

## Metallized Polypropylene Film Capacitor

ECWFD series

**UPGRADE**



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

### Features

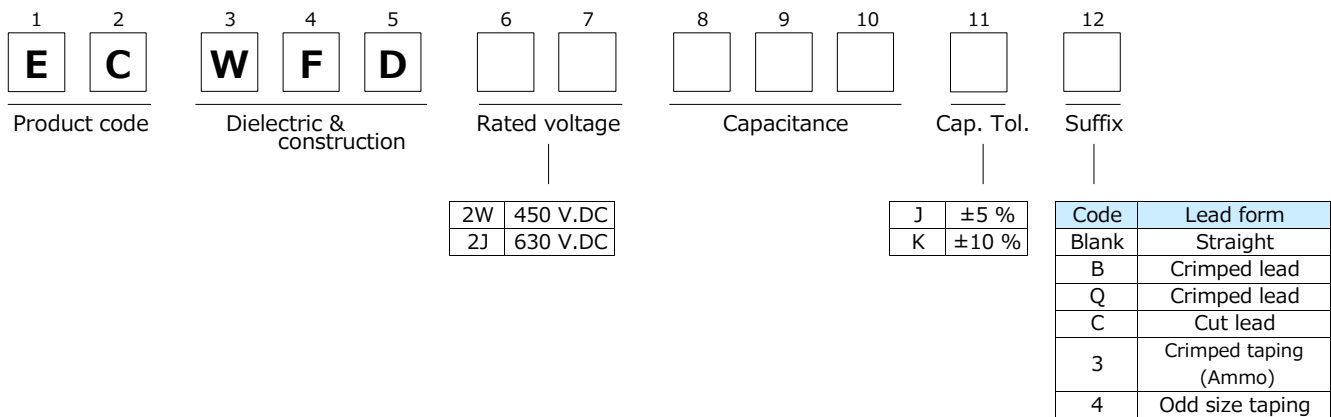
- Small size
- Excellent frequency characteristics
- Low loss
- Flame-retardant epoxy resin coating
- Low hum sound noise
- RoHS compliant

### Recommended applications

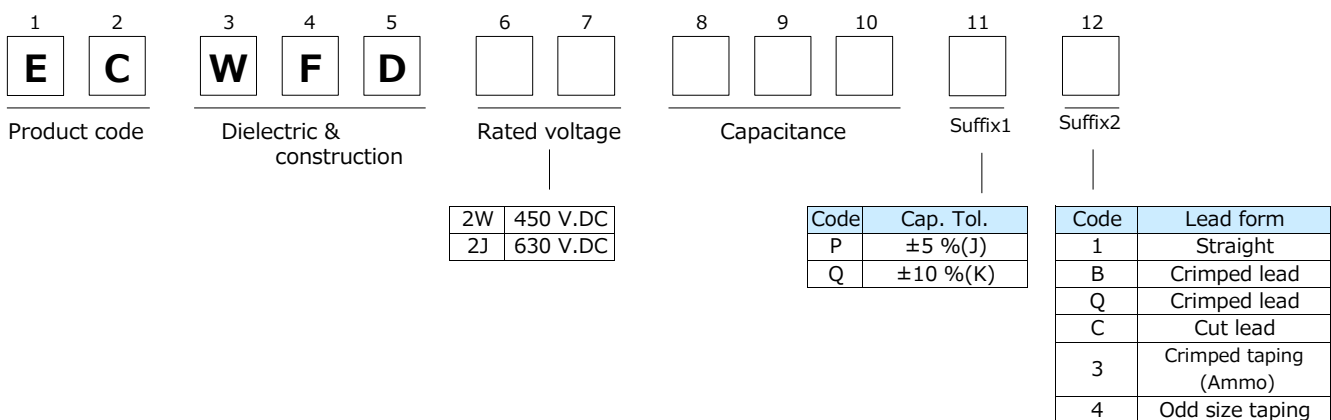
- Active filter circuit
- High frequency circuit

### Explanation of part number

- Standard product



- 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)

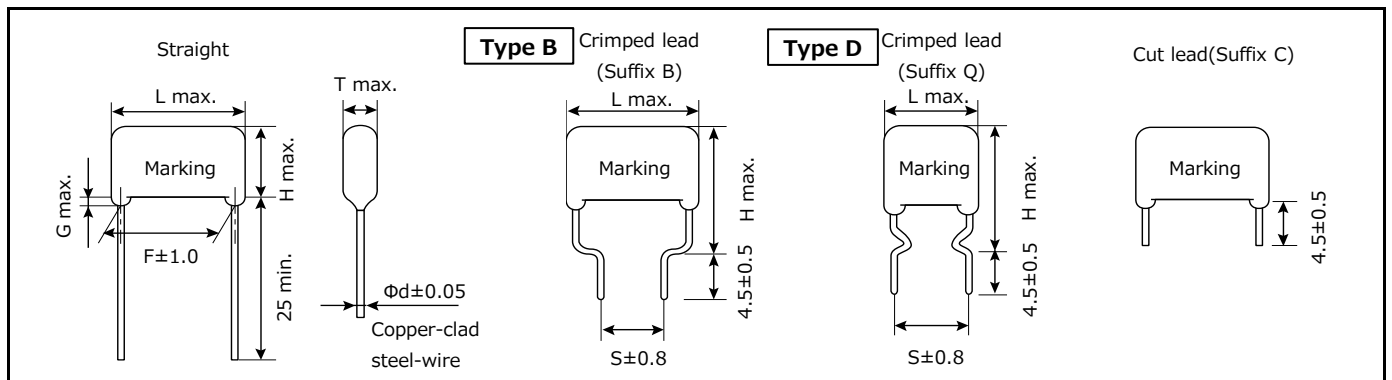


## Specifications

Category temp. range (Including temperature-rise on unit surface)	450 V.DC 630 V.DC	-40 °C to +110 °C -40 °C to +105 °C
Rated voltage	450 V.DC	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. (Derating of rated voltage by 0.62 %/°C at more than 85 °C)
	630 V.DC	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. (Derating of rated voltage by 1.0%/°C at more than 85 °C)
Capacitance range	450 V.DC 630 V.DC	0.1 μF to 4.7 μF 0.01 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 ≥ 30,000 MΩ C > 0.33 μF : IR ≥ 10,000 MΩ·μF (20 °C, 100 V.DC, 60 s)
	630 V.DC	C ≤ 0.33 μF : IR ≥ 9,000 MΩ C > 0.33 μF : IR ≥ 3,000 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

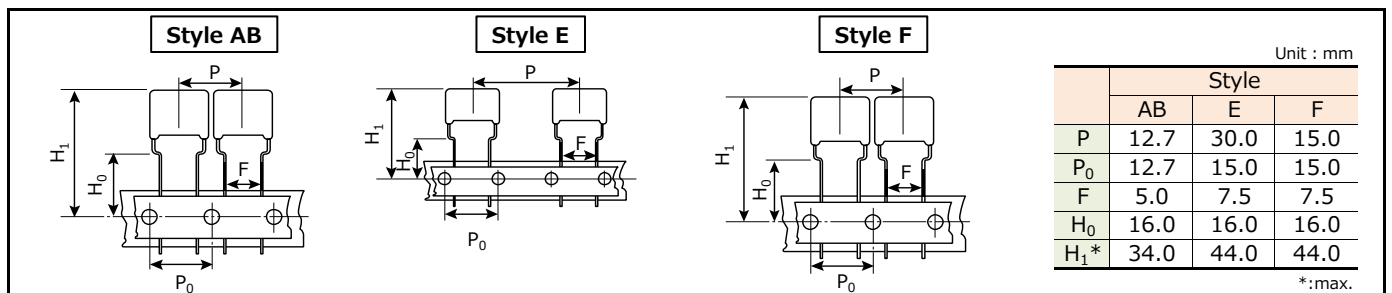


## Packaging specifications for bulk package

- Packing quantity : 100 pcs./bag

## Taping specifications for automatic insertion

- Taping style



\*: 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.

- Packaging specifications

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

See the column "Rating · Dimensions · Quantity" for packaging quantity

- Lead spacing

Style	Lead spacing
AB	5.0
E	7.5
F	7.5

Unit : mm

## 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 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)			Standard 5.0 mm	Odd size 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	-	-		
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						
<b>ECWFD2W474P( )</b>	0.47	12.6	6.5	11.2	16.2	16.2	10.0	7.5	10.0	1.5	0.6	1000	900	-	-		
<b>ECWFD2W474Q( )</b>																	
ECWFD2W474□( )	0.47	17.5	5.8	9.0	14.0	16.0	15.0	7.5	15.0	1.5	0.8	-	500	1000	-		
ECWFD2W564□( )	0.56	17.5	6.2	9.4	14.4	16.4	15.0	7.5	15.0	1.5	0.8	-	500				
<b>ECWFD2W684P( )</b>	0.68	12.6	7.7	12.4	17.4	17.4	10.0	7.5	10.0	1.5	0.6	800	700			-	-
<b>ECWFD2W684Q( )</b>																	
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	-	400				
<b>ECWFD2W105P( )</b>	1.0	12.6	9.2	13.9	18.9	18.9	10.0	7.5	10.0	1.5	0.6	700	600			-	-
<b>ECWFD2W105Q( )</b>																	
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	-	300				
ECWFD2W185□( )	1.8	17.5	10.1	13.3	18.3	20.3	15.0	7.5	15.0	1.5	0.8	-	200				
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	-	800				
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			

\* □ : Capacitance tolerance code

\* ( ) : Suffix for lead crimped

Note) Part number marked with bold is short lead space product.

## Rating · Dimensions · Quantity

● Rated voltage : 630 V.DC, Capacitance tolerance : ±5 %(J), ± 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)			Odd size 7.5 mm	Straight	Crimped lead
<b>NEW</b> ECWFD2J103□( )	0.01	12.6	4.9	-	8.0	8.0	-	7.5	10.0	-	0.6	-	-	1000
<b>NEW</b> ECWFD2J123□( )	0.012	12.6	5.2	-	8.2	8.2	-	7.5	10.0	-	0.6	-	-	
<b>NEW</b> ECWFD2J153□( )	0.015	12.6	5.6	-	8.6	8.6	-	7.5	10.0	-	0.6	-	-	
<b>NEW</b> ECWFD2J183□( )	0.018	12.6	5.9	-	9.0	9.0	-	7.5	10.0	-	0.6	-	-	
<b>NEW</b> ECWFD2J223□( )	0.022	12.6	6.4	-	9.4	9.4	-	7.5	10.0	-	0.6	-	-	
<b>NEW</b> ECWFD2J273□( )	0.027	12.6	6.9	-	9.9	9.9	-	7.5	10.0	-	0.6	-	-	
<b>NEW</b> ECWFD2J333□( )	0.033	12.6	7.5	-	10.5	10.5	-	7.5	10.0	-	0.6	-	-	
<b>NEW</b> ECWFD2J393□( )	0.039	12.6	8.0	-	11.0	11.0	-	7.5	10.0	-	0.6	-	-	
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	-	
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	1000	
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	1000	-	
ECWFD2J684□( )	0.68	17.8	9.3	14.2	19.2	21.2	15.0	7.5	15.0	1.5	0.8	800	900	
ECWFD2J824□( )	0.82	17.8	10.2	15.1	20.1	22.1	15.0	7.5	15.0	1.5	0.8	600	800	
<b>ECWFD2J105P( )</b>	1.0	17.8	11.2	16.1	21.1	23.1	15.0	7.5	15.0	1.5	0.8	200	-	-
<b>ECWFD2J105Q( )</b>														
ECWFD2J105□( )	1.0	25.3	8.4	13.5	18.5	20.5	22.5	15.0	22.5	1.5	0.8	800	900	
ECWFD2J125□( )	1.2	25.3	9.2	14.3	19.3	21.3	22.5	15.0	22.5	1.5	0.8	600	800	
ECWFD2J155□( )	1.5	25.3	10.3	15.5	20.5	22.5	22.5	15.0	22.5	1.5	0.8	500	700	
ECWFD2J185□( )	1.8	25.3	11.2	16.5	21.5	23.5	22.5	15.0	22.5	1.5	0.8	400	600	
ECWFD2J225□( )	2.2	25.3	12.4	17.7	22.7	24.7	22.5	15.0	22.5	1.5	0.8	300	400	
ECWFD2J275□( )	2.7	25.3	13.8	19.2	24.2	26.2	22.5	15.0	22.5	1.5	0.8	500	700	
ECWFD2J335□( )	3.3	25.3	15.3	20.7	25.7	27.7	22.5	15.0	22.5	1.5	0.8	400	600	
ECWFD2J395□( )	3.9	25.3	16.6	22.1	27.1	29.1	22.5	15.0	22.5	1.5	0.8	300	500	
ECWFD2J475□( )	4.7	25.3	18.3	23.9	28.9	30.9	22.5	15.0	22.5	1.5	0.8	300	400	

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

(Note) Part number marked with bold is short lead space product.

## Guidelines and precautions regarding the technical information and use of our products described in this online catalog.

- If you want to use our products described in this online catalog for applications requiring special qualities or reliability, or for applications where the failure or malfunction of the products may directly jeopardize human life or potentially cause personal injury (e.g. aircraft and aerospace equipment, traffic and transportation equipment, combustion equipment, medical equipment, accident prevention, anti-crime equipment, and/or safety equipment), it is necessary to verify whether the specifications of our products fit to such applications. Please ensure that you will ask and check with our inquiry desk as to whether the specifications of our products fit to such applications use before you use our products.
- The quality and performance of our products as described in this online catalog only apply to our products when used in isolation. Therefore, please ensure you evaluate and verify our products under the specific circumstances in which our products are assembled in your own products and in which our products will actually be used.
- If you use our products in equipment that requires a high degree of reliability, regardless of the application, it is recommended that you set up protection circuits and redundancy circuits in order to ensure safety of your equipment.
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- The switchover date for compliance with the RoHS Directive/REACH Regulations varies depending on the part number or series of our products.
- When you use the inventory of our products for which it is unclear whether those products are compliant with the RoHS Directive/REACH Regulation, please select "Sales Inquiry" in the website inquiry form and contact us.

**We do not take any responsibility for the use of our products outside the scope of the specifications, descriptions, guidelines and precautions described in this online catalog.**

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