

# X Series Crystal



- 2mm X 2.5mm 4 Pads Ceramic Package
- Ultra-miniature Profile
- RoHS Compliant
- Tape and Reel Packaging



Frequency Range	16.000MHZ to 60.000MHZ
Frequency Tolerance / Stability	(See Part Number Guide for Options)
Operating Temperature Range	(See Part Number Guide for Options)
Storage Temperature	-40°C to +85°C
Aging	±2ppm / per year
Shunt Capacitance	3pF Max
Load Capacitance	10pF Standard (See Part Number Guide for Options)
Equivalent Series Resistance	See ESR Chart
Drive Level	100µW Max
Insulation Resistance	500 Megaohms Min at 100VDC

## Environmental & Mechanical Detail

Shock	MIL-STD-883, Method 2002 Cond B
Solderability	MIL-STD-883, Method 2003
Solvent Resistance	MIL-STD-202, Method 215
Vibration	MIL-STD-883, Method 2007, Cond A
Gross Leak Test	MIL-STD-883, Method 1014, Cond C
Fine Leak Test	MIL-STD-883, Method 1014, Cond A
MSL	Level 1 per IPC/JEDEC J-STD 20

## Marking Detail

First Line = MXX.X (not to exceed 5 characters)		
M	=	MMD
XX.X	=	Device Frequency (four digits including decimal point)
Second Line = SYWW (not to exceed 5 characters)		
S	=	Internal Code
YWW	=	Date Code (Year/Month)



**MMD Monitor/Quartztek**  
 30400 Esperanza, Rancho Santa Margarita, CA, 92688  
 Phone: (949) 709-5075, Fax: (949) 709-3536, [www.mmdcomp.com](http://www.mmdcomp.com)  
 Sales@mmdcomp.com

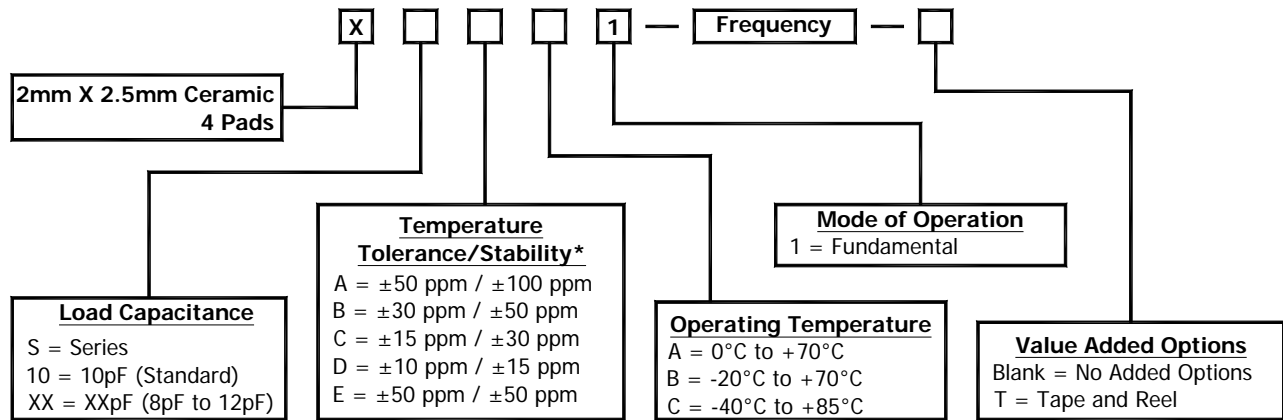


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# ESR Chart

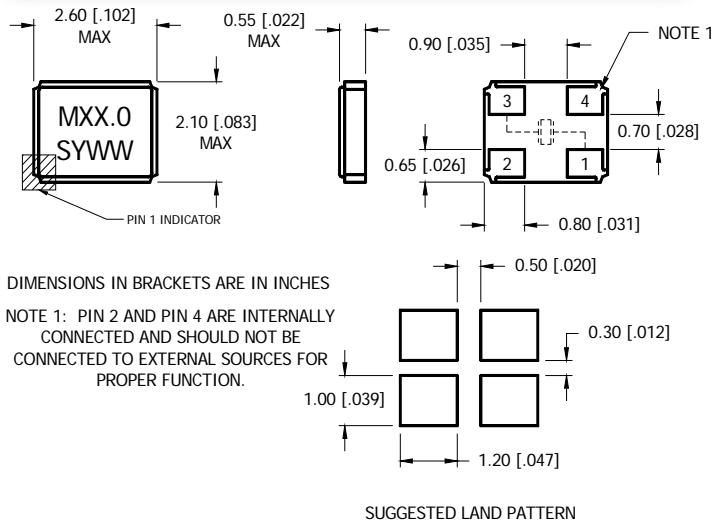
Frequency Range	ESR (Ohms)	Mode / Cut
16.000MHZ to 19.999MHZ	120 Max	Fund / AT
20.000MHZ to 29.999MHZ	80 Max	Fund / AT
30.000MHZ to 60.000MHZ	50 Max	Fund / AT

## Part Number Guide

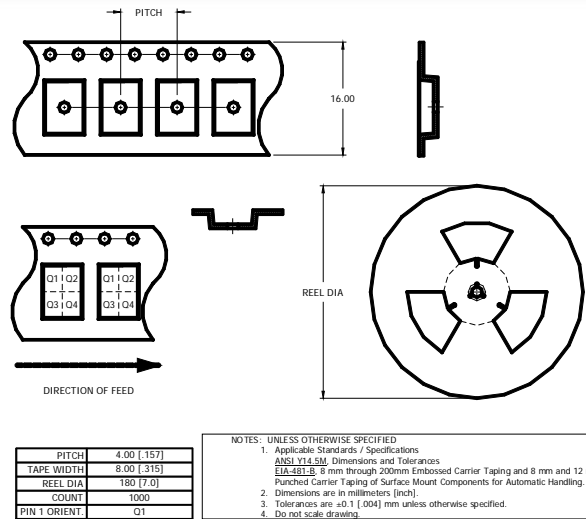


\* Please consult with MMD sales department for any other parameters or options.

## Mechanical Details



## Tape & Reel



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