

### FEATURES

- Cylindrical leadless type for surface mounting.
- Very low impedance and high current at 100KHz.
- Suitable for DC-DC converter, DC-AC inverter, etc.
- New, expanded CV range.
- Solvent resistant (2 minutes).
- Designed for automatic mounting and reflow soldering.



### PART NUMBERING

Part Number Example: MXZZ-025/331M8X10TR13F									
MXZZ	-	6R3	/	331	M	6X8	TR	13	F
Type		Rated DC Voltage ***		Capacitance Code (µF)*	Tolerance Code	Size, round to nearest whole #	Package Code**	Reel Size	RoHs Compliant

\* Capacitance Code: First two digits represent significant figure, third digit represents multiplier (number of zeros).  
 \*\* Package Code: TR = Tape & Reel, TA = Tape & Ammo      \*\*\* (NOTE "R" USED AS DECIMAL POINT in voltage)

### SPECIFICATIONS

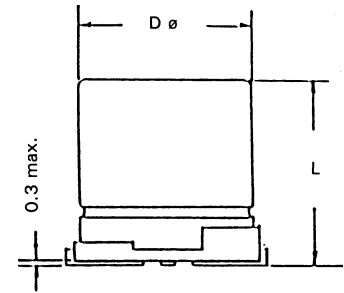
Operating Temperature Range	-55°C ~ +105°C.							
Temperature Characteristics (120Hz)	Impedance Ratio							
	Rated Voltage (WVDC)	6.3	10	16	25	35	50	
	Z (-40°C / Z (+20°C)	3	2	2	2	2	2	
	Z (-55°C) / Z (+20°C)	5	4	4	3	3	3	
Voltage Range	6.3VDC ~ 50VDC.							
Surge Voltage (20°C, 120Hz)	VDC	8	13	20	32	44	63	
Capacitance Range	4.7µF ~ 3300µF.							
Capacitance Tolerance	±10% & ±20%.							
Maximum Dissipation Factor (20°C, 120Hz)	DIAMETER		6.3	10	16	25	35	50
	DF %	4ø ~ 6.3ø	24	20	16	14	12	12
		8ø ~ 16	28	24	20	16	14	14
Maximum Leakage Current (20°C) (after 2 minutes)	0.01CV or 3µA, whichever is greater.							
Load Life Test (105°C, 2000 hours) (≤6.3mm diam & 10x7.7 105°C 1000 hours)	Capacitance Change	Within ±25% of initial measured value.						
	DF	Less than 200% of specific value.						
	Leakage Current	Less than specified value.						

### STANDARD PRODUCT TABLE (dØ X L(mm))

Capacitance (µF)	WVDC					
	6.3	10	16	25	35	50
4.7					4 x 6.0	4 x 6.0
10				4 x 6.0	5 x 6.0	6.3 x 6.0
15			4 x 6.0	5 x 6.0	5 x 6.0	6.3 x 6.0
22		4 x 6.0	5 x 6.0	5 x 6.0	5 x 6.0	6.3 x 6.0
27	4 x 6.0					
33		5 x 6.0		6.3 x 6.0	6.3 x 6.0	6.3 x 7.7
47	5 x 6.0		6.3 x 6.0	6.3 x 6.0	6.3 x 6.0	6.3 x 7.7
56	5 x 6.0			6.3 x 6.0		
68		6.3 x 6.0	6.3 x 6.0	6.3 x 6.0	6.3 x 7.7	
100	6.3 x 6.0		6.3 x 6.0	6.3 x 7.7		8 x 10.2
120		6.3 x 6.0				
150	6.3 x 6.0		6.3 x 7.7	8 x 10.2		10 x 10.2
220	6.3 x 6.0	6.3 x 7.7	6.3 x 7.7		8 x 10.2	10 x 10.2
330	6.3 x 7.7	8 x 10.2		8 x 10.2	10 x 10.2	
470	8 x 10.2		8 x 10.2	10 x 10.2		
680	10 x 7.7		10 x 10.2		12.5 x 13.5	
1000	8 x 10.2	10 x 10.2		12.5 x 13.5		16 x 16.5
1500	10 x 10.2		12.5 x 13.5		16 x 16.5	
2200		12.5 x 13.5		16 x 16.5		
3300	12.5 x 13.5		16 x 16.5			
4700		16 x 16.5				
6800	16 x 16.5					

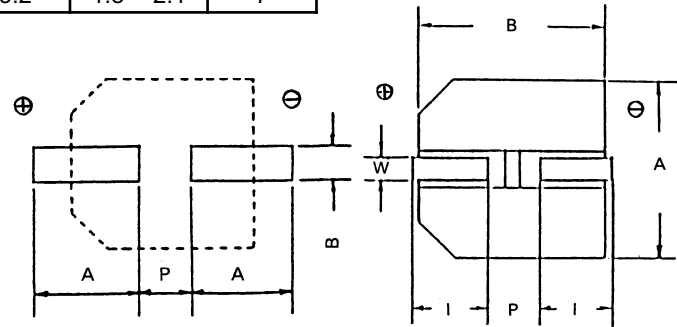
### DIMENSIONS (mm)

Case Size	d $\phi$ $\pm$ 0.5	L Max.	A $\pm$ 0.2	B $\pm$ 0.2	I $\pm$ 0.2	W	P $\pm$ 0.2
4 x 6.0	4	6.3	4.3	4.3	1.8	0.5 ~ 0.8	1
5 x 6.0	5	6.3	5.3	5.3	2.1	0.5 ~ 0.8	1.4
6.3 x 6.0	6.3	6.3	6.6	6.6	2.5	0.5 ~ 0.8	2.2
6.3 x 7.7	6.3	8	6.6	6.6	2.5	0.5 ~ 0.8	2.2
8 x 10.2	8	10.5	8.3	8.3	2.9	0.7 ~ 1.0	3.2
10 x 7.7	10	8	10.3	10.3	3.2	1.1 ~ 1.4	4.6
10 x 10.2	10	10.5	10.3	10.3	3.2	1.1 ~ 1.4	4.6
12.5 x 13.5	12.5	13.8	12.8	12.8	4.5	1.1 ~ 1.4	4.8
16 x 16.5	16	18.8	16.3	16.3	5.2	1.8 ~ 2.1	7



### RECOMMENDED LAND PATTERN

Case Size	A	B	P
4 x 6.0	2.6	1.8	1
5 x 6.0	2.6	1.8	1.4
6.3 x 6.0	3	1.8	2.1
6.3 x 7.7	3	1.8	2.1
8 x 10.2	4.1	2.1	2.8
10 x 7.7	4.4	2.5	4.3
10 x 10.2	4.4	2.5	4.3
12.5 x 13.5	5.8	2.5	4.3
16 x 16.5	6.5	5	6.6



### MAXIMUM RIPPLE (mA rms @ 120Hz & 105°C)

Cap. (μF)	VVDC					
	6.3	10	16	25	35	50
4.7					80	60
10				80	150	165
15			80	150	150	
22		80	150	150	150	165
27	80					
33		150		230	230	195
47	150		230	230	230	195
56	150			230		
68		230	230		280	
100	230		230	280		300
120		230				
150	230		280	450	450	620
220	230	280	280	450	450	620
330	280	450	450	450	670	
470	450	450	450	670	900	
680	450		670		900	
1000	450			900		790
1500	670		900		1250	
2200		900		1250		
3300	900		1250			
4700		1250				
6800	1250					

### MAXIMUM IMPEDANCE (Ω AT 20°C & 100KHZ)

Cap. (μF)	VVDC					
	6.3	10	16	25	35	50
4.7					1.8	2.9
10				1.8	0.76	0.88
15			1.8	0.76	0.76	
22		1.8	0.76	0.76	0.76	0.88
27	1.8					
33		0.76		0.44	0.44	0.68
47	0.76		0.44	0.44	0.44	0.68
56	0.76			0.44		
68		0.44	0.44		0.34	0.39
100	0.44		0.44	0.34		0.39
120		0.44				
150	0.44		0.34	0.17	0.17	0.21
220	0.44	0.34	0.34	0.17	0.17	0.21
330	0.34	0.17	0.17	0.17	0.09	0.14
470	0.17	0.17	0.17	0.09	0.066	
680	0.17		0.09		0.066	
1000	0.17	0.09		0.066		0.078
1500	0.09		0.066		0.052	
2200		0.066		0.052		
3300	0.066		0.052			
4700		0.052				
6800	0.052					