

# Koshin

## KZF Miniature Aluminum Electrolytic Capacitors

### 105°C Use, Very Low Impedance, Long Life Capacitors, Series KZF.

Very Low Impedance, High Ripple Current

Long Life 2000-8000hours, 105°C

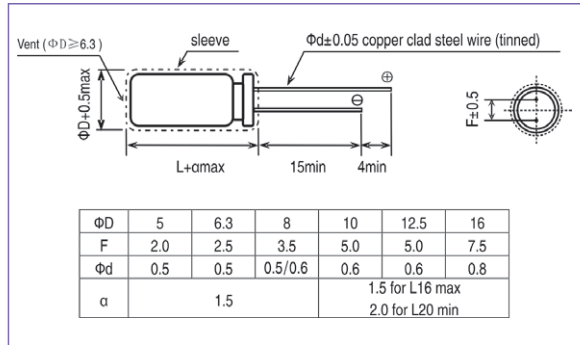
Suitable for High Frequency Switching Power Supply

RoHS Compliance

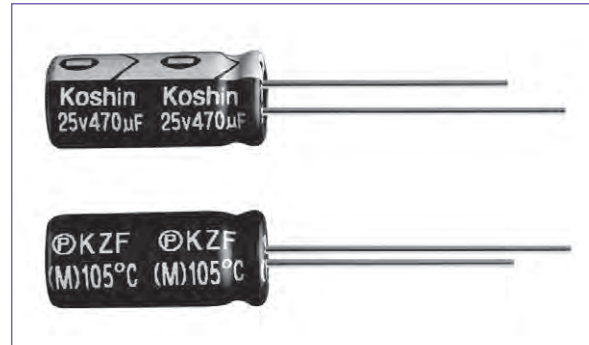
RoHS

Outline Drawing

Unit: mm



Photo



Marking color: white print on purple sleeve

### Specifications

No.	Item	Performance									
1	Temperature range (°C)	-40 to +105(6.3V~100V)									
2	Leakage current (μA)	Less than 0.01CV or 3 whichever is larger (after two minutes) C: Rated Capacitance (μF). V: Rated voltage (V) 20°C									
3	Capacitance tolerance (%)	±20 (20°C, 120Hz)									
4	Tangent of the loss angle (Tan δ)	Rated voltage (V)	6.3	10	16	25	35	50	63	100	20°C
Tan δ (max)		0.22	0.19	0.16	0.14	0.12	0.12	0.09	0.08	120Hz	
		0.02 is added to every 1000 μF increase over 1000 μF									
5	Low temperature characteristics	Rated voltage (V)	6.3	10	16	25	35	50	63	100	120Hz
Impedance ratio (max)		$Z_{(-25°C)}/Z_{(+20°C)}$	4	3	3	2	2	2	2	2	
		$Z_{(-40°C)}/Z_{(+20°C)}$	8	6	4	3	3	3	3	3	
6	Endurance (105°C) (Applied ripple current)	Size(Φ)	5 6 8 10 12.5 16 18								
		Time	2000 2000 3000 5000 7000 8000 8000								
		Leakage current	The initial specified value or less								
		Percentage of capacitance change	Within ±20% of initial value								
7	Shelf life(105°C)	Tangent of the loss angle	200% or less of the initial specified value								
		Test time	1000hours								
		Leakage current	The initial specified value or less								
		Percentage of capacitance change	Within ±20% of initial value								
8	Applicable standards	Tangent of the loss angle	200% or less of the initial specified value								
		JIS-C-5102 and JIS-C-5141									

### Coefficient of Frequency for Ripple Current

Frequency(Hz) Cap	50 · 60	120	1K	10K	100K
0.22-0.33	0.45	0.55	0.75	0.90	1.00
39-330	0.60	0.70	0.85	0.95	1.00
390-1000	0.65	0.75	0.90	0.98	1.00
1200-18000	0.75	0.80	0.95	1.00	1.00

### Coefficient of Temperature for Ripple Current

Temperature(°C)	45	60	85	95	105
Coefficient	2.41	2.20	1.70	1.25	1.00

## KZF Miniature Aluminum Electrolytic Capacitors

Dimension:  $\Phi$  DXL(mm)  
Ripple Current: mA/rms at 100KHz, 105°C

### DIMENSION & PERMISSIBLE RIPPLE CURRENT

V.DC Contents $\mu$ F	6.3V			10V			16V		
	$\Phi$ D $\times$ L	Impedance $\Omega$ /100KHz 20°C	Ripple Current (mA/rms, 105°C)	$\Phi$ D $\times$ L	Impedance $\Omega$ /100KHz 20°C	Ripple Current (mA/rms, 105°C)	$\Phi$ D $\times$ L	Impedance $\Omega$ /100KHz 20°C	Ripple Current (mA/rms, 105°C)
47							5X11	0.570	160
100				5X11	0.570	180	6.3X11	0.300	280
150	5X11	0.530	180	5X11	0.450	250			
220				6.3X11	0.240	320	6.3X15	0.180	355
330	6.3X11	0.220	360	6.3X15	0.200	360	8X11.5	0.130	650
470	6.3X15	0.180	380	8X11.5	0.150	650	8X16	0.093	750
							10X12.5	0.095	760
560							8X20	0.085	830
680	8X11.5	0.120	650	8X16	0.095	830	8X20	0.080	980
				10X12.5	0.095	850	10X16	0.070	1180
820	10X12.5	0.095	870						
1000	8X16	0.095	840	8X20	0.085	980	10X20	0.055	1290
				10X16	0.072	1180			
1200	8X20	0.090	1050	10X20	0.055	1400	10X25	0.049	1390
	10X16	0.070	1250						
1500	10X20	0.053	1400	10X25	0.048	1640	10X30	0.038	1820
							12.5X20	0.040	1800
1800	12.5x16	0.050	1450	10X30	0.038	1860			
2200	10X25	0.045	1645	10X30	0.036	1870	12.5X25	0.034	2060
				12.5X20	0.036	1850			
2700	10X30	0.040	1880				12.5X30	0.028	2470
							16X22	0.032	2290
3300	12.5X20	0.039	1750	12.5X25	0.032	2080	12.5X35	0.026	2720
3900	12.5X25	0.033	2130	12.5X30	0.026	2590	12.5X40	0.021	3190
							16X25	0.023	2610
							18X20	0.032	2460
4700	12.5X30	0.028	2440	12.5X35	0.023	2730	16X31.5	0.022	3250
							18x25	0.024	2950
5600	12.5X35	0.025	2620	12.5X40	0.020	2960	16x35.5	0.020	3360
	16x20	0.028	2260	16X25	0.022	2780	18x31.5	0.020	3520
6800	12.5X40	0.022	3310	16X31.5	0.020	3420	16x40	0.017	3880
	16X25	0.025	2910	18X25	0.022	3130			
8200	16X31.5	0.020	3430	16X35.5	0.019	3280	18x35	0.016	4010
				18X31.5	0.019	3540			
10000	16X35.5	0.017	3590	16X40	0.017	3810	18x40	0.015	4160
	18X25	0.020	3130	18X35.5	0.017	3860			

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Dimension:  $\Phi$  DXL(mm)

Ripple Current: mA/rms at 100KHz, 105°C

### DIMENSION & PERMISSIBLE RIPPLE CURRENT

V.DC Contents $\mu$ F	25V			35V			50V		
	$\Phi$ D×L	Impedance $\Omega$ /100KHz 20°C	Ripple Current (mA/rms, 105°C)	$\Phi$ D×L	Impedance $\Omega$ /100KHz 20°C	Ripple Current (mA/rms, 105°C)	$\Phi$ D×L	Impedance $\Omega$ /100KHz 20°C	Ripple Current (mA/rms, 105°C)
22							5X11	0.800	185
33				5X11	0.570	180			
47	5X11	0.570	180				6.3X11	0.570	260
56				6.3X11	0.300	320	6.3X11	0.350	300
100	6.3X11	0.350	300	6.3X15	0.220	420	8X11.5	0.250	475
150	6.3X15	0.250	400	8X11.5	0.150	620	10X12.5	0.150	650
220	8X11.5	0.150	580	8X16	0.100	750	10X16	0.090	700
				10X12.5	0.100	760			
270				8X20	0.090	870	10X20	0.084	950
330	8X16	0.100	750	10X16	0.072	1070	10X25	0.070	1250
	10X12.5	0.100	760						
470	8X20	0.080	960	10X20	0.054	1350	10X30	0.054	1640
	10X16	0.070	1090	12.5X16	0.060	1340	12.5X20	0.058	1550
560				10X25	0.048	1520	12.5X25	0.048	1870
680	10X20	0.055	1340	10X30	0.041	1760	12.5X30	0.040	2110
				12.5X20	0.042	1600			
820	10X25	0.047	1490				12.5X35	0.035	2360
1000	10X30	0.040	1790	12.5X25	0.033	2020	12.5X40	0.030	2630
	12.5X20	0.040	1680				16X25	0.035	2580
1200				12.5X30	0.028	2420	16X31.5	0.027	2860
				16X20	0.032	2310	18X25	0.030	2660
1500	12.5X25	0.033	2020	12.5X35	0.026	2650	16X35.5	0.025	3030
1800	12.5X30	0.027	2450	12.5X40	0.020	3060	16X40	0.022	3480
	16X20	0.032	2340	16X25	0.026	2810	18X31.5	0.025	3480
				18X20	0.031	2700			
2200	12.5X35	0.027	2605	16X31.5	0.022	3330	18X35.5	0.022	3600
	18X20	0.030	2580	18X25	0.024	3100			
2700	12.5X40	0.022	3180	16X35.5	0.021	3430	18X40	0.020	3720
	16X25	0.030	2800	18X31.5	0.022	3480			
3300	16X31.5	0.023	3250	16X40	0.019	3730			
	18X25	0.024	3020	18X35.5	0.020	3820			
3900	16X35.5	0.020	3490	18X40	0.017	4060			
	18X31.5	0.021	3650						
4700	16X40	0.018	3920						
	18X35.5	0.019	4110						
5600	18X35.5	0.017	4250						

## KZF Miniature Aluminum Electrolytic Capacitors

Dimension:  $\Phi$ DXL(mm)  
Ripple Current: mA/rms at 100KHz, 105°C

### DIMENSION & PERMISSIBLE RIPPLE CURRENT

V.DC Contents $\mu$ F	63V			100V		
	$\Phi$ D×L	Impedance $\Omega$ /100KHz 20°C	Ripple Current (mA/rms, 105°C)	$\Phi$ D×L	Impedance $\Omega$ /100KHz 20°C	Ripple Current (mA/rms, 105°C)
5.6				5X11	2.000	90
12	5X11	1.800	140	6.3X11	1.300	120
18				6.3X15	0.700	200
22	6.3X11	1.000	240	8X12	0.600	240
27				10X13	0.520	320
33				8X16	0.400	310
				10X16	0.380	440
39	6.3X15	0.600	330	8X20	0.320	420
56				10X20	0.310	550
68	8X12	0.340	400	10X25	0.240	720
100	8X16	0.260	530	10X30	0.200	880
	10X12.5	0.255	540	12.5X20	0.200	820
120	10X16	0.210	610	12.5X25	0.160	960
150	8X20	0.220	680			
180	10X20	0.150	850	12.5X30	0.120	1180
				16X20	0.160	1160
220	10X25	0.135	1030	12.5X35	0.092	1360
				16X25	0.088	1340
270				12.5X40	0.070	1560
				18X20	0.095	1340
330	10X30	0.095	1280	16X31.5	0.066	1660
	12.5X20	0.090	1260	18X25	0.075	1620
390	12.5X25	0.075	1480	16X35.5	0.060	1880
				18X31.5	0.065	1780
470	12.5X30	0.060	1670	16X40	0.048	2020
	16X20	0.063	1620			
560				18X35.5	0.055	1900
680	12.5X35	0.050	1860	18X40	0.045	1980
	16X25	0.060	1820			
820	12.5X40	0.046	2160			
	16X31.5	0.046	2230			
	18X25	0.046	2230			
1000	16X35.5	0.040	2460			
1200	16X40	0.035	2650			
	18X31.5	0.033	2720			
1500	18X35.5	0.032	2850			
1800	18X40	0.028	3020			