

Type: **ECWF**

- Low-loss
- Excellent frequency characteristics
- Flame retardant epoxy resin coating

- High frequency and high current circuits such as TV, display, monitor, power supply etc.
- ※ECWF(S): TV, display only

1	2	3	4	5	6	7	8	9	10	11
E	C	W	F							

Suffix

2	250VDC (150Vrms, 250Vo-p)
4	400VDC

H	$\pm 3\%$
J	$\pm 5\%$

S	Smaller case size
B	Standard case size

Blank	Type1	Straight
B	Type2	Crimped lead
P	Type2	Crimped lead

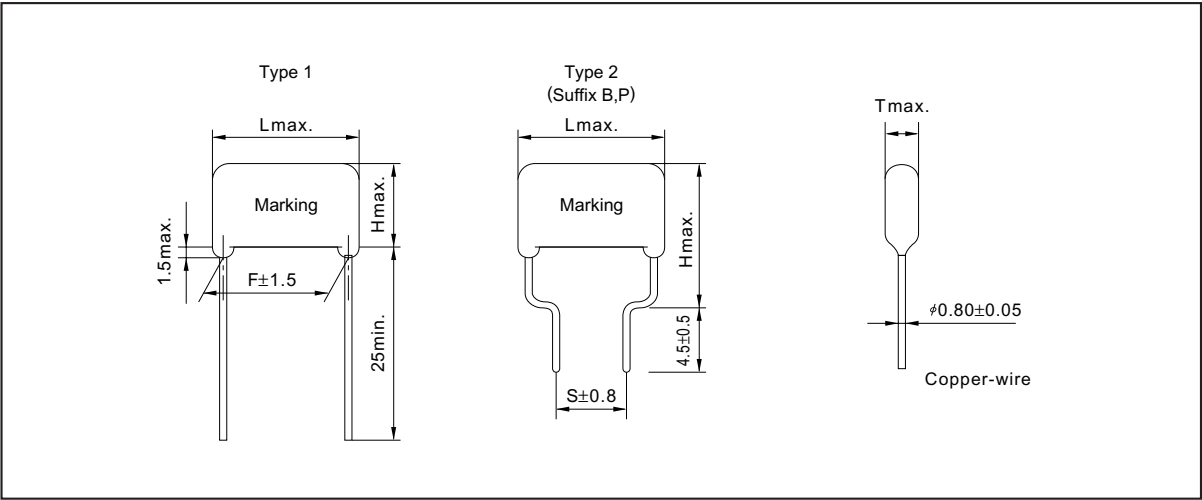
E C W F **R**

Suffix

Blank	Type1	Straight
B	Type2	Crimped lead
P	Type2	Crimped lead

Category temp. range	-25 to +85°C (+105°C.....75% of Rated voltage)	
Rated voltage	250VDC(150Vrms, 250Vo-p), 400VDC	
Capacitance range	0.022 to 4.7μF	
Capacitance tolerance	±3%(H), ±5%(J)	
Dissipation factor	250VDC	0.068 to 0.51μF : 0.05%max. (20°C, 1kHz) 0.56 to 4.7μF : 0.1%max. (20°C, 10kHz) 0.068 to 4.7μF : 0.2%max. (20°C, 10kHz)
	400VDC	0.1% max. (20°C, 1kHz)
Withstand voltage	Between terminals : Rated volt. (VDC)×150% 60s	
Insulation resistance	C≤0.33μF : 9000MΩ min. (20°C, 100VDC, 60s) C>0.33μF : 3000MΩ . μFmin. (20°C, 100VDC, 60s)	

■Dimensions in mm (not to scale)

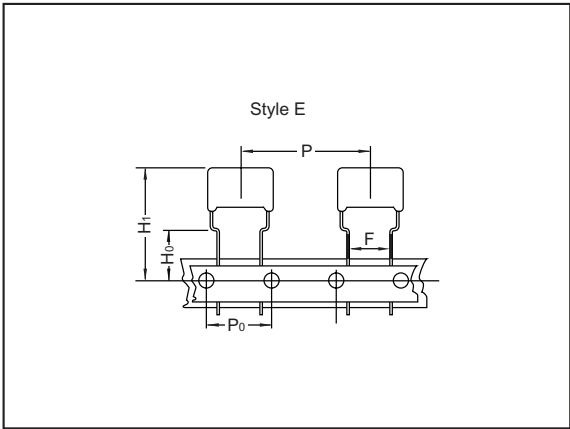


■Packaging Specifications for Bulk Package

Packing quantity: 100pcs./bag

■Taping Specifications for Automatic Insertion

●Taping style



※See page 6 for Taping dimensions.

●Packaging Specification

Type	Rated volt.	Cap. range (μ F)	Taping style						Packing
			AD	AS	B	C	D	E	
ECWF (S)	250VDC	0.068 to 1.5						○	Ammo
ECWF (B)			0.022 to 1.2						○
	400VDC	0.022 to 0.68						○	Ammo

※See the column "Rating, Dimensions & Quantity Box" for packing quantity.

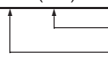
●Lead Spacing

Style	Lead Spacing
E	7.5mm

■Rating, Dimensions & Quantity/Ammo Box

●Type ECWF(S) Rated voltage: 250VDC(150Vrms, 250V o-p) Capacitance tolerance: ±3%(H), ±5%(J)

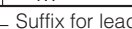
Part No.	Cap. (μF)	Dimensions (mm)							Quantity
		L _{max.}	T _{max.}	H _{max.}		F	S		ød
				Type - 1	Type - 2		Type - 1	Type - 2	
ECWF2683□S()	0.068	15.5	6.0	12.5	17.5	12.5	7.5	0.80	500
ECWF2753□S()	0.075	15.5	6.0	13.0	18.0	12.5	7.5	0.80	
ECWF2823□S()	0.082	15.5	6.0	13.0	18.0	12.5	7.5	0.80	
ECWF2913□S()	0.091	15.5	6.0	12.5	17.5	12.5	7.5	0.80	600
ECWF2104□S()	0.1	15.5	6.0	12.5	17.5	12.5	7.5	0.80	500
ECWF2114□S()	0.11	15.5	6.5	13.0	18.0	12.5	7.5	0.80	
ECWF2124□S()	0.12	15.5	7.0	13.0	18.0	12.5	7.5	0.80	
ECWF2134□S()	0.13	15.5	7.5	13.5	18.5	12.5	7.5	0.80	
ECWF2154□S()	0.15	15.5	7.0	12.5	17.5	12.5	7.5	0.80	
ECWF2164□S()	0.16	15.5	7.5	12.5	17.5	12.5	7.5	0.80	
ECWF2184□S()	0.18	15.5	7.0	13.0	18.0	12.5	7.5	0.80	
ECWF2204□S()	0.2	15.5	7.0	13.5	18.5	12.5	7.5	0.80	
ECWF2224□S()	0.22	15.5	7.5	13.5	18.5	12.5	7.5	0.80	
ECWF2244□S()	0.24	15.5	7.5	13.5	18.5	12.5	7.5	0.80	
ECWF2274□S()	0.27	18.0	8.0	13.0	18.0	15.0	10.0	0.80	
ECWF2304□S()	0.3	18.0	8.5	13.5	18.5	15.0	10.0	0.80	
ECWF2334□S()	0.33	18.0	9.5	13.5	18.5	15.0	10.0	0.80	
ECWF2364□S()	0.36	18.0	8.0	14.0	19.0	15.0	10.0	0.80	
ECWF2394□S()	0.39	18.0	9.0	14.0	19.0	15.0	10.0	0.80	400
ECWF2434□S()	0.43	18.0	10.0	14.5	19.5	15.0	10.0	0.80	
ECWF2474□S()	0.47	18.0	10.5	15.0	20.0	15.0	10.0	0.80	
ECWF2514□S()	0.51	18.0	11.5	15.0	20.0	15.0	10.0	0.80	
ECWF2564□S()	0.56	18.0	12.5	15.5	20.5	15.0	10.0	0.80	
ECWF2624□S()	0.62	18.0	12.0	16.0	21.0	15.0	10.0	0.80	300
ECWF2684□S()	0.68	18.0	12.5	16.0	21.0	15.0	10.0	0.80	
ECWF2754□S()	0.75	20.0	14.5	16.0	21.0	17.0	12.5	0.80	
ECWF2824□S()	0.82	20.0	15.0	16.0	21.0	17.0	12.5	0.80	
ECWF2914□S()	0.91	20.0	16.0	16.5	21.5	17.0	12.5	0.80	
ECWF2105□S()	1.0	20.0	16.0	17.0	22.0	17.0	12.5	0.80	
ECWF2115□S()	1.1	20.0	16.0	17.5	22.5	17.0	12.5	0.80	
ECWF2125□S()	1.2	20.0	16.0	18.0	23.0	17.0	12.5	0.80	
ECWF2135□S()	1.3	23.0	16.0	17.0	22.0	20.0	12.5	0.80	
ECWF2155□S()	1.5	23.0	16.0	18.0	23.0	20.0	12.5	0.80	
ECWF2165□S()	1.6	23.0	16.0	18.0	23.0	20.0		0.80	—
ECWF2185□S()	1.8	23.0	16.0	19.5	24.5	20.0		0.80	
ECWF2205□S()	2.0	23.0	16.0	20.0	25.0	20.0		0.80	
ECWF2225□S()	2.2	23.0	16.0	20.5	25.5	20.0		0.80	
ECWF2245□S()	2.4	23.0	16.0	21.0	26.0	20.0		0.80	
ECWF2275□S()	2.7	28.0	16.0	20.0	25.0	25.0		0.80	
ECWF2305□S()	3.0	28.0	16.0	20.5	25.5	25.0		0.80	
ECWF2335□S()	3.3	28.0	16.0	21.5	26.5	25.0		0.80	


 Suffix for lead crimped or taped type
 Cap. tol. code

■ Rating & Dimensions

● Rated voltage : 250VDC(150Vrms, 250V0-p) Cap. tolerance : ±3%(H), ±5%(J)

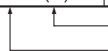
Part No.	Cap. (μF)	Dimensions (mm)							Quantity
		L _{max}	T _{max}	H _{max}		F	S		Ammo 7.5mm
				Type-1	Type-2		Type-1	Type-2	
ECWF2223□B()	0.022	15.5	5.5	12.5	17.5	12.5	7.5	0.80	500
ECWF2243□B()	0.024	15.5	5.5	12.5	17.5	12.5	7.5	0.80	
ECWF2273□B()	0.027	15.5	6.0	12.5	17.5	12.5	7.5	0.80	
ECWF2303□B()	0.03	15.5	6.0	13.0	17.5	12.5	7.5	0.80	
ECWF2333□B()	0.033	15.5	5.5	12.5	17.5	12.5	7.5	0.80	
ECWF2363□B()	0.036	15.5	6.0	12.5	17.5	12.5	7.5	0.80	
ECWF2393□B()	0.039	15.5	6.0	12.5	17.5	12.5	7.5	0.80	
ECWF2433□B()	0.043	15.5	6.0	13.0	17.5	12.5	7.5	0.80	
ECWF2473□B()	0.047	15.5	6.5	13.0	17.5	12.5	7.5	0.80	
ECWF2513□B()	0.051	15.5	6.5	13.5	17.5	12.5	7.5	0.80	
ECWF2563□B()	0.056	15.5	6.5	13.5	17.5	12.5	7.5	0.80	
ECWF2623□B()	0.062	15.5	7.0	14.0	17.5	12.5	7.5	0.80	
ECWF2683□B()	0.068	18.0	6.0	13.0	18.0	15.0	10.0	0.80	
ECWF2753□B()	0.075	18.0	6.5	13.0	18.0	15.0	10.0	0.80	
ECWF2823□B()	0.082	18.0	6.5	13.5	18.5	15.0	10.0	0.80	
ECWF2913□B()	0.091	18.0	7.0	13.5	18.5	15.0	10.0	0.80	
ECWF2104□B()	0.1	18.0	7.0	14.0	19.0	15.0	10.0	0.80	400
ECWF2114□B()	0.11	18.0	7.5	14.0	19.0	15.0	10.0	0.80	
ECWF2124□B()	0.12	18.0	7.5	14.5	19.5	15.0	10.0	0.80	
ECWF2134□B()	0.13	18.0	8.0	14.5	19.5	15.0	10.0	0.80	
ECWF2154□B()	0.15	18.0	8.5	15.0	20.0	15.0	10.0	0.80	
ECWF2164□B()	0.16	18.0	6.0	13.0	18.0	15.0	10.0	0.80	500
ECWF2184□B()	0.18	18.0	6.5	13.5	18.5	15.0	10.0	0.80	
ECWF2204□B()	0.2	18.0	7.0	13.5	18.5	15.0	10.0	0.80	
ECWF2224□B()	0.22	18.0	7.0	14.0	19.0	15.0	10.0	0.80	
ECWF2244□B()	0.24	18.0	7.5	14.0	19.0	15.0	10.0	0.80	
ECWF2274□B()	0.27	18.0	8.0	14.5	19.5	15.0	10.0	0.80	400
ECWF2304□B()	0.3	18.0	8.0	15.0	20.0	15.0	10.0	0.80	
ECWF2334□B()	0.33	18.0	8.5	15.0	20.0	15.0	10.0	0.80	
ECWF2364□B()	0.36	18.0	8.5	15.0	20.0	15.0	10.0	0.80	
ECWF2394□B()	0.39	18.0	9.0	16.0	21.0	15.0	10.0	0.80	
ECWF2434□B()	0.43	18.0	9.5	16.0	21.0	15.0	10.0	0.80	300
ECWF2474□B()	0.47	23.0	8.0	15.0	20.0	20.0	12.5	0.80	
ECWF2514□B()	0.51	23.0	8.5	15.0	20.0	20.0	12.5	0.80	
ECWF2564□B()	0.56	23.0	8.5	15.5	20.5	20.0	12.5	0.80	400
ECWF2624□B()	0.62	23.0	9.0	16.0	21.0	20.0	12.5	0.80	
ECWF2684□B()	0.68	23.0	9.5	16.5	21.5	20.0	12.5	0.80	
ECWF2754□B()	0.75	23.0	10.0	16.5	21.5	20.0	12.5	0.80	
ECWF2824□B()	0.82	23.0	10.5	17.0	22.0	20.0	12.5	0.80	
ECWF2914□B()	0.91	23.0	11.0	17.5	22.5	20.0	12.5	0.80	300
ECWF2105□B()	1.0	23.0	11.5	18.0	23.0	20.0	12.5	0.80	
ECWF2115□B()	1.1	23.0	12.0	19.0	24.0	20.0	12.5	0.80	
ECWF2125□B()	1.2	23.0	12.5	19.5	24.5	20.0	12.5	0.80	
ECWF2135□B()	1.3	23.0	13.0	20.0	25.0	20.0	12.5	0.80	
ECWF2155□B()	1.5	23.0	14.0	21.0	26.0	20.0	12.5	0.80	-
ECWF2165□B()	1.6	28.0	11.5	20.5	25.5	25.0	17.5	0.80	
ECWF2185□B()	1.8	28.0	12.5	21.0	26.0	25.0	17.5	0.80	
ECWF2205□B()	2.0	28.0	13.0	22.0	27.0	25.0	17.5	0.80	
ECWF2225□B()	2.2	28.0	14.0	22.5	27.5	25.0	17.5	0.80	
ECWF2245□B()	2.4	28.0	14.5	23.0	28.0	25.0	17.5	0.80	
ECWF2275□B()	2.7	28.0	15.5	24.0	29.0	25.0	17.5	0.80	
ECWF2305□B()	3.0	28.0	16.5	25.5	30.5	25.0	17.5	0.80	
ECWF2335□B()	3.3	28.0	17.0	26.0	31.0	25.0	17.5	0.80	
ECWF2365□B()	3.6	33.0	16.0	25.0	30.0	30.0	22.5	0.80	
ECWF2395□B()	3.9	33.0	16.5	25.5	30.5	30.0	22.5	0.80	
ECWF2435□B()	4.3	33.0	17.5	26.5	31.5	30.0	22.5	0.80	
ECWF2475□B()	4.7	33.0	18.0	27.0	32.0	30.0	22.5	0.80	

 Suffix for lead crimped or taped type
 Cap. tol. code

■ Rating, Dimensions & Quantity/Ammo Box

● Type ECWF(B), Rated voltage: 400VDC, Capacitance tolerance: $\pm 3\%$ (H), $\pm 5\%$ (J)

Part No.	Cap. (μ F)	Dimensions (mm)							Quantity
		L _{max}	T _{max}	H _{max}		F	S	ϕ d	Ammo 7.5mm
				Type-1	Type-2				
ECWF4223□B()	0.022	15.5	5.5	12.5	17.5	12.5	7.5	0.80	500
ECWF4243□B()	0.024	15.5	5.5	12.5	17.5	12.5	7.5	0.80	
ECWF4273□B()	0.027	15.5	6.0	12.5	17.5	12.5	7.5	0.80	
ECWF4303□B()	0.030	15.5	6.0	13.0	18.0	12.5	7.5	0.80	
ECWF4333□B()	0.033	15.5	5.5	12.5	17.5	12.5	7.5	0.80	
ECWF4363□B()	0.036	15.5	6.0	12.5	17.5	12.5	7.5	0.80	
ECWF4393□B()	0.039	15.5	6.0	12.5	17.5	12.5	7.5	0.80	
ECWF4433□B()	0.043	15.5	6.0	13.0	18.0	12.5	7.5	0.80	
ECWF4473□B()	0.047	15.5	6.5	13.0	18.0	12.5	7.5	0.80	
ECWF4513□B()	0.051	15.5	6.5	13.5	18.5	12.5	7.5	0.80	
ECWF4563□B()	0.056	15.5	6.5	13.5	18.5	12.5	7.5	0.80	
ECWF4623□B()	0.062	15.5	7.0	14.0	19.0	12.5	7.5	0.80	
ECWF4683□B()	0.068	18.0	6.5	13.0	18.0	15.0	10.0	0.80	
ECWF4753□B()	0.075	18.0	6.5	13.5	18.5	15.0	10.0	0.80	
ECWF4823□B()	0.082	18.0	7.0	13.5	18.5	15.0	10.0	0.80	
ECWF4913□B()	0.091	18.0	7.0	14.0	19.0	15.0	10.0	0.80	400
ECWF4104□B()	0.1	18.0	7.5	14.0	19.0	15.0	10.0	0.80	
ECWF4114□B()	0.11	18.0	7.5	14.5	19.5	15.0	10.0	0.80	
ECWF4124□B()	0.12	18.0	8.0	15.0	20.0	15.0	10.0	0.80	
ECWF4134□B()	0.13	18.0	8.0	15.0	20.0	15.0	10.0	0.80	
ECWF4154□B()	0.15	18.0	8.5	15.5	20.5	15.0	10.0	0.80	300
ECWF4164□B()	0.16	18.0	9.0	16.0	21.0	15.0	10.0	0.80	
ECWF4184□B()	0.18	18.0	9.5	16.5	21.5	15.0	10.0	0.80	
ECWF4204□B()	0.2	20.0	9.0	16.0	21.0	17.0	10.0	0.80	
ECWF4224□B()	0.22	20.0	9.5	16.5	21.5	17.0	10.0	0.80	
ECWF4244□B()*	0.24	20.0	10.0	16.5	21.5	17.0	10.0	0.80	
ECWF4274□B()*	0.27	20.0	10.5	17.0	22.0	17.0	10.0	0.80	
ECWF4304□B()*	0.3	20.0	11.0	17.5	22.5	17.0	10.0	0.80	
ECWF4334□B()*	0.33	20.0	11.5	18.0	23.0	17.0	10.0	0.80	
ECWF4364□B()	0.36	23.0	12.5	20.0	25.0	20.0	12.5	0.80	
ECWF4394□B()	0.39	23.0	13.5	20.5	25.5	20.0	12.5	0.80	200
ECWF4434□B()	0.43	23.0	14.0	21.0	26.0	20.0	12.5	0.80	
ECWF4474□B()	0.47	23.0	14.5	21.5	26.5	20.0	12.5	0.80	
ECWF4514□B()	0.51	23.0	12.5	19.5	24.5	20.0	12.5	0.80	300
ECWF4564□B()	0.56	23.0	13.0	20.0	25.0	20.0	12.5	0.80	200
ECWF4624□B()	0.62	23.0	14.0	21.0	26.0	20.0	12.5	0.80	
ECWF4684□B()	0.68	23.0	14.5	21.5	26.5	20.0	12.5	0.80	-
ECWF4754□B()	0.75	28.0	13.0	20.0	25.0	25.0	17.5	0.80	
ECWF4824□B()	0.82	28.0	14.0	20.5	25.5	25.0	17.5	0.80	
ECWF4914□B()	0.91	28.0	14.5	21.5	26.5	25.0	17.5	0.80	
ECWF4105□B()	1.0	28.0	15.0	22.0	27.0	25.0	17.5	0.80	
ECWF4115□B()	1.1	28.0	16.0	22.5	27.5	25.0	17.5	0.80	
ECWF4125□B()	1.2	28.0	16.5	23.5	28.5	25.0	17.5	0.80	
ECWF4135□B()	1.3	28.0	17.0	24.0	29.0	25.0	17.5	0.80	
ECWF4155□B()	1.5	28.0	18.5	25.5	30.5	25.0	17.5	0.80	
ECWF4165□B()	1.6	28.0	19.5	26.5	31.5	25.0	17.5	0.80	

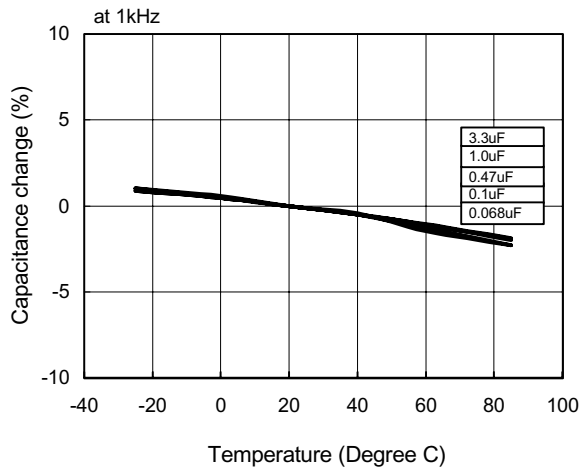

 Suffix for lead crimped or taped type
 Cap. tol. code

* Lead crimped type last Suffix is "P"

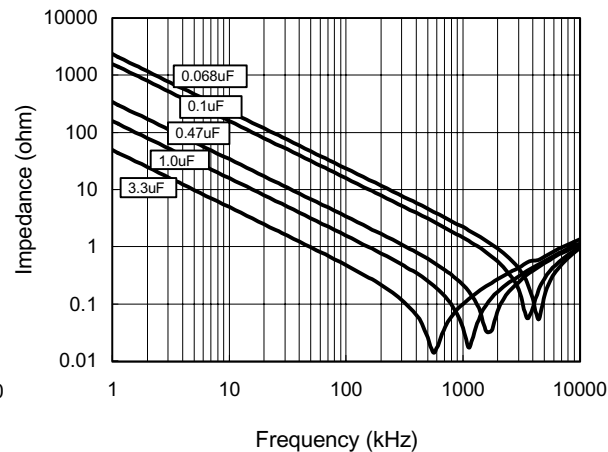
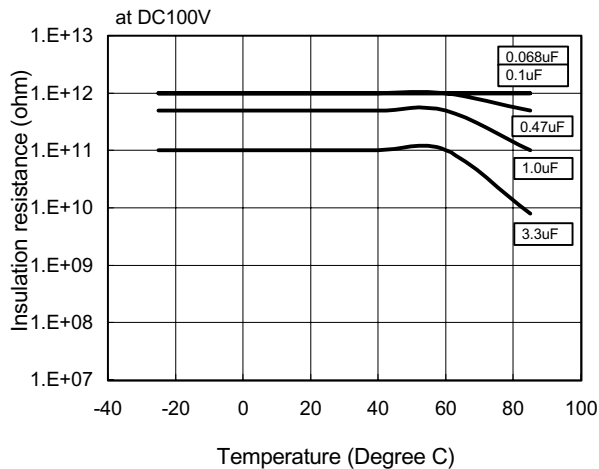
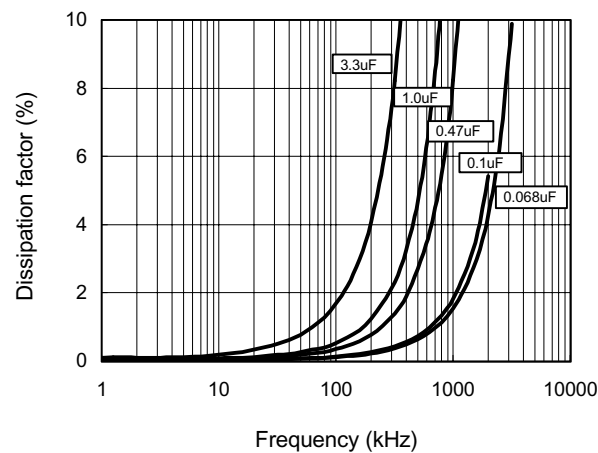
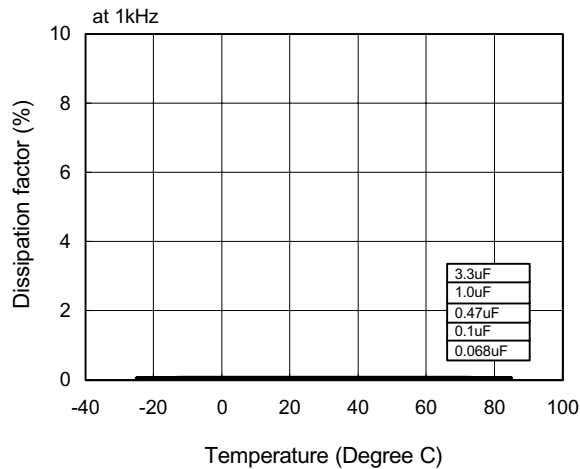
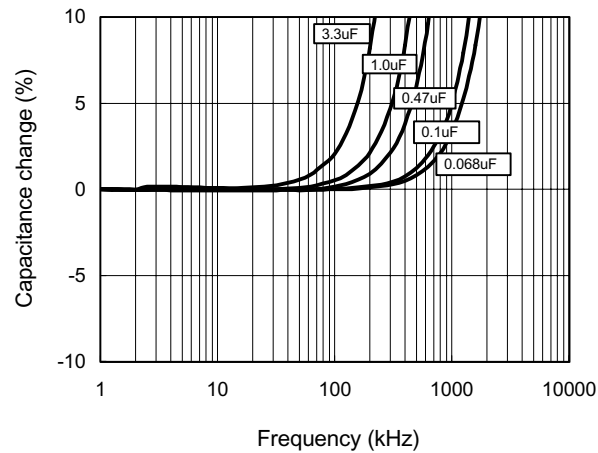
ECWF(S) Type 250VDC Series (Metallized Polypropylene Film)

Electrical Characteristics (Typical Data)

Temperature Characteristics



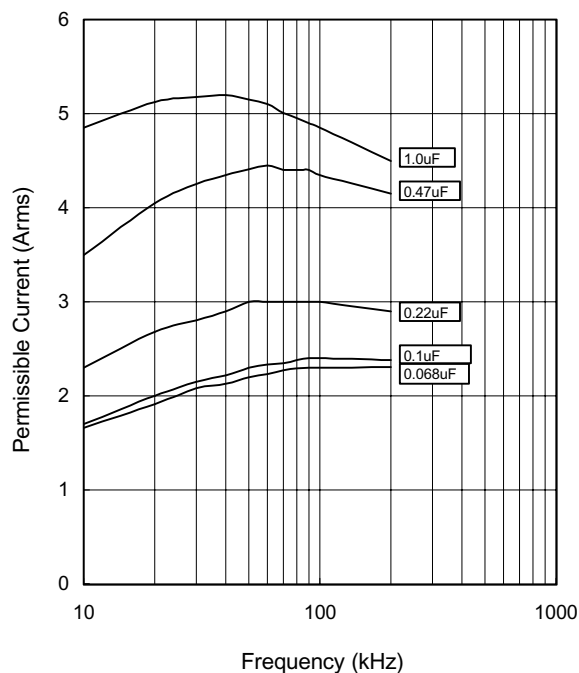
Frequency Characteristics



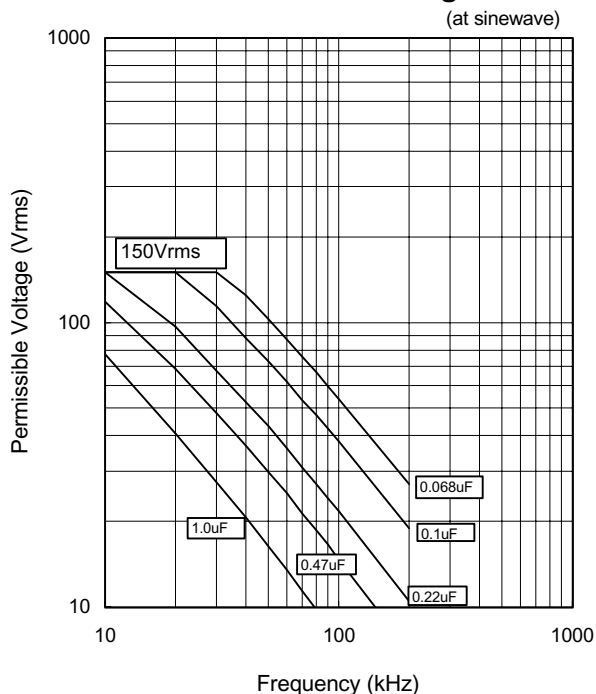
ECWF(S) Type 250VDC Series (Metallized Polypropylene Film)

Applicable Specifications

Permissible Current



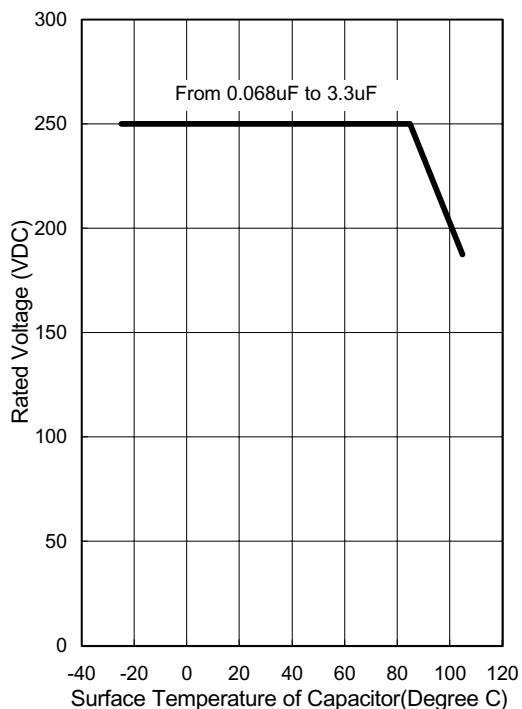
Permissible Voltage



Pulse Handling Capability (dV/dt)
(Max 10000 cycles)

Rating Voltage	Capacitance Value(uF)	Code	dV/dt(V/us)	Current(o-p) (A)
250VDC	0.068	683	224	15.2
	0.100	104	150	15.0
	0.150	154	71	10.7
	0.220	224		15.6
	0.330	334	60	19.8
	0.470	474		28.2
	0.680	684		40.8
	1.000	105	46	46.0
	1.500	155		69.0

Voltage Derating by Temperature

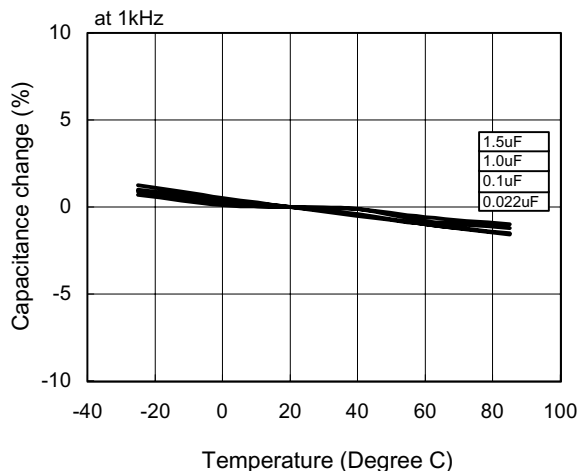


* Please consult Panasonic if your condition exceeds the above spec.

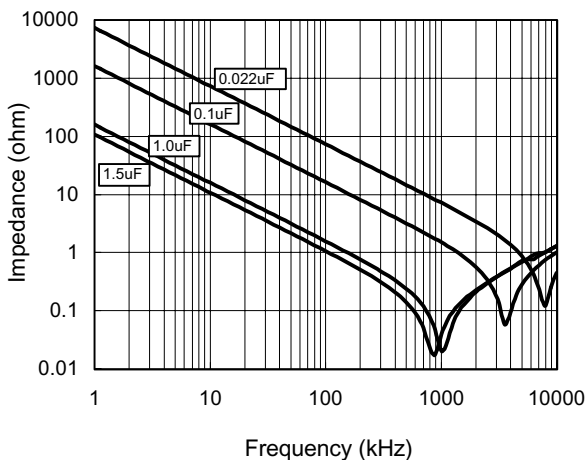
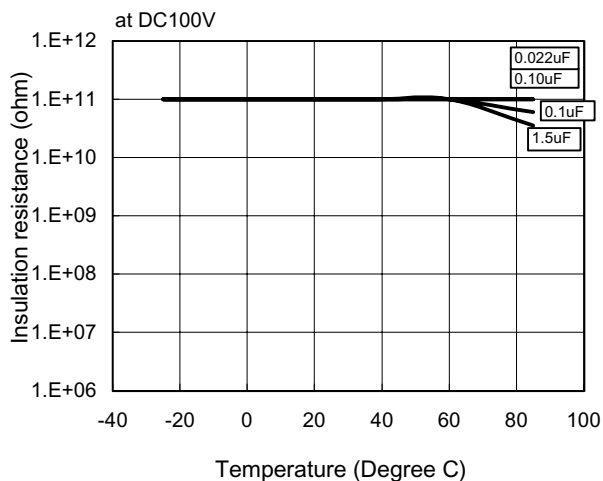
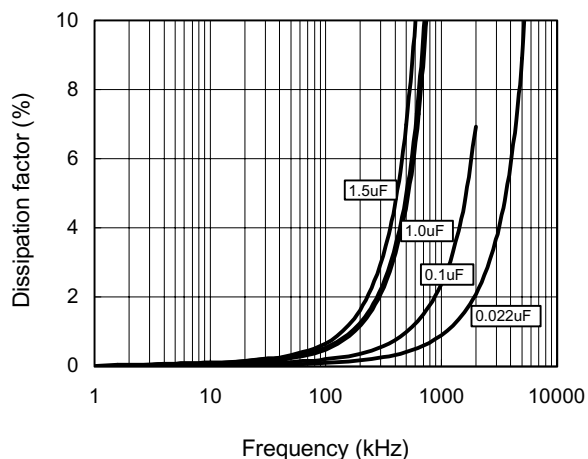
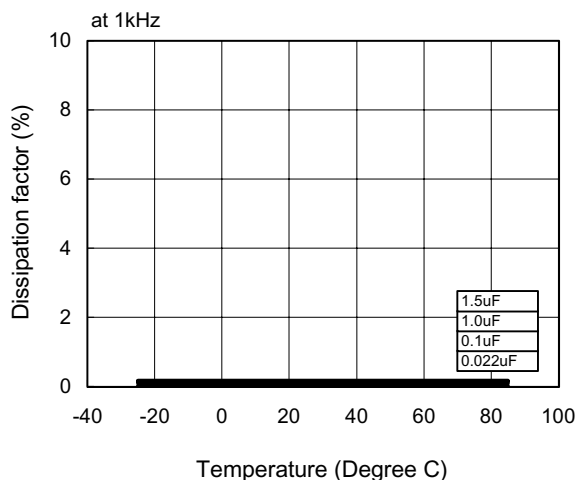
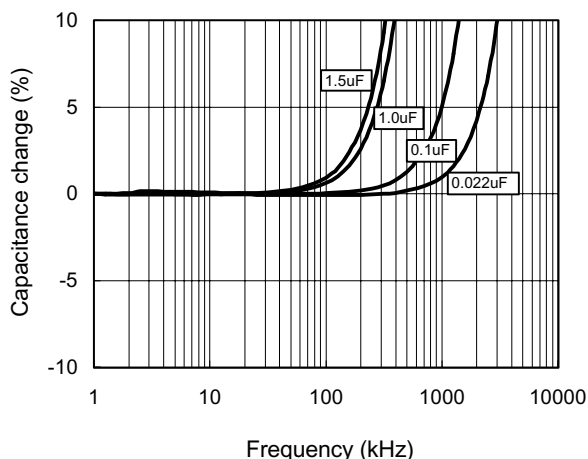
ECWF(B) Type 400VDC Series (Metallized Polypropylene Film)

Electrical Characteristics (Typical Data)

Temperature Characteristics



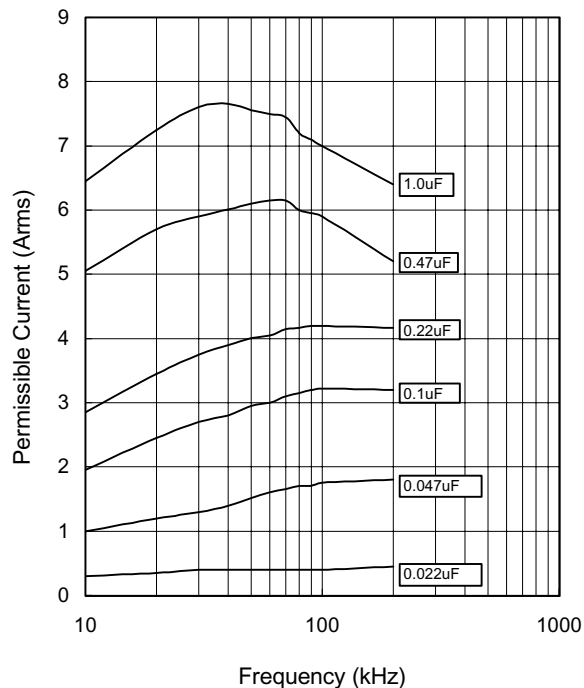
Frequency Characteristics



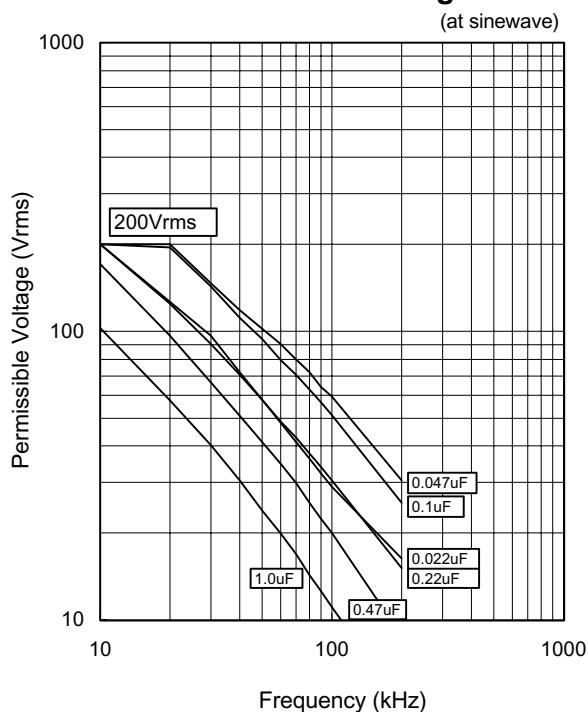
ECWF(B) Type 400VDC Series (Metallized Polypropylene Film)

Applicable Specifications

Permissible Current



Permissible Voltage

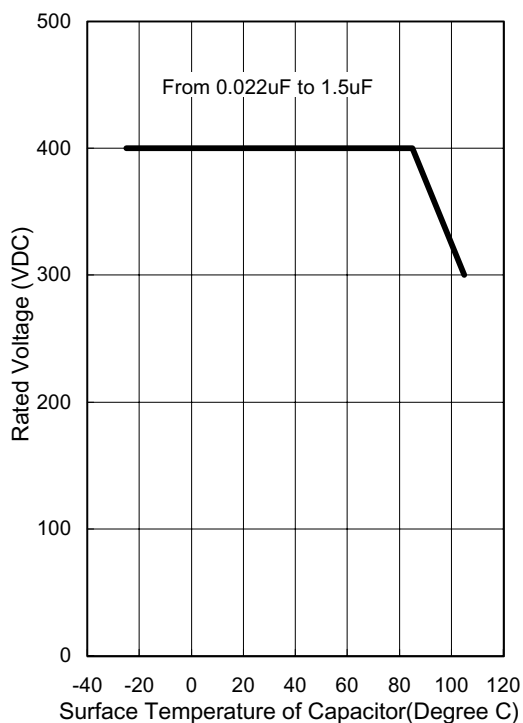


Pulse Handling Capability (dV/dt)

(Max 10000 cycles)

Rating Voltage	Capacitance Value(uF)	Code	dV/dt(V/us)	Current(o-p) (A)
400VDC	0.022	223	400	8.8
	0.033	333	335	11.1
	0.047	473		15.7
	0.068	683		16.3
	0.100	104	240	24.0
	0.150	154		36.0
	0.220	224		44.0
	0.330	334	200	66.0
	0.470	474		84.6
	0.680	684		102.0
	1.000	105	120	120.0
	1.500	155		180.0

Voltage Derating by Temperature



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