

### Metallized Polypropylene Film Capacitor

Type : **ECWFD**

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



#### ■ Features

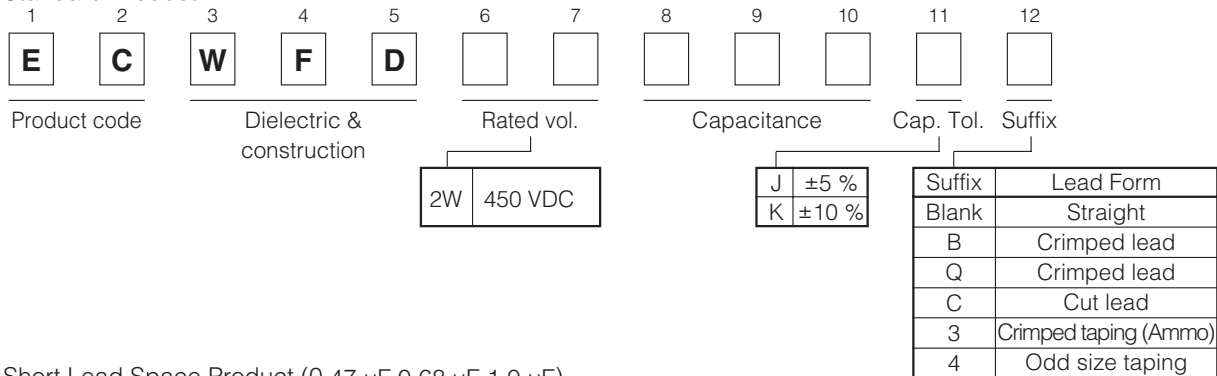
- Small size
- Excellent frequency characteristics
- Low loss
- Flame-retardant epoxy resin coating
- Low Hum Sound Noise
- RoHS directive compliant

#### ■ Recommended Applications

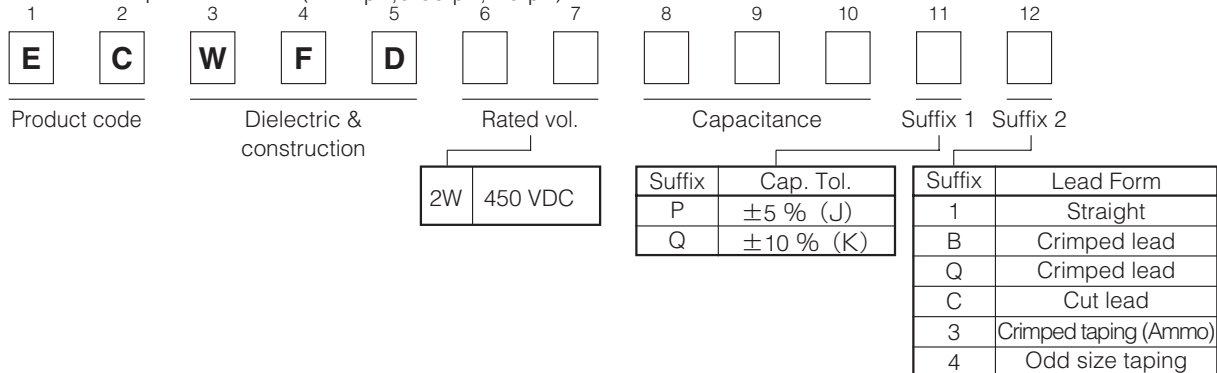
- Activ filter circuits
- High frequency and high current circuits

#### ■ Explanation of Part Numbers

##### ● Standard Product



##### ● Short Lead Space Product (0.47 μF, 0.68 μF, 1.0 μF)



#### ■ Specifications

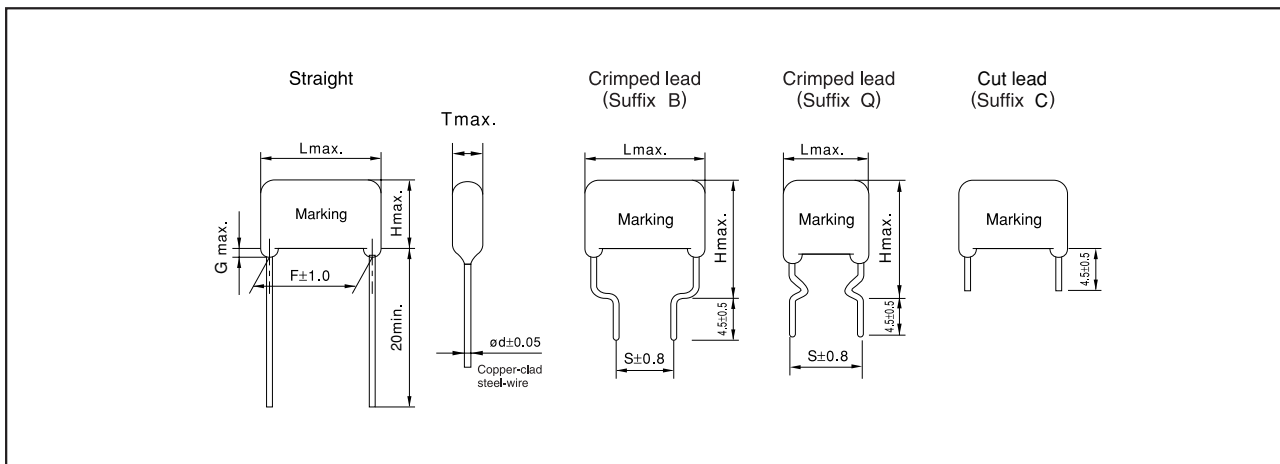
Category temp. range (Including temperature-rise on unit surface)	-40 °C to +110 °C
Rated voltage	450 VDC (Derating of rated voltage by 0.62%/°C at more than 85°C Peak to peak voltage applied on the capacitor should be less than 240Vp-p, and zero to peak voltage should be less than 450V.
Capacitance range	0.1 μF to 4.7 μF
Capacitance tolerance	±5 % (J), ±10 % (K)
Withstand voltage	Between terminals: Rated voltage (VDC) × 150 % 60 s
Dissipation factor (tan δ)	tan δ ≤ 0.1 % (20 °C, 1 kHz)
Insulation resistance (IR)	C ≤ 0.33 μF: IR ≥ 30,000 MΩ C > 0.33 μF: IR ≥ 10,000 MΩ · μF (20 °C, 100 VDC, 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".

Design, Specifications are subject to change without notice. Ask factory for technical specifications before purchase and/or use. Whenever a doubt about safety arises from this product, please inform us immediately for technical consultation without fail.

■Dimensions in mm (not to scale)

(Dimensions : mm)

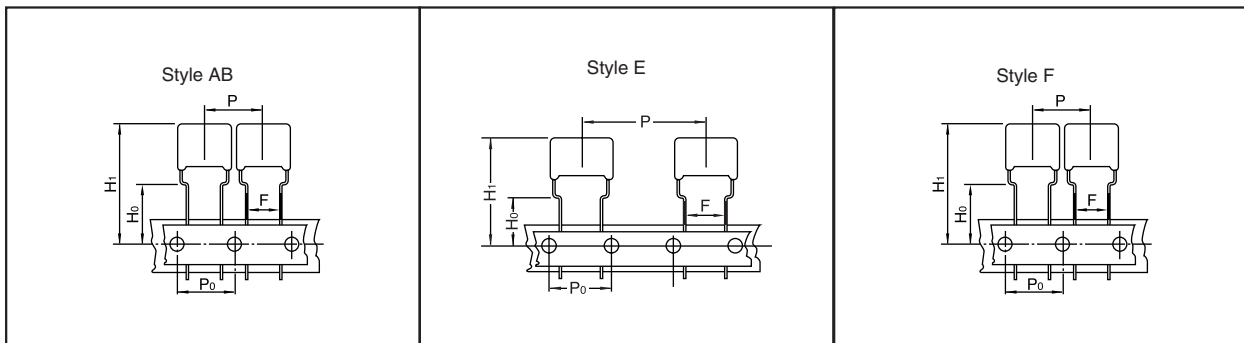


### ■Packaging Specification for Bulk Package

Packing quantity: 100 pcs./bag

### ■Taping Specifications for Automatic Insertion

#### ●Taping style



#### ●Packaging Specifications

Type	Rated voltage.	Cap. range ( $\mu F$ )	Taping style							Packing	suffix	
			AD	AS	AB	B	C	D	E			F
ECWFD	450 VDC	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
		0.47 to 2.2							○		4	

\*Refer to the page of taping specifications.

#### ●Lead Spacing

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

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- Rating, Dimensions & Quantity/Ammo Box
- Type ECWFD Rated voltage : 450 VDC

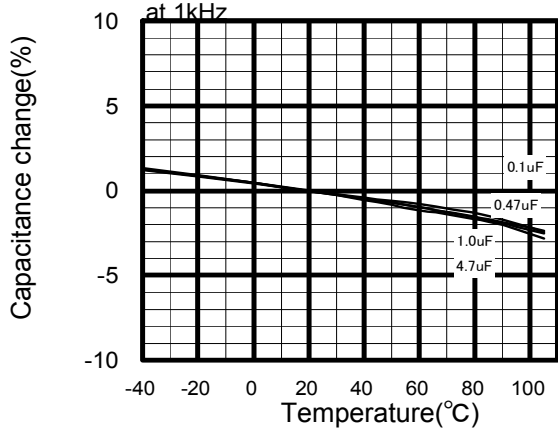
Part No.	Cap. ( $\mu$ F)	Dimensions (mm)										Min. order Q'ty								
		L <sup>max</sup>	T <sup>max</sup>	H <sup>max</sup>			F	S		G <sup>max</sup>	$\phi$ d	Taping		Bulk						
				Straight	Crimped lead (Suffix B)	Crimped lead (Suffix Q)		Crimped lead (Suffix B)	Crimped lead (Suffix Q)			5.0mm	7.5mm	Straight	Crimped lead					
ECWFD2W104□()	0.10	12.6	4.5	—	13.9	13.9	—	7.5	10.0	—	0.6	1500	1400	—						
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
ECWFD2W224□()	0.22	12.6	5.0													14.6	14.6	7.5	10.0	0.6
ECWFD2W274□()	0.27	12.6	5.3													15.0	15.0	7.5	10.0	0.6
ECWFD2W334□()	0.33	12.6	5.6													15.4	15.4	7.5	10.0	0.6
ECWFD2W394□()	0.39	12.6	6.0													15.7	15.7	7.5	10.0	0.6
★ ECWFD2W474 P ()	0.47	12.6	6.5	11.2	16.2	16.2	10.0	7.5	10.0	1.5	0.6	1000	900							
ECWFD2W474 Q ()																				
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	—								
★ ECWFD2W684 P ()	0.68	12.6	7.7	12.4	17.4	17.4	10.0	7.5	10.0	1.5	0.6	800	700		1000					
ECWFD2W684 Q ()																				
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	—								
★ ECWFD2W105 P ()	1.0	12.6	9.2	13.9	18.9	18.9	10.0	7.5	10.0	1.5	0.6	700	600		1000					
ECWFD2W105 Q ()																				
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									
ECWFD2W155□()	1.5	17.5	9.3	12.5	17.5	19.5	15.0	7.5	15.0	1.5	0.8		300							
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									
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		800							
ECWFD2W475□()	4.7	25.3	11.7	16.4	21.4	23.4	22.5	15.0	22.5	1.5	0.8		600	600						

Suffix for lead crimped  
 Capacitance tolerance code

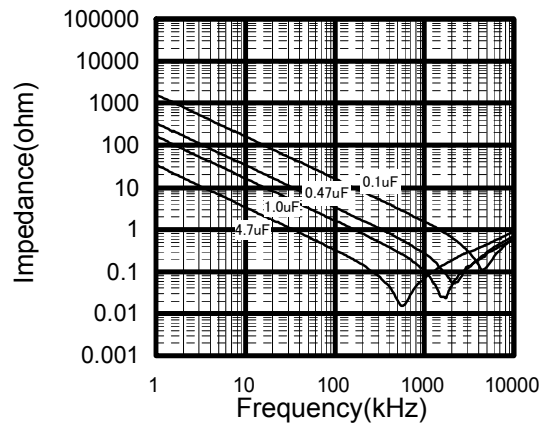
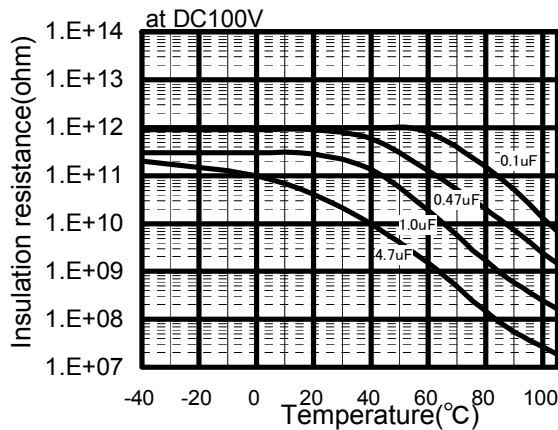
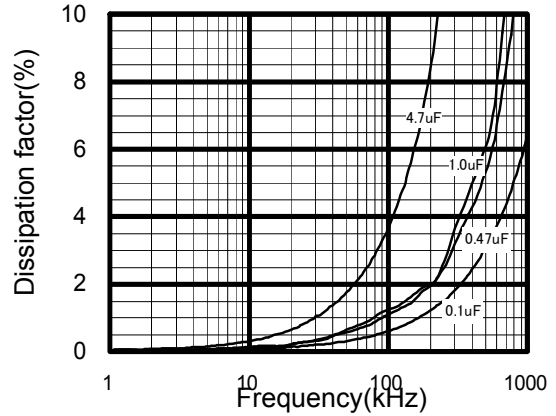
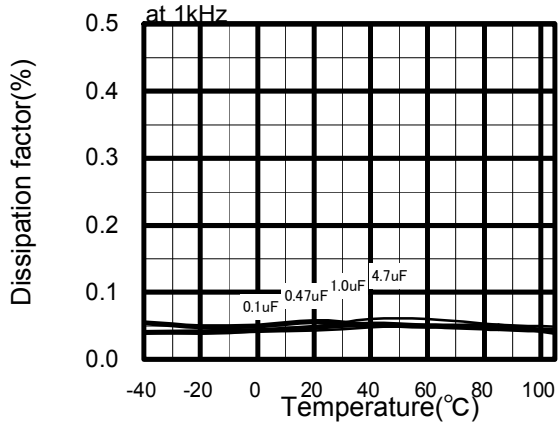
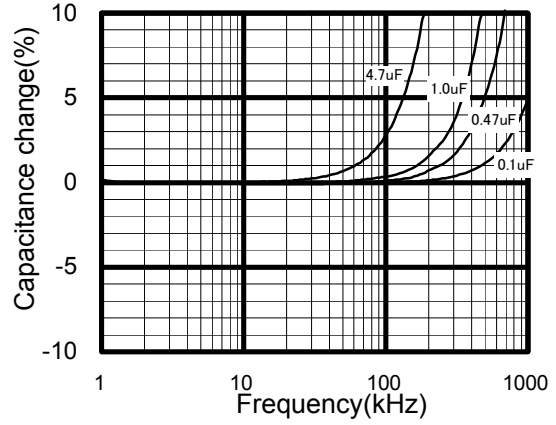
Note) Part Number marked with ★ is Short Lead Space Product.

**ECWFD Type DC450V series (Metallized Polypropylene Film)**  
**Electrical Characteristics <Typical Data >**

**Temperature Characteristics**

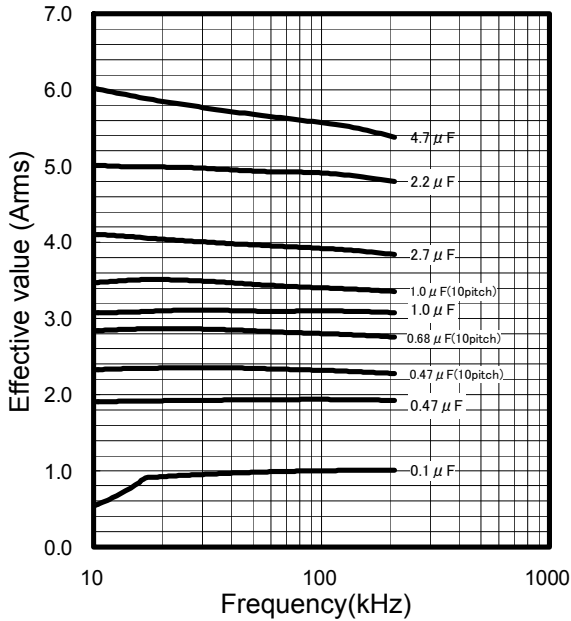


**Frequency Characteristics**

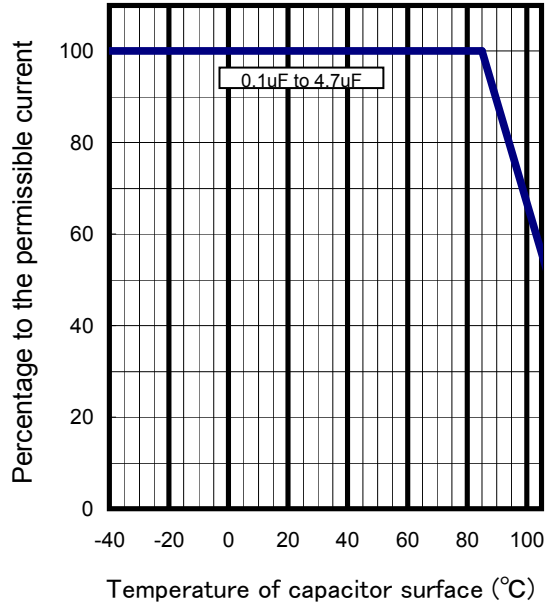


**ECWFD Type DC450V series (Metallized Polypropylene Film)**  
**Applicable Specifications**

**Permissible Current**



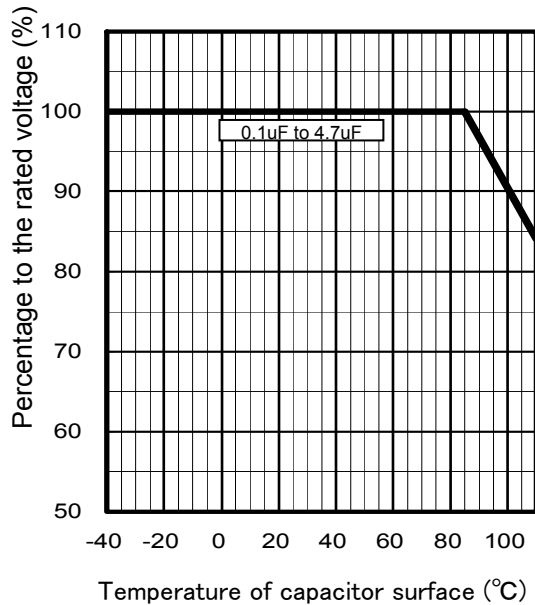
**Permissible Current Derating by Temperature**



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

Rated Voltage	Pitch (mm)	Capacitance (μF)	Code	dV/dt (V/μs)	Current (A <sub>o-p</sub> )
DC 450V	10.0	0.10	104	41.6	4.2
		0.15	154		6.2
		0.22	224		9.2
		0.47	474		19.6
		0.68	684		28.3
		1.00	105		41.6
	15.0	0.47	474	24.3	11.4
		1.0	105		24.3
		1.5	155		36.4
		2.2	225		53.4
	22.5	2.7	275	14.3	38.7
		4.7	475		67.3

**Voltage Derating by Temperature**



\*Please consult Panasonic if your condition exceeds the above  
 \*P When you use this product, peak voltage must not exceed DC rated voltage.  
 \*The current(0-P) value is calculated using nominal capacitance.