

TM Series

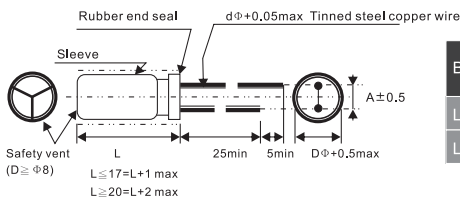
- 105°C, 2000 hours LOW ESR series (紋波疊加)



• SPECIFICATIONS

Items	Characteristics								
Category Temperature Range	- 40 to +105°C								
Rated Voltage Range	6.3V to 100 Vdc								
Capacitance Tolerance	± 20% (M) (at 20°C, 120Hz)								
Leakage Current	I=0.01CV or 3μA, whichever is greater. Where, I :Max. Leakage current (μA). C: Nominal capacitance (μF) .V :Rated voltage(V) (at 20°C, after 2 minutes)								
Dissipation Factor (tan δ)	Rated voltage (Vdc)	6.3V	10V	16V	25V	35V	50V	63V	100V
	tan δ (Max.)	0.22	0.19	0.16	0.14	0.12	0.10	0.08	0.08
Low Temperature Characteristics	For capacitance > 1000u .and 2% per another 1000uF (at 20°C, 120Hz) Impedance ration max at 120Hz								
	Working voltage	6.3v	10v	16v	25v	35v	50v	63v	100v
	Z-25°C/ Z+20°C	4	3	2	2	2	2	2	2
	Z-40°C/ Z+20°C	8	6	4	3	3	3	3	3
Load. Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after the voltage is applied for 2000 hours at 105°C								
	Capacitance change	≤ ±20% of the initial value							
	DF (tan δ)	≤ 200 % of the initial specified value							
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1000 hours at 105°C without voltage applied.								
	Capacitance change	≤ ±20% of the initial value							
	DF (tan δ)	≤ 200 % of the initial specified value							
	Leakage current	≤ The initial specified value							
Ripple Current Multiplier	Temperature coefficient								
	Temperature(°C)	~55	60	70	85	105			
	Factor	2.20	2.10	2.00	1.75	1.00			
	Frequency coefficient								
	cap	freq	60	120	1k	10k	100k		
	~100		0.30	0.40	0.75	0.90	1.00		
100~1000		0.40	0.50	0.85	0.94	1.00			
1000up		0.50	0.75	0.90	0.95	1.00			

• Diagram: (Unit: mm)



Body Dia φD	5		6		8		10		13		16		18	
									L ≤ 21	L ≥ 25				
Lead Dia φd	0.5		0.6		0.6		0.6		0.8	0.8	0.8		0.8	
Lead Space A	2	2.5	3	3.5	5		5		7.5		7.5		10	



● STANDARD RATING

Cap(μF) Item	6.3v			10v		
	Case size D*L(mm)	Ripple Current (mA/ms)	Impedance (Ω)	Case size D*L(mm)	Ripple Current (mA/ms)	Impedance (Ω)
100				5*11	210	0.55
220	6.3*11	320	0.23	6.3*11	340	0.22
330	6.3*11	320	0.23	6.3*11 8*12	340/380	0.22/0.13
470	6.3*11	540	0.13	6.3*12 8*12	380/640	0.22/0.13
680	8*12	700	0.10	8*12	700	0.09
820	8*16	810	0.09	8*16	870	0.08
1000	8*12 8*16	870/1080	0.085/0.069	8*16	980	0.06
1200	8*16	1150	0.064	10*17	1250	0.046
1500	10*20	1350	0.055	10*20	1410	0.040
2200	8*20 10*20	1450/1530	0.043/0.041	10*20 10*25	1670/1750	0.039/0.035
3300	10*25	1870	0.035	10*25 10*30	1950/2030	0.035/0.028
4700	10*30	2050	0.028	10*30 13*25	2310/2480	0.038/0.030
6800	13*25	2430	0.028	13*35	2660	0.022
8200	16*25	2810	0.022	16*36	2980	0.019
10000	16*25	2980	0.019	18*36	3250	0.019
15000	18*36	3230	0.019			

Maximum Ripple Current:(105°C 100KHz)

Maximum Impedance:(20°C 100KHz)

● STANDARD RATING

Cap(μF) Item	16v			25v		
	Case size D*L(mm)	Ripple Current (mA/ms)	Impedance (Ω)	Case size D*L(mm)	Ripple Current (mA/ms)	Impedance (Ω)
22				5*11	210	0.22
33	5*11	210	0.58	5*11	210	0.22
47	5*11	210	0.58	5*11	210	0.22
68	5*11	210	0.58	5*11	340	0.22
100	5*11	340	0.22	6.3*11	340	0.22
220	6.3*11 8*12	360/630	0.22/0.13	8*12	580	0.120
330	6.3*15 8*12	600/640	0.13/0.11	8*14	780	0.085
470	8*12	720	0.092	8*16	980	0.064
680	8*16	870	0.059	10*16	1250	0.046
820	8*20	1050	0.046	10*20	1350	0.042
1000	8*20 10*20	1350	0.055/0.046	10*20	1500	0.038
1200	10*20	1460	0.040	10*25	1750	0.030
1500	10*20	1520	0.032	13*25	1950	0.028
2200	10*25 13*21	1850	0.030/0.028	13*25	2230	0.029
3300	10*30	2120	0.022	16*25	2580	0.019
4700	13*30	2430	0.022	18*32	3050	0.019
6800	18*36	2870	0.019	18*40	3350	0.019
8200	18*36	3020	0.019			
10000	18*40	3480	0.019			

Maximum Ripple Current:(105°C 100KHz)

Maximum Impedance:(20°C 100KHz)

Chip Type
SMD

Miniature Type

General Purpose

High Frequency
Low Impedance

High Voltage
High Reliability

Non-polar Type

Large Size
Snap-in

Large Size
Screw

X Metallized
Polypropylene
Film Capacitors



● STANDARD RATING

Cap(μF)	Vdc Item	35v			50v		
		Case size D*L(mm)	Ripple Current (mA/ms)	Impedance (Ω)	Case size D*L(mm)	Ripple Current (mA/ms)	Impedance (Ω)
0.47					5*11	160	6.30
1					5*11	180	4.00
2.2					5*11	180	2.80
3.3					5*11	180	2.40
4.7					5*11	180	2.40
6.8					5*11	180	2.10
10					5*11	180	1.80
15		5*11	140	1.50	5*11	180	1.40
22		5*11	210	0.58	5*11	180	1.00
33		5*11	210	0.58	6.3*11	290	0.80
47		5*11 6.3*11	290/340	0.30/0.22	6.3*11 8*12	290/480	0.50/0.53
68		6.3*11	340	0.22	8*12	530	0.35
100		6.3*11	480	0.13	8*12	530	0.25
220		8*16	640	0.088	10*17	820	0.10
330		10*17	870	0.065	10*20	1080	0.07
470		10*20	1050	0.055	13*20	1320	0.05
680		13*20	1460	0.038	13*25	1650	0.050
820		13*20	1680	0.034	16*25	1970	0.040
1000		10*30 13*25	1920	0.032/0.030	16*25	2150	0.039
1200		13*25	2050	0.028	16*36	2280	0.025
1500		13*30	2350	0.026/0.023	18*36	2460	0.025
2200		16*30	2780	0.021	18*36	2740	0.025
3300		18*36	3650	0.019			
4700		18*40	3820	0.019			

Maximum Ripple Current:(105°C 100KHz)

Maximum Impedance:(20°C 100KHz)

● STANDARD RATING

Cap(μF)	Vdc Item	63v			100v		
		Case size D*L(mm)	Ripple Current (mA/ms)	Impedance (Ω)	Case size D*L(mm)	Ripple Current (mA/ms)	Impedance (Ω)
0.47		5*11	55	2.30			
1		5*11	55	2.30			
2.2		5*11	55	2.30			
3.3		5*11	55	2.30			
4.7		5*11	55	2.30	5*11	55	2.30
6.8		5*11	55	2.30	5*11	80	1.85
10		5*11	55	2.30	6.3*11	115	1.20
15		6.3*11	55	2.30	8*12	160	1.20
22		6.3*11	115	1.20	8*12	180	1.00
33		6.3*11	115	1.20	8*16	310	0.80
47		8*12	250	0.63	10*12	440	0.45
68		8*12	320	0.52	10*20	490	0.24
100		10*12	440	0.35	13*20	520	0.18
220		10*20	700	0.15	13*25	1120	0.071
330		13*21	900	0.10	16*25	1350	0.070
470		13*25	1120	0.05	16*32	1570	0.045
680		16*25	1350	0.052	16*36	1610	0.040
820		16*32	1570	0.048	18*40	1810	0.036
1000		18*32	1610	0.045			
1200		18*40	1810	0.036			

Maximum Ripple Current:(105°C 100KHz)

Maximum Impedance:(20°C 100KHz)