

# MXR 12

High Capacitance X7R Multilayer Capacitors

## Features

- Capacitance Range: 5000pF to 0.10 $\mu$ F
- Operating Temperature: -55°C to +125°C
- Rated Voltage: 50V
- Encapsulation Options for Leaded MXR12 Series
- High Permittivity Low Loss Dielectric
- X7R Temperature Characteristics
- Low ERS/ESL
- Low Loss



## Applications:

Typical Functional Applications: bypass, coupling, dc blocking and in switch mode power supplies and other high power circuits.

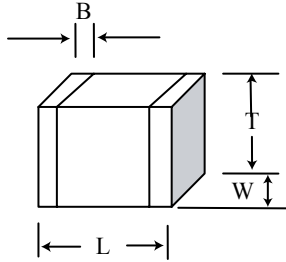
## AFM Part Number Code

<b>M</b> Product Series: M: High Frequency	<b>X</b> Dielectrics: X: X7R	<b>R</b> Product Type: R: Chip	<b>12</b> Chip Size: 12: 1111	<b>W</b> Termination Code: A: Axial Wire B: Axial Ribbon C: Pd/Ag Term G: Ag Term, Ni/Au Plated N: Non Magnetic Term (Ag Term, Cu/Sn Plated) P: Solder Dipped W Term in 60/40 Sn/Pb Q: Radial Wire R: Radial Ribbon T: Ag Term, Ni/100% Sn Plated (Pb Free) W: Ag Term, Ni Barrier, 90/10 Sn/Pb Plated	<b>101</b> Capacitance Code: 1st two digits are significant; Third digit denotes number of zero(s); R=Decimal point 2R0=2.0pF 101=100pF	<b>K</b> Tolerance: K: $\pm$ 10% M: $\pm$ 20% N: $\pm$ 30%	<b>B</b> Voltage: B: 50 Vdc	<b>C</b> Test Code: C: Commercial Test M: Hi-Rel S: Special (Customer Defined)	<b>B</b> Marking: B: Not Marked M: Marked (Cap code and tolerance) S: Special Marking	<b>B</b> Packaging: B: Bulk T: Tape & Reel W: Waffle Pack
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## Chip Dimensions



Length	.110in (2.79mm)
Width	.110in (2.79mm)
Thickness	.102in (2.59mm)
Band	.015in (0.38mm)

## Standard Capacitance Values

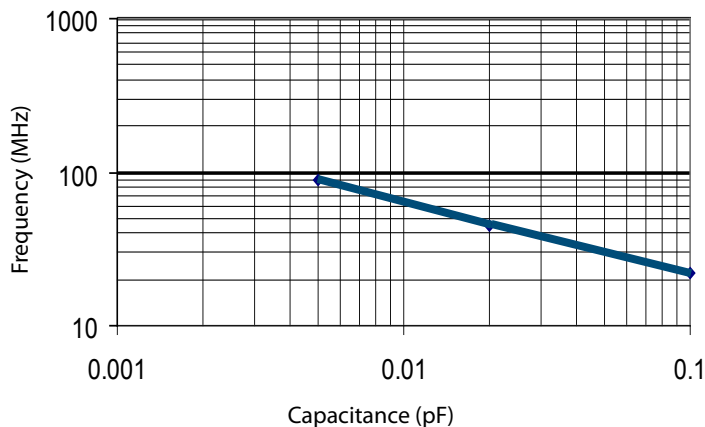
CAP Code	Cap	Tol	WVdc	CAP Code	Cap	Tol	WVdc
502	5000pF	K, M, N	50	273	0.027 $\mu$ F	K, M, N	50
562	5600pF			333	0.033 $\mu$ F		
682	6800pF			393	0.039 $\mu$ F		
822	8200pF			473	0.047 $\mu$ F		
103	0.010 $\mu$ F			503	0.050 $\mu$ F		
123	0.012 $\mu$ F			563	0.056 $\mu$ F		
153	0.015 $\mu$ F			683	0.068 $\mu$ F		
183	0.018 $\mu$ F			823	0.082 $\mu$ F		
203	0.020 $\mu$ F			104	0.100 $\mu$ F		
223	0.022 $\mu$ F						

## Specification and Performance

Piezoelectric and Aging Effect:	3% Per Decade
Temperature Range:	-55°C to +125°C
Temperature Coefficient of Capacitance:	0 $\pm$ 15% Max
Dissipation Factor:	0.025 max at 1KHz and +25°C
Insulation Resistance (IR, at Rated Voltage):	>10 <sup>4</sup> M $\Omega$ at +25°C >10 <sup>3</sup> M $\Omega$ at +125°C
Dielectric Withstand Voltage (DWV):	250% of rated WVDC for 5 secs
Capacitance Drift:	$\pm$ 0.02% or $\pm$ 0.02pF, whichever is greater
Dielectric Absorption:	$\leq$ 2%

## Performance Curve

Resonance vs. Capacitance



ESR vs. Capacitance

