

# EC series

- Low ESR at high frequency range.
- Rated voltage :2.5~16V.
- Endurance:2,000hours at 105°C
- Applications:LCD Monitor,LCD-TV,D/A Inverter,SPS,D/D Converter.etc.
- ROHS compliant
- Halogen Free compliant

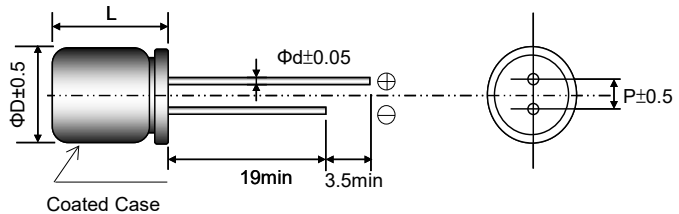
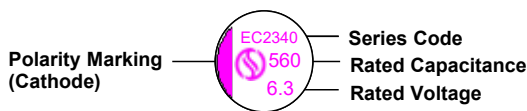


## SPECIFICATIONS

Items	Conditions	Characteristics	
Category Temperature Range	—	-55 to +105°C	
Rated Voltage Range	—	2.5 ~ 16V	
Capacitance Tolerance	at 20°C,120HZ	±20%(M)	
Surge Voltage	at 105°C	Rated voltage ×1.15V	
Leakage Current	at 20°Cafter 2 minutes	$I \leq 0.2CV$ or $300(\mu A)$ Whichever is greater measured,after 2 minutes application of rated working voltage at +20°C. Please see the attached characteristics list	
Dissipation Factor ( tan δ)	at 20°C,120Hz	Please see the attached characteristics list	
Low Temperature Characteristics (Max. Impedance Ratio)	at -55°C,100kHz	$Z(-55^\circ C)/Z(+20^\circ C) \leq 1.25$	
	at -25°C,100kHz	$Z(-25^\circ C)/Z(+20^\circ C) \leq 1.15$	
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20°Cafter the rated voltage is applied for 2,000 hours at 105°C.	Appearance	No significant damage.
		Capacitance change	$\leq \pm 20\%$ of the initial value.
		DF ( tan δ)	$\leq 150\%$ of the initial specified value.
		ESR	$\leq 150\%$ of the initial specified value.
		Leakage current	$\leq$ The initial specified value.
Damp Heag (Steady State)	The following specifications shall be satisfied when the capacitors are restored to 20°C after subjecting them to subjecting them to store at 60°C, 90 to 95% RH for 1,000 hours ,without DC applied.	Appearance	No significant damage.
		Capacitance change	$\leq \pm 20\%$ of the initial value.
		DF ( tan δ)	$\leq 150\%$ of the initial specified value.
		ESR	$\leq 150\%$ of the initial specified value.
		Leakage current	$\leq$ The initial specified value.
Surge Voltage	The capacitors shall be subjected to 1,000 cycles each consisting of charge with the surge voltages specified at 105°C for 30 seconds through aprotective resistor (R=1kΩ) and discharge for 5 minutes 30seconds	Appearance	No significant damage.
		Capacitance change	$\leq \pm 20\%$ of the initial value.
		DF ( tan δ)	$\leq 150\%$ of the initial specified value.
		ESR	$\leq 150\%$ of the initial specified value.
		Leakage current	$\leq$ The initial specified value.

※ Note:If any doubt arises,measure the leakage current after following voltage treatment.  
Voltage treatment :DC rated voltage are applied to the capacitors for 120 minutes at 105°C.

## MARKING AND DIMENSIONS



(Unit:mm)

Size	5x6	5x8	6.3x6	6.3x8	6.3x10.5	8x8	8x11.5	8x16	8x20	10x11.5	10x16	10x20
ΦD	5	5	6.3	6.3	6.3	8	8	8	8	10	10	10
L	L+1.0 max	L+1.0 max	L+1.0 max	L+1.5 max	L+1.5 max	L+1.5 max	L+1.5 max	L+1.0 max	L+1.5 max	L+1.5 max	L+1.0 max	L+1.5 max
Φd	0.45	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6
P	2.0	2.0	2.5	2.5	2.5	3.5	3.5	3.5	3.5	5.0	5.0	5.0

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## STANDARD RATINGS

Rated Voltage (S.V.)	Cap (μF)	Size Code DxL	Leakage current (μA) max.	ESR (mΩ) max. 100k to 300kHz / 20°C	Rated Ripple Current (mA rms) 100kHz / 105°C	D.F. (tanδ) max. 120Hz / 20°C
2.5 (2.9)	560	6.3×8	300	8	5080	0.12
	560	8×8	300	7	5580	0.12
	820	6.3×8	410	8	5080	0.12
	1200	8×8	600	7	5580	0.12
	1500	8×11.5	750	7	5820	0.12
	2,700	10×11.5	1350	7	6100	0.12
4 (4.6)	560	6.3×8	448	8	5080	0.12
	560	8×8	448	7	5580	0.12
	680	8×8	544	7	5580	0.12
	820	8×11.5	656	7	5820	0.12
	2200	10×11.5	1760	7	6100	0.12
6.3 (7.2)	100	5×6	300	30	1500	0.12
	270	5×8	340	15	2400	0.12
	470	6.3×8	592	10	4500	0.12
	560	6.3×8	706	10	5080	0.12
	560	8×8	706	10	5580	0.12
	680	6.3×8	857	10	5080	0.12
	820	6.3×10.5	1033	8	5080	0.12
	820	8×8	1033	8	5580	0.12
	1,000	8×11.5	1260	8	5820	0.12
	1,200	8×11.5	1260	8	6200	0.12
	1,500	10×11.5	1890	7	6200	0.12
	2,200	10×11.5	2772	7	6200	0.12
10 (11.5)	220	6.3×8	440	10	2820	0.12
	470	6.3×8	940	10	5080	0.12
	470	8×8	940	10	5080	0.12
	560	8×8	1120	8	5580	0.12
	680	8×8	1360	9	5580	0.12
	820	8×11.5	1640	9	5820	0.12
	1,000	10×11.5	2000	8	6100	0.12
	1500	8×20	3000	8	6100	0.12
	1500	10×11.5	3000	8	6100	0.12



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## STANDARD RATINGS

Rated Voltage (S.V.)	Cap (μF)	Size Code DxL	Leakage current (μA) max. ※2	ESR (mΩ) max. 100k to 300kHz / 20°C	Rated Ripple Current (mA rms) 100kHz / 105°C	D.F. (tanδ) max. 120Hz / 20°C
16 (18.4)	100	6.3×6	320	30	2200	0.12
	220	6.3×8	704	15	3500	0.12
	270	6.3×8	864	15	3500	0.12
	330	8×8	1056	15	4500	0.12
	470	8×8	1504	13	4500	0.12
	470	8×11.5	1504	13	5400	0.12
	560	8×11.5	1792	16	5400	0.12
	820	10×11.5	2624	10	6100	0.12
	1000	8×16	3200	10	6100	0.12
	1000	10×11.5	3200	10	6100	0.12
	1500	8×20	4800	8	6100	0.12
	1500	10×16	4800	8	6500	0.12
	1800	10×20	5760	8	6800	0.12
	2200	10×20	7040	8	6800	0.12

## FREQUENCY COEFFICIENT FOR RIPPLE CURRENT

Frequency	120Hz ≤ f < 1kHz	1kHz ≤ f < 10kHz	10kHz ≤ f < 100kHz	100kHz ≤ f < 500kHz
Coefficient	0.05	0.3	0.7	1.0

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