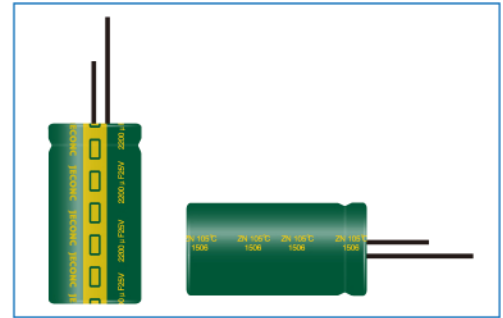


ZN 系列 SERIES

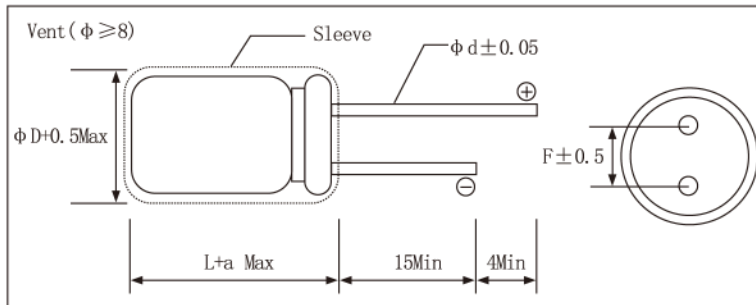
- 6000-10000h at 105°C
- Low impedance
- High ripple current ,long life
- RoHS Compliant

◆ SPECIFICATION



Items	Characteristics																		
Operating Temperature Range(°C)	-40~+105																		
Voltage range (V)	6.3~100																		
Capacitance Range (μF)	6.8~22000																		
Capacitance Tolerance	±20% (at 20°C, 120Hz)																		
leakage current (μA)	After 2 minute at 20°C application of rated voltage, leakage current is not more than 0.01CV or 3μA, whichever is greater . C:Nominal Capacitance (μF) V :Rated Voltage (V)																		
Dissipation Factor(Tan δ)	<table border="1"> <tr> <td>WV (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63~80</td> <td>100</td> </tr> <tr> <td>Tan δ (max)</td> <td>0.22</td> <td>0.19</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> <p>For Capacities >1000μF add 0.02 to every 1000μF (at 20°C, 120Hz)</p>	WV (V)	6.3	10	16	25	35	50	63~80	100	Tan δ (max)	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08
WV (V)	6.3	10	16	25	35	50	63~80	100											
Tan δ (max)	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08											
Low Temperature Characteristics	<table border="1"> <tr> <td>Rated Voltage (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25~100</td> </tr> <tr> <td>Z-25°C/Z+20°C</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z-40°C/Z+20°C</td> <td>8</td> <td>6</td> <td>4</td> <td>3</td> </tr> </table> <p>(at 120Hz)</p>	Rated Voltage (V)	6.3	10	16	25~100	Z-25°C/Z+20°C	4	3	2	2	Z-40°C/Z+20°C	8	6	4	3			
Rated Voltage (V)	6.3	10	16	25~100															
Z-25°C/Z+20°C	4	3	2	2															
Z-40°C/Z+20°C	8	6	4	3															
Load Life	<p>The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated rippled current is applied for 6000~10000 hours at 105°C</p> <table border="1"> <tr> <td>Capacitance change</td> <td>Within ±30% initial value (6.3~10V) Within ±25% initial value (16~100V)</td> <td>Case Dia</td> <td>Life time(hours)</td> </tr> <tr> <td>D. F. (Tan δ)</td> <td>Not more than 200% of specified value</td> <td>ΦD≤6.3</td> <td>6000</td> </tr> <tr> <td>leakage current</td> <td>Not more than specified value</td> <td>ΦD=8</td> <td>8000</td> </tr> <tr> <td></td> <td></td> <td>ΦD≥10</td> <td>10000</td> </tr> </table>	Capacitance change	Within ±30% initial value (6.3~10V) Within ±25% initial value (16~100V)	Case Dia	Life time(hours)	D. F. (Tan δ)	Not more than 200% of specified value	ΦD≤6.3	6000	leakage current	Not more than specified value	ΦD=8	8000			ΦD≥10	10000		
Capacitance change	Within ±30% initial value (6.3~10V) Within ±25% initial value (16~100V)	Case Dia	Life time(hours)																
D. F. (Tan δ)	Not more than 200% of specified value	ΦD≤6.3	6000																
leakage current	Not more than specified value	ΦD=8	8000																
		ΦD≥10	10000																
Shelf Life	<p>The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 105°C without voltage applied .Before the measurement ,the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.</p> <table border="1"> <tr> <td>Capacitance change</td> <td>Within ±25% initial value</td> </tr> <tr> <td>D. F. (Tan δ)</td> <td>Not more than 200% of specified value</td> </tr> <tr> <td>leakage current</td> <td>Not more than 200% of specified value</td> </tr> </table>	Capacitance change	Within ±25% initial value	D. F. (Tan δ)	Not more than 200% of specified value	leakage current	Not more than 200% of specified value												
Capacitance change	Within ±25% initial value																		
D. F. (Tan δ)	Not more than 200% of specified value																		
leakage current	Not more than 200% of specified value																		

◆ DIMENSIONS(mm)



ΦD	5	6.3	8	10	13	16	18
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
Φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8
a	1.5	1.5	1.5	1.5	1.5	1.5	1.5

◆ Frequency Coefficient

Frequency Cap (μF)	Frequency			
	120Hz	1KHz	10KHz	100KHz
0.47~180	0.40	0.75	0.90	1.00
220~560	0.50	0.83	0.93	1.00
680~1800	0.60	0.86	0.95	1.00
2200~3900	0.75	0.90	0.97	1.00
4700~18000	0.85	0.95	0.98	1.00

◆ Temperature Coefficient

Temperature (°C)	+70	+85	+105
Coefficient	1.96	1.68	1.00

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◆ STANDARD RATINGS

UR (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C100kHz	Rated Ripple Current 105°C100kHz	Size ΦD×L
(V)	(μF)	(Ω)	(mA rms)	(mm)
6.3 (7.2) 0J	180	0.290	340	5×11
	390	0.150	540	6.3×12
	820	0.087	840	8×12
	1200	0.069	1050	8×15
		0.064	1050	10×13
	1500	0.060	1210	8×20
	1800	0.049	1400	10×16
	2200	0.037	1650	10×20
	2700	0.031	1910	10×25
	3300	0.027	2230	10×30
	3900	0.027	2230	13×20
	4700	0.024	2530	13×25
	6800	0.021	2860	13×30
		0.025	2610	16×20
	8200	0.018	3140	13×35
		0.021	3000	18×20
	10000	0.017	3640	13×40
		0.020	3140	16×25
	12000	0.016	3610	16×32
		0.017	3530	18×25
15000	0.014	4080	16×36	
	0.014	4220	18×32	
18000	0.013	4220	16×40	
	0.012	4280	18×36	
22000	0.011	4700	18×40	
10 (13) 1A	120	0.290	340	5×11
	330	0.150	540	6.3×12
	560	0.087	840	8×12
	820	0.069	1050	8×15
	1000	0.060	1210	8×20
		0.064	1050	10×13
	1200	0.049	1400	10×16
	1800	0.037	1650	10×20
	2200	0.031	1910	10×25
	2700	0.027	2230	10×30
		0.027	2230	13×20
	3900	0.024	2530	13×25
	4700	0.021	2860	13×30
		0.025	2610	16×20
	5600	0.018	3140	13×35
		0.017	3640	13×40
	6800	0.020	3140	16×25
		0.021	3000	18×20
	8200	0.016	3610	16×32
		0.017	3530	18×25
10000	0.014	4080	16×36	
	0.014	4220	18×32	
12000	0.013	4220	16×40	
12000	0.012	4280	18×36	
15000	0.011	4700	18×40	
16 (20) 1C	120	0.290	340	5×11
	270	0.150	540	6.3×12
	470	0.087	840	8×12
	680	0.069	1050	8×15
		0.064	1050	10×13
820	0.060	1210	8×20	

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◆ STANDARD RATINGS

UR (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C100kHz	Rated Ripple Current 105°C100kHz	Size ΦD×L
(V)	(μF)	(Ω)	(mA rms)	(mm)
	1000	0.049	1400	10×16
	1500	0.037	1650	10×20
	1800	0.031	1910	10×25
	2200	0.027	2230	10×30
		0.027	2230	13×20
	3300	0.024	2530	13×25
		0.021	2860	13×30
	3900	0.025	2610	16×20
		0.018	3140	131×35
	4700	0.021	3000	18×20
		0.017	3640	13×40
	5600	0.020	3140	16×25
		0.016	3610	16×32
	6800	0.017	3530	18×25
		0.014	4080	16×36
8200	0.014	4220	18×32	
	0.013	4220	16×40	
10000	0.012	4280	18×36	
	0.011	4700	18×40	
12000	0.011	4700	18×40	
	82	0.29	340	5×11
25 (32) 1E	150	0.15	540	6.3×12
	330	0.087	840	8×12
	390	0.069	1050	8×15
	470	0.064	1050	10×13
	560	0.06	1210	8×20
	680	0.049	1400	10×16
	1000	0.037	1650	10×20
	1200	0.031	1910	10×25
	1500	0.027	2230	10×30
		0.027	2230	13×20
	2200	0.024	2530	13×25
		0.021	2860	13×30
	2700	0.025	2610	16×20
		0.018	3140	13×35
	3300	0.021	3000	18×20
		0.017	3640	13×40
	3900	0.02	3140	16×25
		0.016	3610	16×32
	4700	0.017	3530	18×25
		0.014	4080	16×36
	5600	0.013	4220	16×40
		0.014	4220	18×32
	6800	0.012	4280	18×36
		0.012	4280	18×36
	8200	0.012	4280	18×36
47		0.290	340	5×11
35 (44) 1V	100	0.150	540	6.3×12
	180	0.087	840	8×12
	270	0.069	1050	8×15
	330	0.060	1210	8×20
		0.064	1050	10×13
	470	0.049	1400	10×16
	680	0.037	1650	10×20
	820	0.031	1910	10×25
	1000	0.027	2230	10×30
		0.027	2230	13×20
	1500	0.024	2530	13×25
		0.021	2860	13×30
	1800	0.025	2610	16×20
		0.018	3140	13×35
	2200	0.021	3000	18×20

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◆ STANDARD RATINGS

UR (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C100kHz	Rated Ripple Current 105°C100kHz	Size ΦD×L
(V)	(μF)	(Ω)	(mA rms)	(mm)
35 (44) 1V	2700	0.017	3640	13×40
		0.020	3140	16×25
	3300	0.016	3610	16×32
		0.017	3530	18×25
	3900	0.014	4080	16×36
	4700	0.013	4220	16×40
		0.014	4220	18×32
5600	0.012	4280	18×36	
50 (63) 1H	27	0.480	238	5×11
	56	0.200	385	6.3×12
	100	0.120	620	8×12
	150	0.093	810	8×15
		0.100	810	10×13
	180	0.075	980	8×20
	220	0.069	1100	10×16
	270	0.055	1300	10×20
	390	0.043	1600	10×25
	470	0.038	1820	10×30
		0.034	1820	13×20
	680	0.030	2100	13×25
	820	0.025	2450	13×30
		0.028	2350	16×20
	1000	0.021	2800	13×35
		0.025	2600	18×20
	1200	0.019	3100	13×40
		0.024	2750	16×25
	1500	0.019	3150	16×32
0.021		2890	18×25	
1800	0.016	3550	16×36	
2200	0.014	3900	16×40	
	0.014	3800	18×32	
2700	0.013	4100	18×36	
63 (79) 1J	18	0.500	220	5×11
	33	0.250	350	6.3×12
	56	0.160	530	8×12
	82	0.120	700	8×15
	120	0.085	880	8×20
	120	0.110	725	10×13
	180	0.073	1050	10×16
	220	0.055	1300	10×20
	330	0.045	1550	10×25
	390	0.040	1780	10×30
		0.036	1780	13×20
	560	0.030	2100	13×25
	680	0.026	2415	13×30
		0.028	2250	16×20
	820	0.022	2700	13×35
		0.028	2500	18×20
	1000	0.020	3000	13×40
		0.025	2730	16×25
	1200	0.020	3000	16×32
		0.022	2800	18×25
	1500	0.018	3200	16×36
		0.018	3300	18×32
	1800	0.016	3590	16×40
0.017		3570	18×36	
2200	0.016	3670	18×40	



◆ STANDARD RATINGS

UR (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C100kHz	Rated Ripple Current 105°C100KHz	Size φD×L
(V)	(μF)	(Ω)	(mA rms)	(mm)
80 (100) 1K	12	0.800	163	5×11
	22	0.430	267	6.3×12
	39	0.180	462	8×12
	56	0.140	585	8×15
	82	0.110	735	8×20
		0.140	624	10×13
	120	0.100	780	10×16
	180	0.075	1040	10×20
	220	0.060	1170	10×25
	270	0.053	1350	10×30
		0.048	1430	13×20
	390	0.039	1620	13×25
	470	0.033	1950	13×30
		0.036	1750	16×20
	560	0.026	2250	13×35
		0.032	2100	18×20
	680	0.024	2450	13×40
		0.028	2250	16×25
820	0.022	2400	16×32	
	0.027	2270	18×25	
1000	0.020	2600	16×36	
1200	0.018	2900	16×40	
	0.020	2550	18×32	
1500	0.018	3050	18×36	
100 (125) 2A	6.8	0.800	163	5×11
	15	0.430	267	6.3×12
	27	0.180	462	8×12
	39	0.140	585	8×15
	56	0.110	735	8×20
		0.140	624	10×13
	82	0.100	780	10×16
	100	0.075	1040	10×20
	120	0.060	1170	10×25
	150	0.053	1350	10×30
	180	0.048	1430	13×20
	220	0.039	1620	13×25
	270	0.033	1950	13×30
		0.036	1750	16×20
	330	0.028	2250	16×25
		0.026	2250	13×35
	390	0.032	2100	18×20
		0.024	2450	130×40
	470	0.022	2400	16×32
		0.020	2600	16×36
	560	0.027	2270	18×25
		0.018	2900	16×40
680	0.020	2550	18×32	
	0.018	3050	18×36	
1000	0.017	3510	18×40	

Customer products are available on request