TM series Uitra Low Impedance,High Reliability

- Ultra Low impedance ,High reliability,High ripple
- Long life:105℃ 6000~10,000 hours
- High quality

■SPECIFICATIONS

Item	Performance Characteristics
Operating Temperature Range	-40℃~105℃
Rated Voltage Range	6.3~50V
Capacitance Range	4.7~10000uF
Capacitance Tolerance	±20%,120Hz,20℃
Leakage Current (MAX)	I≤0.01CV or 3uA whichever is greater.(after 2minutes) I=Leakage Currnt(uA),C=Nominal Capacitance(uF),V=Rated Voltage(V)
Dissipation Factor (tan δ)	When nominal capacitance is over 1000uF,tan δ shall be added 0.02 to the listed value with increase of every 1000uF. MAX (20℃120Hz)
Low Temperature Stability Impedance Ratio	MAX (120Hz)
Load Life	After life test at conditions stated in the table below, the capacitors shall meet the following requirement.
Shelf Life	After leaving capacitors under no load at 105℃ for 1000hours and applying voltage according to JIS C-5102 4-3,they meet the specified value for load life characteristics listed above.

Rated voltage(V)	6.3	10	16	25	35	50
Tan δ	0.22	0.19	0.16	0.14	0.12	0.11

Z(-25℃) /Z (+20℃)	≤2
Z(-55℃) /Z (+20℃)	≤3

Leakage Current	Not more than the specified
Capacitance Change	Within ±20% of initial value (6.3,10VDC : ≤30%)
Dissipation Factor	Not more than 200% of the specified

Case Dia	Life Time (hrs)
ΦD=5~6.3	6000
ΦD=8~10	8000
ΦD=13~18	10000

■MULTIPLIER FOR RIPPLE CURRENT

Frequency coefficient

Frequency(Hz) / Cap(uF)	120	1k	10k	≥100k
22-180	0.40	0.75	0.90	1.00
220-560	0.50	0.85	0.94	1.00
680-1800	0.60	0.87	0.95	1.00
2200-3900	0.75	0.90	0.95	1.00
4700-10000	0.85	0.95	0.98	1.00

Temperature	40℃	55℃	65℃	75℃	85℃	105℃
Coefficient	2.41	2.41	2.12	2.00	1.70	1.00

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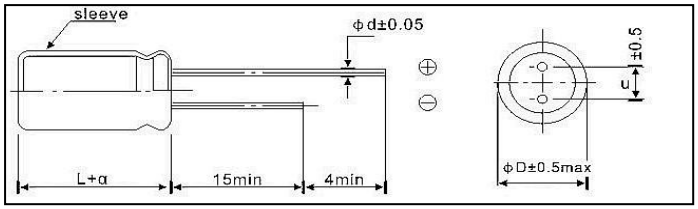
■DIMENSIONS(mm)



ΦD	5	6.3	8	10	13	16	18
Φd	0.5			0.6		0.8	
F	2.0	2.5	3.5	5.0		7.5	
α	L≤16：α=1.5 L≥16：α=2.0						

■STANDARD SIZE,MAXIUM PERMISSIBLE RIPPLE CURRENT,IMPEDANCE

Ripple Current(mA 105℃,100kHz)r.m.s

Rated voltage 6.3V				
Nominal capacitance (uF)	Size	Ripple Current	Impedance(ΩMAX)	
	ΦD×L(mm)		20℃,100kHz	-10℃，100kHz
220	5×11	345	0.22	0.80
330	5×11	370	0.21	0.72
470	6.3×12	525	0.096	0.38
680	8×12	660	0.072	0.26
1000	8×14	865	0.050	0.185
1500	8×20	1500	0.029	0.11
2200	10×20	1960	0.020	0.060
3300	13×21	2250	0.018	0.054
4700	13×25	2900	0.015	0.038
5600	13×30	3450	0.013	0.033
6800	16×22	3250	0.015	0.038
10000	18×25	3650	0.012	0.031

Ripple Current(mA 105℃,100kHz)r.m.s

Rated voltage 10V				
Nominal capacitance (uF)	Size	Ripple Current	Impedance(ΩMAX)	
	ΦD×L(mm)		20℃,100kHz	-10℃，100kHz
220	6.3×12	420	0.16	0.592
330	6.3×12	540	0.094	0.35
	8×12	500	0.12	0.42
470	8×12	720	0.076	0.28
680	8×12	945	0.056	0.19
1000	8×16	1250	0.045	0.15
	10×13	1330	0.039	0.14
1500	8×20	1500	0.029	0.11
	10×16	1760	0.028	0.10
2200	10×25	2250	0.018	0.054
3300	13×21	2480	0.017	0.043
4700	13×30	3450	0.013	0.033
	16×22	3250	0.015	0.038
6800	16×25	3630	0.013	0.035

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Ripple Current(mA 105℃,100kHz)r.m.s

Rated voltage 16V				
Nominal capacitance (uF)	Size	Ripple Current	Impedance(ΩMAX)	
	ΦD×L(mm)		20℃,100kHz	-10℃，100kHz
100	5×11	345	0.22	0.80
220	6.3×12	540	0.094	0.35
330	8×12	680	0.078	0.288
470	8×12	945	0.056	0.19
680	8×16	1250	0.045	0.15
	10×13	1330	0.039	0.14
1000	8×20	1500	0.029	0.11
	10×16	1760	0.028	0.10
1500	10×20	1960	0.020	0.06
2200	13×21	2480	0.017	0.043
	10×30	2520	0.016	0.04
3300	13×30	3450	0.013	0.033
	16×22	3250	0.015	0.038
4700	16×25	3630	0.013	0.035

Ripple Current(mA 105℃,100kHz)r.m.s

Rated voltage 25V				
Nominal capacitance (uF)	Size	Ripple Current	Impedance(ΩMAX)	
	ΦD×L(mm)		20℃,100kHz	-10℃，100kHz
100	5×11	360	0.21	0.76
150	6.3×12	540	0.094	0.35
220	8×12	680	0.078	0.288
330	8×12	945	0.056	0.19
470	10×13	1330	0.039	0.14
680	10×16	1760	0.028	0.10
1000	10×25	2250	0.018	0.054
1500	13×21	2480	0.017	0.043
2200	13×30	3450	0.013	0.033
	16×22	3250	0.015	0.038
3300	16×25	3630	0.013	0.035

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Ripple Current(mA 105℃,100kHz)r.m.s

Rated voltage 35V				
Nominal capacitance (uF)	Size	Ripple Current	Impedance(ΩMAX)	
	ΦD×L(mm)		20℃,100kHz	-10℃，100kHz
33	6.3×12	160	1.0	3.4
47	5×11	345	0.22	0.80
100	6.3×12	540	0.094	0.35
150	8×12	680	0.078	0.288
220	8×12	945	0.056	0.19
330	10×13	1330	0.039	0.14
470	10×16	1760	0.028	0.10
560	10×20	1960	0.020	0.060
680	10×25	2250	0.018	0.054
1000	13×21	2480	0.017	0.043
1200	13×25	2900	0.015	0.038
1500	13×30	3450	0.013	0.033
	16×22	3250	0.015	0.038
2200	16×25	3630	0.013	0.035

Ripple Current(mA 105℃,100kHz)r.m.s

Rated voltage 50V				
Nominal capacitance (uF)	Size	Ripple Current	Impedance(ΩMAX)	
	ΦD×L(mm)		20℃,100kHz	-10℃，100kHz
4.7	5×11	65	2.2	0.80
10	5×11	100	1.5	
33	6.3×12	250	0.324	
47	6.3×12	330	0.2	
100	8×12	724	0.074	
150	10×13	979	0.061	
220	10×16	1370	0.042	
330	10×25	1870	0.028	
470	13×21	2050	0.027	
560	13×25	2410	0.023	
680	13×30	2860	0.021	
820	13×35	2960	0.019	
	16×22	2730	0.023	
1000	16×25	3010	0.021	
1500	18×25	3290	0.019	