( $\mu$ F)	Dimensions (mm)						dv/dt [V/ $\mu$ s]	Permissible current		ESR <sub>typ</sub> *3 (m $\Omega$ )	tan $\delta$ *4 (%)	Mass (g)	Min. order Q'ty *5 (pcs)
		W	H	L	P1	P2	$\phi$		Peak Current *1 (A <sub>o-p</sub> )	RMS Current *2 (A <sub>rms</sub> )				
EZPE52296MTB	29	48.5	23.5	37.0	34.0	20.3	0.8	14	400	3.0	7.0	0.4	50	400

- Rated voltage : 575 V.DC at 70 °C

Part No.	Cap. $C_R$ ( $\mu$ F)	Dimensions (mm)						dv/dt [V/ $\mu$ s]	Permissible current		ESR <sub>typ</sub> *3 (m $\Omega$ )	tan $\delta$ *4 (%)	Mass (g)	Min. order Q'ty *5 (pcs)
		W	H	L	P1	P2	$\phi$		Peak Current *1 (A <sub>o-p</sub> )	RMS Current *2 (A <sub>rms</sub> )				
EZPE57126LTB	12	24.5	19.5	41.5	37.5	—	1.0	22	264	5.0	22.0	0.45	25	800

- Rated voltage : 630 V.DC at 70 °C

Part No.	Cap. $C_R$ ( $\mu$ F)	Dimensions (mm)						dv/dt [V/ $\mu$ s]	Permissible current		ESR <sub>typ</sub> *3 (m $\Omega$ )	tan $\delta$ *4 (%)	Mass (g)	Min. order Q'ty *5 (pcs)
		W	H	L	P1	P2	$\phi$		Peak Current *1 (A <sub>o-p</sub> )	RMS Current *2 (A <sub>rms</sub> )				
EZPE63106LTB	10	24.5	19.5	41.5	37.5	—	1.0	21	210	3.0	22.0	0.45	25	800

\*1 : When rising temperature of capacitor surface by continuous peak current (included pulse current),

use within limit specified for temperature of capacitor surface and self heating temperature rise.

\*2 : Maximum RMS current @ 70 °C, 10 kHz

Use within limit for self heating temperature rise at capacitor surface.

\*3 : Typical values @ 20 °C, 10 kHz ESR : less than 2.5×ESR<sub>typ</sub>

\*4 : Maximum dissipation factor @ 20 °C, 1 kHz

\*5 : Minimum order quantity consists of 4 packing units.

Design and specifications are each subject to change without notice. Ask factory for the current technical specifications before purchase and/or use.

Should a safety concern arise regarding this product, please be sure to contact us immediately.

## Metallized Polypropylene Film Capacitor

Type : **EZPQ Series**



### Features

- High Safety (Self-protecting function built-in)
- Long product life, High reliability
- Low loss, Low ESR
- Flame retardant (Case and sealing resin)
- RoHS directive compliant
- High moisture resistance (85 °C, 85%RH)

### Recommended applications

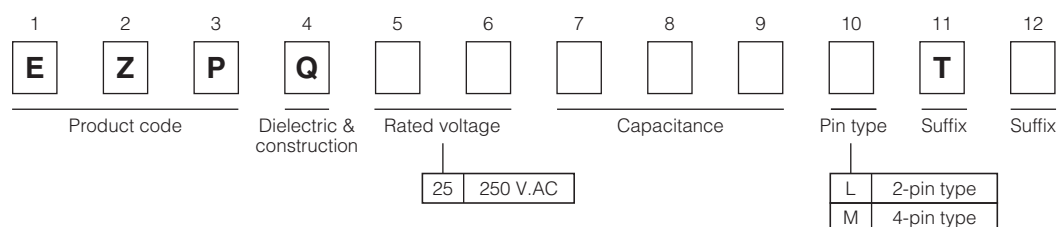
For AC filter

- Solar inverters
- UPS
- Industrial power supplies
- Inverter circuit in appliances (Air Conditioners etc.)

### Construction

- Dielectric : Polypropylene film
- Electrodes : Metallized dielectric with segmented pattern
- Plastic case : UL94 V-0
- Sealing : UL94 V-0
- Terminals : Tinned wires, 2-pin and 4-pin versions

### Explanation of part number



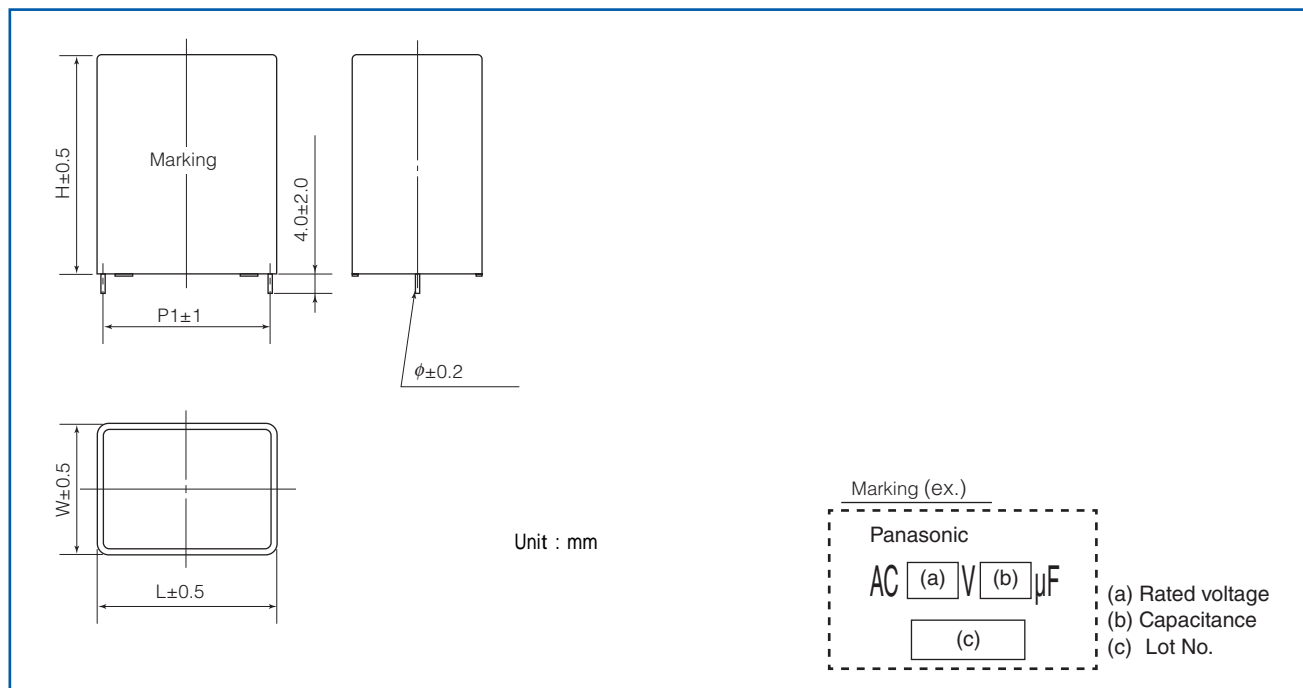
### Specifications

Category temperature range (T <sub>C</sub> ) *1	-40 °C to +85 °C	
Rated voltage(V <sub>R</sub> ) *2	250 V.AC	
Rated capacitance (C <sub>R</sub> )	250 V.DC	12, 22, 36 μF
Capacitance tolerance	±10 %	
Withstanding DC voltage	Between terminals : Rated voltage. (V.AC)×175 %, 10 s Terminal to case : 2000 V.AC (50 Hz or 60 Hz), 10 s	
Insulation resistance (CR)	CR ≥ 10000 Ω · F (20 °C, 500 V.DC, 60 s)	

\*1 : The temperature of capacitor surface (case)

\*2 : Use for AC voltage only

## Dimensions



## Rating · Dimensions · Quantity

- Rated voltage : 250 V.AC

Part No.	Cap. $C_R$ ( $\mu$ F)	Dimensions (mm)						Mass (g)	Min. order Q'ty *1 (pcs)
		W	H	L	P1	P2	$\phi$		
EZPQ25126LTA	12	22	36	48.5	45.6	—	1.2	80	800
EZPQ25226LTA	22	30	45	57.5	52.5	—	1.2	107	200
EZPQ25366LTA	36	35	56	57.5	52.5	—	1.2	136	200

\*1 : Minimum order quantity consists of 4 packing units.

### **CAUTION AND WARNING**

1. The electronic components contained in this catalog are designed and produced for use in home electric appliances, office equipment, information equipment, communications equipment, and other general purpose electronic devices.  
Before use of any of these components for equipment that requires a high degree of safety, such as medical instruments, aerospace equipment, disaster-prevention equipment, security equipment, vehicles (automobile, train, vessel), please be sure to contact our sales representative corporation.
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● Factory

Device Solutions Business Division  
Automotive & Industrial Systems Company

**Panasonic**<sup>®</sup>

1006 Kadoma, Kadoma City, Osaka 571-8506,  
JAPAN

The information in this catalog is valid as of January 2018.