ET series

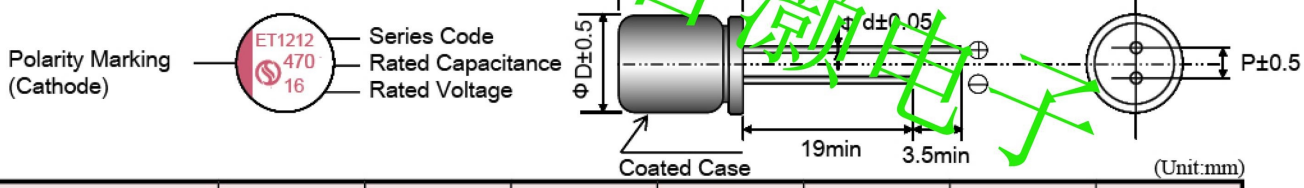
- High temperature, low ESR, High ripple current capability
- Rated voltage : 4~50V
- Endurance : 1,000hours at 125℃
- Applications : DC-DC Converters, Voltage Regulators, Decouping Applications for Computer Motherboards, etc.
- RoHS compliant
- Halogen Free compliant

SPECIFICATIONS

Items	Conditions	Characteristics	
Category Temperature Range	—	-55 to +125℃	
Rated Voltage Range	—	4 ~ 50V	
Capacitance Tolerance	at 20℃,120Hz	±20%(M)	
Surge Voltage	at 125℃	Rated voltage ×1.15V	
Leakage Current	at 20℃ after 2 minutes	I ≦ 0.2CV or 300(μA) Whichever is greater measured,after 2minutes application of rated working voltage at +20℃. Please see the attached characteristics list	
Dissipation Factor (tan δ)	at 20℃,120Hz	Please see the attached characteristics list	
Characteristics of Impedance at low, high temperature	at -55℃,100kHz	Z(-55℃)/Z(+20℃)	≦ 1.25
	at -25℃,100kHz	Z(-25℃)/Z(+20℃)	≦ 1.15
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃after the rated voltage is applied for 1,000 hours at 125℃.	Appearance	NO significant damage.
		Capacitance change	≦ ±20% of the initial value.
		DF(tanδ)	≦ 150% of the initial specified value.
		ESR	≦ 150% of the initial specified value.
		Leakage current	≦ The initial specified value.
Damp Heag (Steady State)	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjecting them to store at 60℃, 90 to 95% RH for 1,000 hours ,without DC applied.	Appearance	NO significant damage.
		Capacitance change	≦ ±20% of the initial value.
		DF(tanδ)	≦ 150% of the initial specified value.
		ESR	≦ 150% of the initial specified value.
		Leakage current	≦ 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℃ for 30 seconds through aprotective resistor (R=1kΩ) and discharge for 5 minutes 30 seconds.	Appearance	NO significant damage.
		Capacitance change	≦ ±20% of the initial value.
		DF(tanδ)	≦ 150% of the initial specified value.
		ESR	≦ 150% of the initial specified value.
		Leakage current	≦ 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 125℃.

MARKING AND DIMENSIONS



Size	6.3x6	6.3x8	8x7	8x8	8x12	10x10	10x12
ϕD	6.3	6.3	8	8	8	10	10
L	L+1.0 max	L+1.5 max	L+1.0 max	L+1.5 max	L+1.0 max	L+1.0 max	L+1.0 max
ϕd	0.45	0.5	0.5	0.6	0.6	0.6	0.6
P	2.5	2.5	3.5	3.5	3.5	5.0	5.0

ET SERIES STANDARD CHARACTERISITICS LIST

Rated voltage (S.V.)	Cap (μF)	Size DxL	Leakage current (uA) max. ※2	ESR (mΩ) max. 100k to 300kHz / 20℃	Rated Ripple Current (mA rms)		D.F. (tanδ) max. 120Hz / 20℃
					105℃ 100kHz	125℃ 100kHz	
4 (4.6)	100	6.3×6	300	40	2390	797	0.12
	330	6.3x8	300	20	3200	1067	0.12
	560	6.3x8	448	20	3200	1067	0.12
	1,000	8x8	800	20	3800	1267	0.12
	1,200	8x12	960	16	4200	1400	0.12
	2,500	10x12	2,000	16	5460	1820	0.12
6.3 (7.2)	100	6.3x6	300	40	2100	700	0.12
	470	6.3x8	592	20	3100	1033	0.12
	560	8x8	705	20	4300	1433	0.12
	1,000	8x12	1,260	16	5100	1700	0.12
	1,200	8x12	1,512	16	5100	1700	0.12
	1,500	10x10	1,890	20	5200	1733	0.12
	1,800	10x12	2,268	16	5440	1813	0.12
10 (11.5)	100	6.3x6	300	40	1800	600	0.12
	330	6.3x8	660	20	2360	787	0.12
	330	8x7	660	40	2560	853	0.12
	560	8x8	1,120	20	3200	1067	0.12
	820	8x12	1,640	16	4200	1400	0.12
	1,000	10x10	2,000	20	5120	1707	0.12
	1,200	10x12	2,400	16	5600	1867	0.12
16 (18.4)	47	6.3x6	300	30	1620	540	0.12
	82	6.3x6	300	30	1620	540	0.12
	100	6.3x8	320	20	2120	707	0.12
	330	8x8	1,056	20	4300	1433	0.12
	470	8x12	1,504	16	4500	1500	0.12
	560	10x12	1,792	16	4700	1567	0.12
	820	10x12	2,624	16	4700	1567	0.12
25 (28.8)	47	6.3x6	300	50	2000	667	0.12
	100	6.3x8	500	30	2000	667	0.12
	180	8x8	900	28	3100	1033	0.12
	220	8x12	1,100	26	3600	1200	0.12
	330	10x12	1,650	24	4250	1417	0.12
	470	10x12	2,350	24	4200	1400	0.12
35 (40.3)	22	6.3x6	300	70	1450	483	0.12
	68	6.3x8	476	60	1500	500	0.12
	120	8x8	840	30	2200	733	0.12
	150	8x12	1,050	28	2600	867	0.12
	220	10x10	1,540	28	2950	983	0.12
	270	10x12	1,890	28	3200	1067	0.12
50 (57.5)	10	6.3x6	300	60	1400	467	0.12
	33	6.3x8	330	60	1500	500	0.12
	47	8x8	470	30	2000	667	0.12
	68	8x12	680	28	2200	733	0.12
	100	10x10	1,000	28	2300	767	0.12
	100	10x12	1,000	28	2500	833	0.12

※ 1. Capacitance tolerance : ±20%(M)
※ 2. After 2 minutes

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