AXIAL TYPE ALUMINUM ELECTROLYTIC CAPACITORS

Suntan®

LOW VOLTAGE, 2 RUBBER TYPE

TS13AE

FEATURES

- 85℃, 2000 hours assured.
- Voltage range of 6.3 ~ 450V
- Wide operating temperature range, from -40℃~ +85℃

ITEMS	CHARACTERISTIC
Operating Temperature Range	-40℃ ~ +85℃
Capacitance Tolerance (120Hz 20℃)	±10% (K) , ±20% (M)
Voltage Range	6.3 ~ 100 VDC / 160 ~ 450 VDC
(20℃)Leakage Current	I≦0.03CV or 3 (u A)Whichever is greater (after 2 minutes applying the rated DC working Voltage at 20 ℃) / I≦0.04CV+15 (u A) for CV≦1000, I≦0.03CV+25 (u A) for CV>1000 (after 5 minutes applying the rated DC working Voltage at 20 ℃)
	Where: I=Leakage Current (u A) , C=rated Capacitance (μ F) , V= working Voltage (V)

(at 20℃, 120Hz) Dissipation Factor (tan δ)

W.V	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450
tanδ	0.23	0.20	0.17	0.15	0.12	0.10	0.09	0.08	0.15	0.15	0.20	0.20	0.24	0.24

Add 0.02 per 1000μ F for more than 1000μF.

(20℃)Surge Voltage

W.V	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450
S.V	8	13	20	32	44	63	79	125	200	250	300	400	450	500

Low Temperature Stability

Impedance radio at 120Hz.

Rated Voltage (V)		6.3	10	16	25	35	50	63	100	160	200	250	350	400	450
Z(-25℃) / +20℃	ϕ D<16	6	4	3	3	2	2	2	2	3	6	8	12	14	16
	ϕ D≧16	8	6	4	4	3	3	3	3						
Z(-40℃) / +20℃	ϕ D<16	10	8	6	6	4	3	3	3	4	8	10	-	-	-
	ϕ D≧16	18	16	12	10	8	8	6	6						

Load Life Test

After 2000 hours application of rated voltage at 85℃, capacitors meet the characteristics requirements listed at right.

Capacitance Change	Within ±20% of initial value
Dissipation Factor	Less than 200% of specified value
Leakage Current	Within specified value

Shelf Life Test

After leaving capacitors under no load at 85 ℃ for 1,000 hours and applying Voltage they meet the specified value for load life characteristics listed above.

Frequency Coefficient of Allowable Ripple Current

Freq.(Hz) / Cap.(μ F)	60	120	500	1K	10K up
Under 100	0.70	1.00	1.30	1.40	1.50
100 to 1000	0.75	1.00	1.20	1.30	1.35
1000 up above	0.80	1.00	1.10	1.12	1.15

Allowable Ripple Current Vs Ambient Temperature

Temperature(℃)	Under 50	70	85
Multiplier	1.78	1.40	1.00

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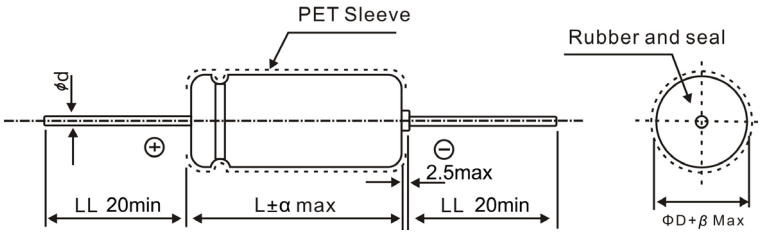
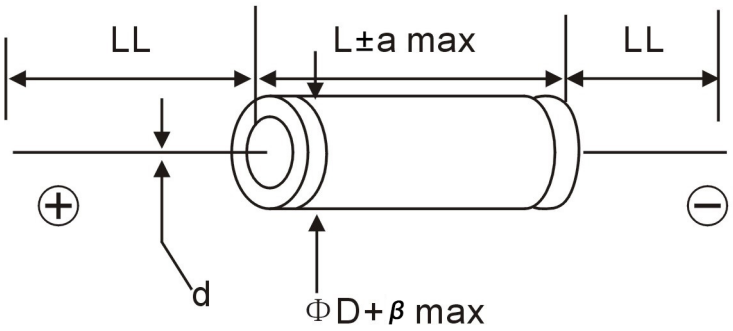
DIAGRAM OF DIMENSIONS

Unit:mm



LEAD DIAMETER

ØD	6.3	8	10	13	16	18	22	25
Ød	0.6	0.6	0.6	0.6	0.8	0.8	0.8	0.8
α	1.5	1.5	2.0	2.0	2.0	2.0	2.0	2.0
β	0.5	0.5	1.0	1.0	1.0	1.0	1.0	1.0



DIMENSIONS: Diameter (DØ) x Length (L) mm

RIPPLE CURRENT. mA at 85℃, 120Hz

V.DC	6.3V (0J)		10V (1A)		16V (1C)		25V (1E)		35V (1V)	
µF	ØDxL	mA	ØDxL	mA	ØDxL	mA	ØDxL	mA	ØDxL	mA
10	--	--	--	--	--	--	6.3x13	50	6.3x13	58
22	--	--	--	--	6.3x13	75	6.3x13	76	6.3x13	70
33	--	--	--	--	6.3x13	87	6.3x13	80	6.3x13	115
47	6.3x13	88	6.3x13	95	6.3x13	88	6.3x13	100	6.3x13	138
100	6.3x13	121	6.3x13	145	6.3x13	160	8x13	215	8x16	232
220	6.3x13	215	8x13	231	8x13	298	8x16	319	10x17	401
330	8x16	305	8x16	327	8x16	365	10x17	454	10x21	514
470	8x16	364	8x16	390	8x16	460	10x21	524	10x21	613
1000	10x17	662	10x17	671	10x21	775	13x22	873	13x27	955
2200	13x22	929	13x22	1051	13x27	1125	16x28	1344	16x33	1421
3300	13x27	1150	13x27	1288	16x28	1454	16x33	1611	18x40	1640
4700	13x27	1354	16x28	1552	16x33	1650	18x40	1881	18x40	2280
6800	16x28	1762	16x33	1930	16x40	2040	18x40	2170	22x40	2470
10000	16x40	2062	18x40	2122	18x40	2503	22x40	2893	25x41	3180

Note: Specifications are subject to change without notice. For more detail and update, please visit our website.

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RIPPLE CURRENT. mA at 85℃, 120Hz

V.DC	50V (1H)		63V (1J)		100V (2A)		160V (2C)		200V (2D)	
µF	ØDxL	mA	ØDxL	mA	ØDxL	mA	ØDxL	mA	ØDxL	mA
1	6.3x13	10	6.3x13	15	6.3x13	15	6.3x13	7	6.3x13	9
2.2	6.3x13	20	6.3x13	30	6.3x13	30	6.3x13	15	8x13	16
3.3	6.3x13	30	6.3x13	36	6.3x13	40	8x16	21	8x16	26
4.7	6.3x13	42	6.3x13	44	6.3x13	41	8x16	31	10x17	33
10	6.3x13	50	6.3x13	55	6.3x13	72	10x17	60	10x21	66
22	6.3x13	85	6.3x13	109	8x16	133	10x21	121	13x22	121
33	6.3x13	126	8x13	154	10x17	190	13x22	154	13x27	167
47	8x13	174	8x16	214	10x21	237	13x27	198	16x33	214
100	10x17	296	10x17	326	13x22	377	16x33	345	16x33	368
220	10x21	459	13x22	527	16x28	625	18x40	586	22x40	609
330	13x22	613	13x22	675	16x33	793	22x40	632	--	--
470	13x22	731	13x27	780	16x36	942	--	--	--	--
1000	16x33	1111	16x40	1249	22x40	1452	--	--	--	--
2200	18x40	1699	22x40	1744	25x43	2430	--	--	--	--
3300	22x40	2027	25x43	2309	--	--	--	--	--	--
4700	25x41	2347	25x43	2710	--	--	--	--	--	--
6800	25x52	2650	--	--	--	--	--	--	--	--

V.DC	250V (2E)		350V (2V)		400V (2G)		450V (2W)	
µF	ØDxL	mA	ØDxL	mA	ØDxL	mA	ØDxL	mA
1	6.3x13	12	8x16	13	8x16	14	8x16	15
2.2	8x16	17	10x17	19	10x17	21	10x21	23
3.3	10x17	31	10x17	33	10x17	34	10x21	36
4.7	10x17	38	10x21	44	10x21	45	13x22	46
10	10x21	72	13x22	72	13x22	80	13x27	82
22	13x27	126	13x27	132	16x33	137	16x36	143
33	16x28	178	16x33	186	16x40	192	16x40	201
47	16x33	241	16x40	253	16x40	339	18x40	339
100	16x40	391	22x40	402	22x43	424	22x43	448
220	22x40	632	--	--	--	--	--	--

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