

Features

- 105°C, wide temperature range
- Suitable for high reliability products
- RoHS Compliance

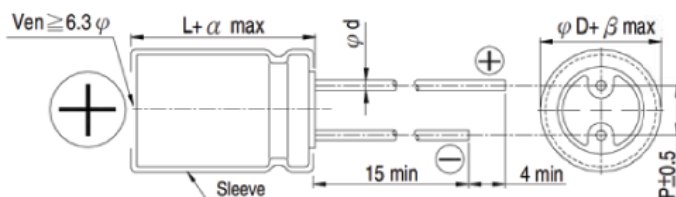


Sleeve & Marking Color: Deep Purple & White

SPECIFICATIONS

Items	Performance																																																							
Category Temperature Range	-55℃ ~ +105℃																																																							
Capacitance Tolerance	±20% (at 120Hz, 20℃)																																																							
Leakage Current (at 20℃)	I = 0.01CV or 3 (μ A) whichever is greater (after 2 minutes) Where, C = rated capacitance in μ F V = rated DC working voltage in V																																																							
Dissipation Factor (Tan δ at 120 Hz, 20℃)	<table><tr><td>Rated Voltage</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>0.23</td><td>0.20</td><td>0.16</td><td>0.14</td><td>0.12</td><td>0.10</td><td>0.09</td><td>0.08</td></tr></table> When the capacitance exceeds 1,000 μ F, 0.02 shall be added every 1,000 μ F increase.									Rated Voltage	6.3	10	16	25	35	50	63	100	Tan δ (max)	0.23	0.20	0.16	0.14	0.12	0.10	0.09	0.08																													
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Low Temperature Characteristics (at 120Hz)	Impedance ratio shall not exceed the values given in the table below. <table><tr><td colspan="2">Rated Voltage</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 rowspan="4">Impedance Ratio</td><td>Z(-25℃)</td><td>φ D < 16</td><td>4</td><td>3</td><td>3</td><td>2</td><td>2</td><td>2</td><td>2</td></tr><tr><td>/Z(+20℃)</td><td>φ D ≥ 16</td><td>5</td><td>4</td><td>3</td><td>2</td><td>2</td><td>2</td><td>3</td></tr><tr><td>Z(-40℃)</td><td>φ D < 16</td><td>8</td><td>6</td><td>4</td><td>4</td><td>4</td><td>3</td><td>3</td></tr><tr><td>/Z(+20℃)</td><td>φ D ≥ 16</td><td>12</td><td>8</td><td>6</td><td>4</td><td>3</td><td>3</td><td>6</td></tr></table>									Rated Voltage		6.3	10	16	25	35	50	63	100	Impedance Ratio	Z(-25℃)	φ D < 16	4	3	3	2	2	2	2	/Z(+20℃)	φ D ≥ 16	5	4	3	2	2	2	3	Z(-40℃)	φ D < 16	8	6	4	4	4	3	3	/Z(+20℃)	φ D ≥ 16	12	8	6	4	3	3	6
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Endurance	<table><tr><td>Test Time</td><td>2,000 Hrs</td></tr><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>Within specified value</td></tr></table> * The above specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage applied with rated ripple current for 2,000 hours at 105℃.									Test Time	2,000 Hrs	Capacitance Change	Within ±20%of initial value	Dissipation Factor	Less than 200% of specified value	Leakage Current	Within specified value																																							
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Shelf Life Test	<table><tr><td>Test Time</td><td>1,000 Hrs</td></tr><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>Within specified value</td></tr></table> * The above specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 105℃ without voltage applied.									Test Time	1,000 Hrs	Capacitance Change	Within ±20%of initial value	Dissipation Factor	Less than 200% of specified value	Leakage Current	Within specified value																																							
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Ripple Current & Frequency Multipliers	<table><tr><td>Cap.(μ F) \ Freq.(Hz)</td><td>60 (50)</td><td>120</td><td>500</td><td>1k</td><td>10k up</td></tr><tr><td>Under 100</td><td>0.70</td><td>1.00</td><td>1.30</td><td>1.40</td><td>1.50</td></tr><tr><td>100 < C ≤ 1,000</td><td>0.75</td><td>1.00</td><td>1.20</td><td>1.30</td><td>1.35</td></tr><tr><td>1,000 up above</td><td>0.80</td><td>1.00</td><td>1.10</td><td>1.12</td><td>1.15</td></tr></table>									Cap.(μ F) \ Freq.(Hz)	60 (50)	120	500	1k	10k up	Under 100	0.70	1.00	1.30	1.40	1.50	100 < C ≤ 1,000	0.75	1.00	1.20	1.30	1.35	1,000 up above	0.80	1.00	1.10	1.12	1.15																							
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DIAGRAM OF DIMENSIONS



LEAD SPACING AND DIAMETER

Unit: mm

	5	6.3	8	10	12.5	16	18	22
φ D	5	6.3	8	10	12.5	16	18	22
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10
φ d	0.5		0.6			0.8		1.0
α		1.0			1.5			2.0
β				0.5				

**DIMENSION & PERMISSIBLE RIPPLE CURRENT**Dimension: $\phi D \times L$ (mm)
Ripple Current: mA/rms at 120 Hz, 105°C

μF	V. DC Contents	6.3V (0J)				10V (1A)				16V (1C)				25V (1E)			
		$\phi D \times L$	mA	* $\phi D \times L$	mA	$\phi D \times L$	mA	* $\phi D \times L$	mA	$\phi D \times L$	mA	* $\phi D \times L$	mA	$\phi D \times L$	mA	* $\phi D \times L$	mA
10	100									5x11	36			5x11	40		
22	220									5x11	58			5x11	68		
33	330									5x11	71			5x11	78		
47	470					5x11	76			5x11	90			5x11	97		
100	101	5x11	103			5x11	105			6.3x11	133	5x11	110	6.3x11	142		
220	221	6.3x11	160	5x11	140	6.3x11	175	5x11	150	8x11.5	215	6.3x11	180	8x11.5	236		
330	331	8x11.5	219	6.3x11	190	8x11.5	245	6.3x11	200	8x11.5	260			10x12.5	335	8x11.5	330
470	471	8x11.5	261	6.3x11	230	8x11.5	290	6.3x11	250	10x12.5	370	8x11.5	310	10x16	440	10x12.5	380
1,000	102	10x12.5	455	8x11.5	380	10x16	550	10x12.5	460	10x20	640	10x16	560	12.5x20	770	10x20	680
2,200	222	10x20	750			12.5x20	860	10x20	760	12.5x25	1,000	12.5x20	920	16x25	1,170	12.5x25	1,090
3,300	332	12.5x20	920	10x20	840	12.5x20	1,100			16x25	1,300	12.5x25	1,170	16x31.5	1,460	16x25	1,400
4,700	472	16x25	1,330	12.5x20	1,090	16x25	1,400	12.5x25	1,260	16x31.5	1,600	16x25	1,480	18x35.5	1,780	16x31.5	1,710

μF	V. DC Contents	35V (1V)				50V (1H)				63V (1J)				100V (2A)			
		$\phi D \times L$	mA	* $\phi D \times L$	mA	$\phi D \times L$	mA	* $\phi D \times L$	mA	$\phi D \times L$	mA	* $\phi D \times L$	mA	$\phi D \times L$	mA	* $\phi D \times L$	mA
0.1	0R1					5x11	1.3			5x11	2.1			5x11	2.4		
0.22	R22					5x11	2.9			5x11	3.2			5x11	3.8		
0.33	R33					5x11	4.3			5x11	5.4			5x11	5.8		
0.47	R47					5x11	7.1			5x11	7.1			5x11	7.1		
1	010					5x11	13			5x11	15			5x11	15		
2.2	2R2					5x11	20			5x11	30			5x11	26		
3.3	3R3					5x11	30			5x11	31			5x11	31		
4.7	4R7					5x11	33			5x11	36			6.3x11	40		
10	100	5x11	45			5x11	50			5x11	54			8x11.5	66	6.3x11	54
22	220	5x11	71			5x11	78			6.3x11	86			8x11.5	111	6.3x11	93
33	330	6.3x11	90	5x11	85	6.3x11	96	5x11	90	8x11.5	141	6.3x11	100	10x12.5	183	8x11.5	144
47	470	6.3x11	105	5x11	90	8x11.5	130	6.3x11	117	8x11.5	151	6.3x11	129	10x16	193	10x12.5	204
100	101	8x11.5	170	6.3x11	150	8x11.5	188			10x12.5	235			12.5x20	320	10x20	285
220	221	10x12.5	300	8x11.5	270	10x20	355	10x16	335	10x20	400	10x16	360	16x25	507	13x25	440
330	331	10x16	400	10x12.5	350	10x20	460	10x16	410	12.5x20	520	10x20	490	16x31.5	674	16x25	478
470	471	10x20	520	10x16	460	12.5x25	610	10x20	530	12.5x25	720	12.5x20	665	18x35.5	880	16x31.5	688
1,000	102	12.5x25	920	12.5x20	830	16x25	1,080	12.5x25	980	16x31.5	1,260	16x25	1,190				
2,200	222	16x31.5	1,340	16x25	1,260	18x35.5	1,530	16x35.5	1,470								
3,300	332	18x35.5	1,650	16x35.5	1,610	22x40	1,707	18x35.5	1,650								
4,700	472	18x40	1,900	18x35.5	1,900												