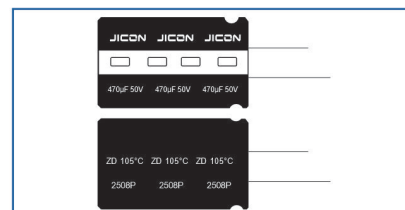


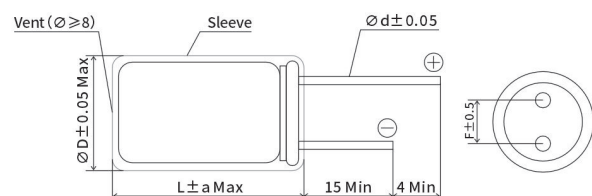
ZD 系列 SERIES

- 6000-10000h at 105°C
- Low impedance for high frequency
- Ultra long life, High ripple current
- Switching power supplies
- RoHS Compliant



Items	Characteristics								
Operating Temperature Range(°C)	-40~+105								
Voltage Range (V)	6.3~100								
Capacitance Range (μF)	4.7~18000								
Capacitance Tolerance(20°C, 120Hz)	±20%								
Leakage Current (μA)	6.3~100V								
	I≤0.01CV or 3μA whichever is greater After 2 minute at 20°C application of rated voltage								
	I:Max. leakage current (μA) C:Nominal Capacitance (μF) V:Rated Voltage (V)								
Dissipation Factor (20°C, 120Hz)	Rated Voltage (V)	6.3	10	16	25	35	50	63	80~100
	Tanδ(max)	0.18	0.16	0.14	0.12	0.10	0.09	0.08	0.08
	For Capacitances > 1000μF add 0.02 to every 1000μF								
Low Temperature Characteristics (Max. Impedance Ratio at 120Hz)	Rated Voltage (V)	6.3	10~25	35~63	80~100				
	Z-40°C/Z+20°C	8	6	3	3				
Load Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for the specified period of time at 105°C.								
	Capacitance change	≤±20% of the initial value					Case Dia	Life time (h)	
	D.F.(Tanδ)	≤200% of specified value					φD≤6.3	6000	
	Leakage current	≤The initial specified value					φD=8	8000	
							φD>8	10000	
Shelf Life	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 .								
	Capacitance change	≤±20% of the initial value							
	D.F.(Tanδ)	≤200% of specified value							
	Leakage current	≤200% of specified value							

◆ Dimensions(mm)



ΦD	5	6.3	8	10	13	16	18	20	22
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5	7.5	10
Φd	0.5			0.6		0.8			
a	1.5					2.0			

◆ Frequency Coefficient

Frequency Cap(µF)	120HZ	1KHZ	10KHZ	100KHZ
≤ 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	0.85	0.95	0.98	1.00

◆ Temperature Coefficient

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

◆ Ratings for ZD Series

UR (Surge Voltage) Code (V)	Rated Capacitance (μF)	Max ESR 20°C 100kHz (Ω)	Rated Ripple Current 105°C100kHz (mA rms)	Size φD×L (mm)
6.3(8)0J	150	0.480	220	5×11
	330	0.200	380	6.3×12
	470	0.170	430	6.3×15
	560	0.150	500	8×12
	680	0.110	680	8×14
	1000	0.082	910	8×16
	1200	0.062	1150	8×20
	1500	0.048	1320	10×16
	2200	0.041	1550	10×20
	2700	0.040	1780	10×25
	3300	0.038	2050	13×20
	4700	0.028	2800	13×25
	5600	0.023	2980	16×20
	6800	0.020	3100	16×25
	10000	0.018	3650	16×30
	12000	0.017	3820	18×25
	15000	0.016	4150	18×30
	18000	0.015	4260	18×40
10(13)1A	100	0.480	250	5×11
	220	0.200	380	6.3×12
	330	0.160	480	6.3×15
	470	0.110	700	8×12
	560	0.098	750	8×14
	680	0.083	900	8×16
	820	0.081	1000	8×20
	1000	0.056	1310	10×16
	1500	0.043	1550	10×20
	2200	0.040	1830	10×25
	2700	0.037	2200	13×20
	3300	0.035	2410	13×25
	4700	0.026	2980	13×30
	5600	0.021	3150	16×25
	6800	0.019	3620	16×30
	8200	0.018	3750	16×35
	10000	0.016	4120	18×30
	12000	0.015	4250	18×35
	15000	0.015	4360	18×40
16(20)1C	68	0.500	250	5×11
	150	0.320	350	6.3×12
	220	0.160	520	6.3×15
	330	0.110	730	8×12
	390	0.100	810	8×14
	470	0.095	880	8×16
	560	0.075	980	8×16
	680	0.062	1200	8×20
	820	0.053	1310	10×16
	1000	0.040	1600	10×20
	1200	0.038	1750	10×25
	1500	0.031	2010	13×20
	2200	0.025	2400	13×25
	3300	0.019	3050	13×30
	3900	0.018	3520	16×25
	4700	0.017	3650	16×30
	5600	0.016	3700	16×35
	6800	0.015	3930	16×40
	8200	0.014	4150	18×35
	10000	0.013	4280	18×40
25(32)1E	47	0.500	280	5×11
	100	0.240	380	6.3×12
	150	0.170	480	6.3×15
	220	0.130	720	8×12
	270	0.120	850	8×14
	330	0.110	930	8×16
	390	0.095	1130	8×20
	470	0.085	1320	10×16
	560	0.072	1400	10×20
	680	0.060	1510	10×20
	820	0.045	1630	10×25
	1000	0.036	1950	13×20
	1500	0.031	2350	13×25
	2200	0.024	3050	13×30
	2700	0.019	3160	16×25
	3300	0.018	3550	16×30
	3900	0.017	3700	16×35
25(32)1E	4700	0.016	4150	16×40
	5600	0.015	4200	18×35
	6800	0.014	4350	18×40
	27	0.500	230	5×11
	56	0.320	320	6.3×12
	82	0.200	450	6.3×15
	100	0.170	500	8×12
	150	0.150	710	8×14
	180	0.130	780	8×16
	220	0.100	920	10×13
	270	0.098	1150	10×16
	330	0.093	1280	10×20
	470	0.078	1550	10×25
	560	0.058	1800	13×20
	680	0.055	1950	13×20
	820	0.048	2120	13×25
35(44)1V	1000	0.035	2380	13×30
	1500	0.032	3020	16×25
	1800	0.030	3450	16×30
	2200	0.027	3610	16×35
	2700	0.025	3760	18×30
	3300	0.024	4150	18×35
	3900	0.022	4360	18×40
	15	1.200	120	5×11
	47	0.430	300	6.3×12
	68	0.280	400	6.3×15
	82	0.250	470	8×12
	100	0.200	600	8×14
	120	0.190	680	8×16
	150	0.180	750	10×13
	180	0.160	950	10×16
	220	0.130	1150	10×20
50(63)1H	270	0.110	1380	10×20
	330	0.100	1520	10×25
	470	0.095	1750	13×20
	560	0.083	2030	13×20
	680	0.065	2380	13×25
	820	0.050	2620	13×30
	1000	0.036	2700	16×25
	1200	0.035	3100	16×25
	1500	0.033	3220	16×30
	1800	0.031	3500	16×35
	2200	0.029	3750	18×35
	2700	0.027	3930	18×40
	10	2.500	120	5×11
	22	1.700	200	6.3×12
	47	0.700	380	6.3×15
	56	0.450	520	8×12
63(79)1J	68	0.430	580	8×14
	82	0.400	630	8×16
	100	0.380	680	8×20
	120	0.320	730	10×16
	150	0.280	820	10×20
	220	0.140	910	10×25
	330	0.092	1420	13×20
	470	0.088	1710	13×25
	560	0.078	1800	13×30
	680	0.068	1980	16×25
	820	0.060	2420	16×30
	1000	0.045	2900	16×35
	1200	0.041	3300	18×30
	1500	0.034	3450	18×35
	1800	0.033	3620	18×40
80(100)1K	8.2	2.500	100	5×11
	18	1.600	180	6.3×12
	27	1.100	250	6.3×15
	33	0.800	330	8×12
	47	0.650	370	8×14
	56	0.430	480	8×16
	68	0.350	550	10×16
	82	0.320	580	10×16
	100	0.260	630	10×20
	150	0.200	700	10×25
	220	0.130	920	13×20

◆ Ratings for ZD Series

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	270	0.110	1080	13×25
	330	0.090	1210	13×25
	390	0.085	1350	13×30
	470	0.075	1510	16×25
	560	0.072	1650	16×30
	680	0.065	1730	16×35
	820	0.055	1960	16×40
	1000	0.041	2350	18×35
	1200	0.038	2800	18×40
100(125)2A	4.7	3.800	100	5×11
	10	1.800	150	6.3×12
	18	1.300	200	6.3×15
	22	0.950	250	8×12
	27	0.800	280	8×14
	33	0.700	300	8×16
	39	0.620	350	10×13
	47	0.550	400	10×16
	56	0.510	460	10×16
	68	0.450	520	10×20
	82	0.400	580	10×25
	100	0.310	700	10×25
	150	0.260	800	13×20
	180	0.180	950	13×25
	220	0.110	1120	13×30
	330	0.088	1320	16×25
	390	0.080	1650	16×30
	470	0.071	1850	16×35
	560	0.055	2050	16×40
	680	0.046	2250	18×35
	820	0.044	2360	18×40