

TS13AL

FEATURES

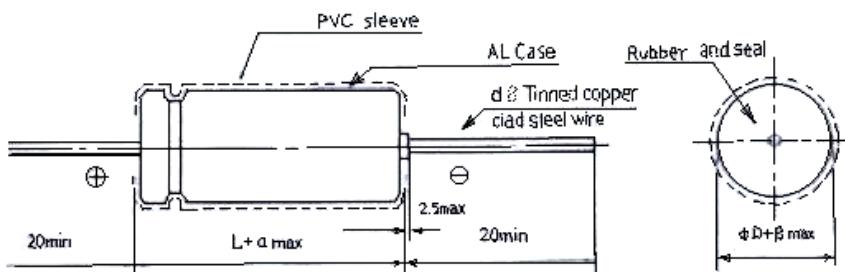
- Very low leakage current
- Low impedance characteristics



I T E M	C H A R A C T E R I S T I C																											
Operating Temperature Range	-40°C ~ +85°C																											
Capacitance Tolerance	±10%, ±20% (at 20°C 120Hz)																											
Leakage Current	I = 0.002CV or 0.4(μA) Whichever is greater (after 2 minutes applying the rated DC working voltage at 20°C) where: C= rated capacitance in μF. V = rated DC working voltage in V.																											
Dissipation Factor (Tanδ) (At 20°C, 120 Hz)	<table border="1"> <tr> <td>Rated voltage (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>100</td> </tr> <tr> <td>Tan δ</td> <td>0.24</td> <td>0.20</td> <td>0.17</td> <td>0.15</td> <td>0.12</td> <td>0.10</td> <td>0.09</td> <td>0.08</td> </tr> </table> <p>For capacitors whose capacitance exceeds 1,000μF, the specification of tanδ is increased by 0.02 for every addition of 1,000μF.</p>	Rated voltage (V)	6.3	10	16	25	35	50	63	100	Tan δ	0.24	0.20	0.17	0.15	0.12	0.10	0.09	0.08									
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Low Temperature Characteristics	Impedance Radio at 120Hz																											
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Load Life	<p>After 1000 hours application of rated voltage at 85°C, capacitors meet the characteristics requirements listed at right.</p> <table border="1"> <tr> <td>Capacitance Change</td> <td>Within ±20% of initial value</td> </tr> <tr> <td>Dissipation Factor</td> <td>Less than 200% of specified value</td> </tr> <tr> <td>Leakage Current</td> <td>Initial specified value of less</td> </tr> </table>	Capacitance Change	Within ±20% of initial value	Dissipation Factor	Less than 200% of specified value	Leakage Current	Initial specified value of less																					
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Shelf Life	After leaving capacitors under no load at 85°C for 1000 hours and applying voltage they meet the specified value for load life characteristics listed above.																											
Marking	Printed with white color letter on black sleeve.																											
Applicable Standards	Satisfies characteristic W of JIS C5141.																											

DIARGAM OF DIMENSIONS

Unit: mm



LEAD DIAMETER

ΦD	5	6	6.3	8	10	13	16	18	22	25
Φ					0.6					0.8
α						1.5			2.0	
β							0.5			1.0

Suntan

A X I A L T Y P E E L E C T R O L Y T I C C A P A C I T O R S
L O W L E A K A G E C U R R E N T T Y P E

TS13AL

DIMENSIONS: Diameter (DΦ)x Length(L) m/m

RIPPLE CURRENT. mA at 85°C, 120Hz

V.DC		6.3V (0J)		10V (1A)		16V (1C)		25V (1E)		35V (1V)		50V (1H)		63V (1J)		100V (2A)	
μF	Contents	ΦDxL	mA	ΦDxL	mA	ΦDxL	mA	ΦDxL	mA	ΦDxL	mA	ΦDxL	mA	ΦDxL	mA	ΦDxL	mA
0.10	0R1											5x12	1.5	5x12	3	5x12	3
0.22	R22											5x12	3.5	5x12	4.5	5x12	4.5
0.33	R33											5x12	5	5x12	7.5	5x12	7.5
0.47	R47											5x12	6	5x12	9	5x12	9
1.0	010											5x12	10	5x12	15	5x12	15
2.2	2R2											5x12	20	5x12	20	5x12	30
3.3	3R3											5x12	30	5x12	42	5x12	48
4.7	4R7											5x12	50	5x12	54	6x12	58
10	100							5x12	72	5x12	66	5x12	79	6x12	79	6.3x14	84
22	220					5x12	83	5x12	89	6x12	104	6x12	124	6.3x14	125	8x16	141
33	330					5x12	102	5x12	117	6.3x14	126	6.3x14	154	8x13	171	10x17	180
47	470	5x12	101	5x12	117	6x12	129	6x12	149	6.3x14	164	8x13	204	8x16	215	10x21	237
100	101	6x12	158	6x12	171	6.3x14	202	8x13	219	8x16	246	10x17	314	10x17	346	13x22	394
220	221	6.3x14	250	8x13	272	8x13	324	8x16	380	10x17	419	10x21	533	13x22	585	16x28	649
330	331	8x16	334	8x16	416	8x16	456	10x17	513	10x21	533	13x22	717	13x22	738	16x33	838
470	471	8x16	400	8x16	497	10x17	584	10x21	636	13x22	699	13x22	881	13x27	949	16x36	1019
1000	102	10x17	681	10x17	773	10x21	928	13x22	1019	13x27	1050	16x33	1458	16x36	1557		
2200	222	13x22	1151	13x22	1248	13x24	1441	16x28	1553	16x33	1801	18x36	2089	22x43	2227		
3300	332	13x27	1391	13x27	1515	16x28	1765	16x36	2042	18x36	2310	22x43	2679				
4700	472	16x28	1876	16x28	2035	16x33	2110	18x36	2251	22x43	2275	25x43	2638				

*Frequency coefficient of allowable ripple current

Freq.(Hz) Cap.(μF)	60	120	500	1K	10K up
Under 100	0.75	1.00	1.35	1.55	2.00
100 to 1000	0.83	1.00	1.23	1.32	1.50
1000 up above	0.90	1.00	1.12	1.10	1.15

*Allowable ripple current vs. ambient temperature

Temperature (°C)	Under 50	70	85
Multiplied	1.75	1.58	1.00