

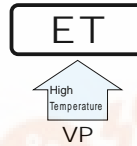
ALUMINUM ELECTROLYTIC CAPACITORS



ET series Bi-Polarized, Wide Temperature Range



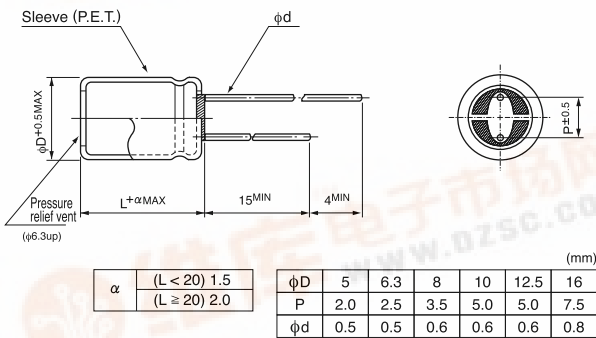
- Bi-polarized series for operations over wide temperature range of -55 ~ +105°C.
- Adapted to the RoHS directive (2002/95/EC).



Specifications

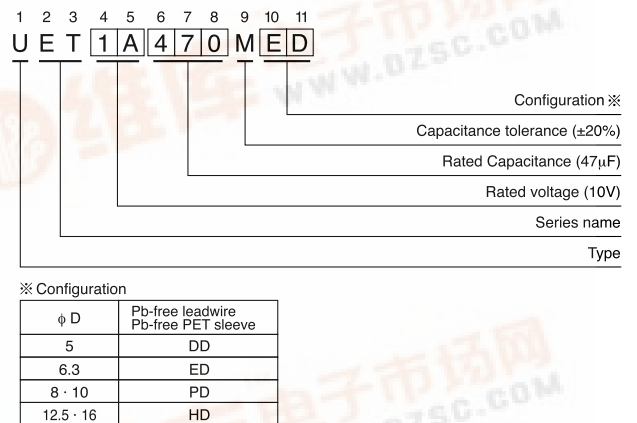
Item	Performance Characteristics																										
Category Temperature Range	-55 ~ +105°C																										
Rated Voltage Range	6.3 ~ 100V																										
Rated Capacitance Range	0.47 ~ 1000μF																										
Capacitance Tolerance	±20% at 120Hz, 20°C																										
Leakage Current	After 5 minutes' application of rated voltage, leakage current is not more than 0.03CV or 3 (μA), whichever is greater.																										
tan δ	Measurement frequency : 120Hz, Temperature : 20°C																										
	<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 (MAX.)</td> <td>0.24</td> <td>0.20</td> <td>0.16</td> <td>0.16</td> <td>0.14</td> <td>0.10</td> <td>0.09</td> <td></td> </tr> </table>	Rated voltage (V)	6.3	10	16	25	35	50	63	100	tan δ (MAX.)	0.24	0.20	0.16	0.16	0.14	0.10	0.09									
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Stability at Low Temperature	Measurement frequency : 120Hz																										
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ZT / Z20 (MAX.)	8	6	4	4	3	3	3	3																			
Endurance	<p>After 1000 hours' application of rated voltage at 105°C with the polarity inverted every 250 hours, capacitors meet the characteristic requirement listed at right.</p> <table border="1"> <tr> <td>Capacitance change</td> <td>Within ±20% of initial value</td> </tr> <tr> <td>tan δ</td> <td>200% or less of initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>Initial specified value or less</td> </tr> </table>	Capacitance change	Within ±20% of initial value	tan δ	200% or less of initial specified value	Leakage current	Initial specified value or less																				
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Shelf Life	After storing the capacitors under no load at 105°C for 1000 hours, and after performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they will meet the specified value for endurance characteristics listed above.																										
Marking	Printed with white color letter on black sleeve.																										

Radial Lead Type



• Please refer to page 21 about the end seal configuration.

Type numbering system (Example : 10V 47μF)



Dimensions

Cap. (μF)	Code	6.3		10		16		25		35		50		63		100	
		0J		1A		1C		1E		1V		1H		1J		2A	
0.47	R47											5 × 11	8			5 × 11	10
1	010											5 × 11	12			5 × 11	15
2.2	2R2											5 × 11	18			6.3 × 11	22
3.3	3R3											5 × 11	22	6.3 × 11	26	8 × 11.5	32
4.7	4R7							5 × 11	23	5 × 11	25	6.3 × 11	29	6.3 × 11	31	8 × 11.5	39
10	100					5 × 11	30	5 × 11	34	6.3 × 11	40	8 × 11.5	51	8 × 11.5	53	10 × 12.5	64
22	220			5 × 11	42	6.3 × 11	51	6.3 × 11	55	8 × 11.5	68	10 × 12.5	82	10 × 16	96	10 × 20	114
33	330	5 × 11	46	6.3 × 11	57	6.3 × 11	63	8 × 11.5	79	10 × 12.5	89	10 × 16	107	10 × 20	129	12.5 × 20	164
47	470	6.3 × 11	61	6.3 × 11	67	8 × 11.5	89	10 × 12.5	100	10 × 12.5	111	10 × 20	146	10 × 20	157	12.5 × 25	200
100	101	8 × 11.5	104	10 × 12.5	125	10 × 12.5	139	10 × 16	164	10 × 20	196	12.5 × 25	264	12.5 × 25	275	16 × 25	304
220	221	10 × 12.5	168	10 × 16	204	10 × 20	279	12.5 × 25	336	12.5 × 25	364	16 × 25	443	16 × 31.5	486		
330	331	10 × 16	229	10 × 20	275	12.5 × 20	346	12.5 × 25	414	16 × 25	493	16 × 31.5	593				
470	471	10 × 20	300	12.5 × 20	371	12.5 × 25	460	16 × 25	543	16 × 25	586						
1000	102	12.5 × 25	550	16 × 25	668	16 × 25	746	16 × 31.5	871								

Rated Ripple (mArms) at 105°C 120Hz

Frequency coefficient of rated ripple current

Cap. (μF)	Frequency	50 Hz	120 Hz	300 Hz	1 kHz	10 kHz ~ 47
100 ~ 470		0.75	1.00	1.35	1.57	2.00
100 ~ 470		0.80	1.00	1.23	1.34	1.50

Please refer to page 21, 22, 23 about the formed or taped product spec.