

FEATURES

1. Rated Working Voltage Range 6.3 to 100 VDC/160 to 450VDC at Operation Temperature Range -40 to +105℃
2. This series is for communication equipments, switching power supply, industrial measuring instruments, Automotive electric products, etc

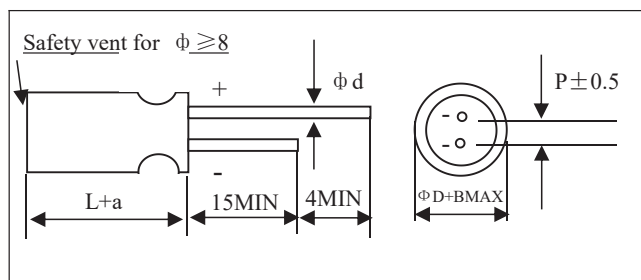
SPECIFICATIONS

Item	Performance Characteristics																																															
Operating Temperature Range	-40 to +105℃																																															
Rated Working voltage Range	6.3 to 100V DC					160 to 450V DC																																										
Nominal Capacitance Range	2.2- 15000(uF)																																															
Capacitance Tolerance	±20%（120Hz, +20℃）																																															
Leakage Current	I≤0.01CV or 3(uA)Whichever is greater					I≤0.03CV+40(uA)																																										
	after 2 minutes application of rated working voltage at +20℃																																															
Dissipation Factor tan δ (120Hz+20℃)	<table><tr><td>Working 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>0.28</td><td>0.24</td><td>0.20</td><td>0.16</td><td>0.14</td><td>0.12</td><td>0.10</td><td>0.08</td></tr></table>										Working voltage(V)	6.3	10	16	25	35	50	63	100	tan δ (max.)	0.28	0.24	0.20	0.16	0.14	0.12	0.10	0.08																				
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For capacitance value >1000uF add 0.02per another 1000uF																																																
Refer to standard products table (120Hz,+105℃)																																																
Correction factor for frequency																																																
<table><tr><td>Voltage (V)</td><td>Freq(Hz) CAP(uF)</td><td>50Hz</td><td>120Hz</td><td>300Hz</td><td>1kHz</td><td>10kHz~</td></tr><tr><td rowspan="3">6.3~100</td><td>0.1~47</td><td>0.75</td><td>1.00</td><td>1.35</td><td>1.57</td><td>2.00</td></tr><tr><td>100~470</td><td>0.80</td><td>1.00</td><td>1.23</td><td>1.34</td><td>1.50</td></tr><tr><td>1000~33000</td><td>0.85</td><td>1.00</td><td>1.10</td><td>1.13</td><td>1.15</td></tr><tr><td rowspan="2">160~450</td><td>0.47~220</td><td>0.80</td><td>1.00</td><td>1.25</td><td>1.40</td><td>1.60</td></tr><tr><td>330~1000</td><td>0.90</td><td>1.00</td><td>1.10</td><td>1.13</td><td>1.15</td></tr></table>										Voltage (V)	Freq(Hz) CAP(uF)	50Hz	120Hz	300Hz	1kHz	10kHz~	6.3~100	0.1~47	0.75	1.00	1.35	1.57	2.00	100~470	0.80	1.00	1.23	1.34	1.50	1000~33000	0.85	1.00	1.10	1.13	1.15	160~450	0.47~220	0.80	1.00	1.25	1.40	1.60	330~1000	0.90	1.00	1.10	1.13	1.15
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Multiplier for Ripple Current vs. Temperature	<table><tr><td>Temperature℃</td><td>45</td><td>60</td><td>70</td><td>85</td><td>105</td></tr><tr><td>Multiplier</td><td>2. 10</td><td>1. 90</td><td>1. 40</td><td>1. 25</td><td>1. 00</td></tr></table>										Temperature℃	45	60	70	85	105	Multiplier	2. 10	1. 90	1. 40	1. 25	1. 00																										
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Low Temperature Characteristics	Impedance ratio max. at 120Hz																																															
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	Z-40℃/Z+20℃	12	10	8	5	4	3	3	3																																							
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For capacitance value >1000uF Add0.5 per another 1000uF for Z-25℃/Z+20℃ Add1.0 per another 1000uF for Z-40℃/Z+20℃																																																

High temperature Loading	Test conditions Duration : 3000 hours Ambient temperature : +105℃ Applied voltage : DC voltage with maximum permissible ripple current specified at +105℃ (Sum of the DC voltage and superimposed pea AC voltage for maximum permissible ripple current should be equal to rated DC working voltage) Post test requirements at +20℃ Leakage current : ≤ Initial specified value Capacitance change : ≤ ±20% of initial measured value tan δ : ≤200% of initial specified value
Shelf life	Test conditions Duration : 1000 hours Ambient temperature : +105℃ Applied voltage : (None) Post test requirements at +20℃ Same Limits for high temperature loading
Others	JIS C-5141 JIS C-5102

CASE SIZE TABLE

Unit:mm



D Φ	5	6.3	8	10	13	16	18	22
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0
d Φ ±0.05	0.5			0.6		0.8		

aMAX	(L<20)1.5
	(L≥20)2.0

BMAX	(D<20)0.5
	(D≥20)1.0

DIMENSIONS

ΦD×L(mm)

WV(SV)		6.3V(8)		10V(13)		16V(20)		25V(32)		35V(44)	
Cap.(uF)	Code	0J		1A		1C		1E		1V	
10	106					5×11	62				
22	226					5×11	85				
33	336					5×11	100	5×11	160	6.3×11	180
47	476					5×11	150	6.3×11	215	6.3×11	230
68	686			5×11	160	6.3×11	225	6.3×11	262	8×12	370
82	826			5×11	170	6.3×11	245	6.3×11	282	8×12	420
100	107	5×11	205	6.3×11	205	6.3×11	255	8×12	365	8×12	455
220	227	6.3×11	280	8×12	365	8×12	545	8×14	752	10×15	812
270	277	6.3×11	325	8×12	415	8×16	660	8×20	755	10×20	985
330	337	8×12	415	8×12	555	10×12.5	750	10×15	810	10×20	1120
470	477	10×12.5	575	10×12.5	745	10×15	810	10×20	860	13×21	1380
680	687	10×15	705	10×15	810	10×20	860	13×21	880	13×25	1620
1000	108	10×15	940	10×20	1070	10×20	900	13×21	920	13×30	1940
2200	228	10×25	1460	13×25	1650	13×30	2060	13×40	2320	16×36	2510
3300	338	13×25	1850	13×35	2110	13×40	2350	16×36	2650	18×40	3050
4700	478	13×35	2060	16×32	2380	16×36	2650	18×40	2920		
6800	688	16×32	2320	16×36	2610	18×35	2860				
8200	828	16×36	2430	18×35	2820	18×40	3050				
10000	109	18×32	2540	18×40	3050						
15000	159	18×40	2910							Case size	Allowabl e ripple

Allowable Ripple (mA rms) at 105℃ 120HZ

ΦD×L(mm)

WV(SV)		50V(63)		63V(79)		100V(125)		160V(200)		200V(250)	
Cap.(uF)	Code	1H		1J		2A		2C		2D	
3.3	335							8×12	87	8×12	92
4.7	475					6.3×11	65	8×12	88	8×12	105
10	106					8×12	95	10×12.5	145	10×12.5	165
22	226	6.3×11	165	6.3×11	185	8×14	200	10×15	205	10×20	370
33	336	6.3×11	200	8×12	250	10×15	295	10×20	445	10×25	485
47	476	8×12	322	8×12	455	10×25	555	13×21	575	13×21	585
68	686	8×12	455	8×16	540	13×21	640	13×21	690	13×25	790
100	107	10×15	545	10×20	680	13×25	810	16×26	1023	16×26	1020
220	227	10×20	1110	13×21	1320	16×32	1410	16×36	1155	18×32	1205
330	337	13×21	1280	13×25	1410	18×40	1620	18×35	1475		
470	477	13×25	1430	13×35	1640						
680	687	13×35	1820	16×32	2020						
1000	108	16×32	2110	18×35	2210						
2200	228	18×40	2610							Case size	Allowable ripple

Allowable Ripple (mA rms) at 105℃ 120HZ

WV(SV)		250V(300)		350(400)		400V(450)		450V(500)	
Cap.(uF)	Code	2E				2G		2W	
2.2	225	8×12	86	8×12	48	8×12	65	10×12.5	75
3.3	335	8×12	98	10×12.5	86	10×12.5	90	10×15	105
4.7	475	10×12.5	110	10×12.5	102	10×15	130	10×20	115
10	106	10×15	245	10×17	145	10×20	158	13×21	225
22	226	13×21	390	13×21	278	13×25	285	16×26	465
33	336	13×21	498	13×25	453	13×25	462	16×26	500
47	476	13×25	655	16×26	580	16×26	585	16×32	685
68	686	16×26	812	16×30	952	16×32	965	18×32	755
82	826							18×32	850
100	107	16×32	1120	16×35	998	18×35	1010	18×43	1150
120	127							18×43/40	1280/1250
220	227	18×40	1210					Case size	Allowable ripple

Allowable Ripple (mA rms) at 105℃ 120HZ