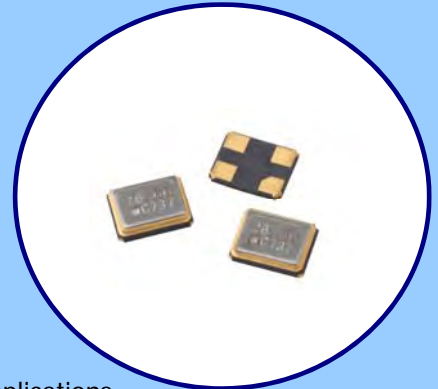




**FEATURES**

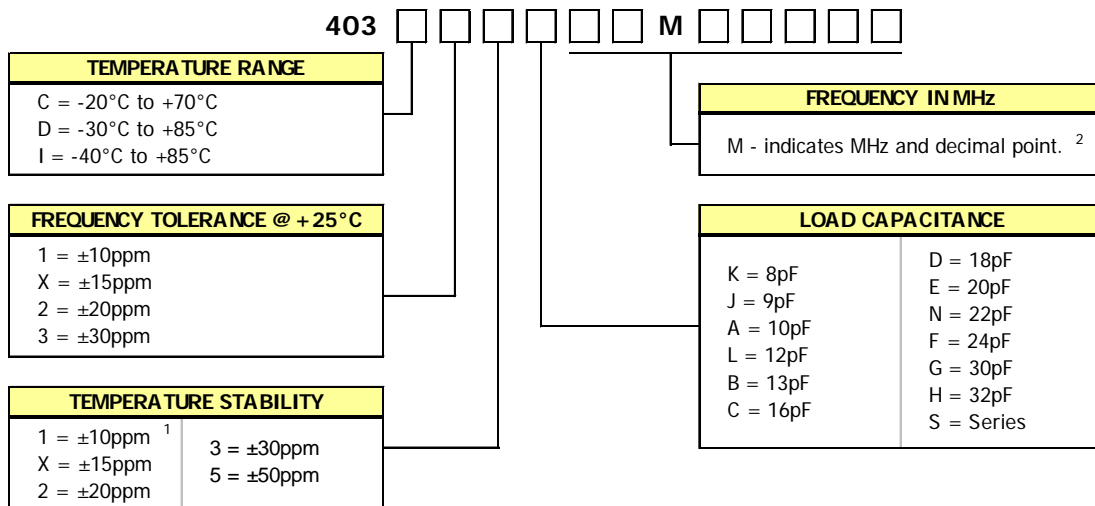
- Standard 3.2mm x 2.5mm Seam Weld Package
- Fundamental Crystal Design
- Frequency Range 10 – 60MHz
- Frequency Tolerance,  $\pm 30\text{ppm}$  Standard
- Frequency Stability,  $\pm 30\text{ppm}$  Standard
- Operating Temperature to  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$
- Stable Frequency Over Temperature and Drive Level
- Tape & Reel Packaging Standard, EIA-481
- **RoHS/Green Compliant [6/6]**



**APPLICATIONS**

Model 403 is a low cost quartz resonator used in a wide range of commercial applications including WLAN/WiMax/WiFi, A/V, Bluetooth, ZigBee and USB interfaces, notebooks, computer peripherals and portable equipment.

**ORDERING INFORMATION**

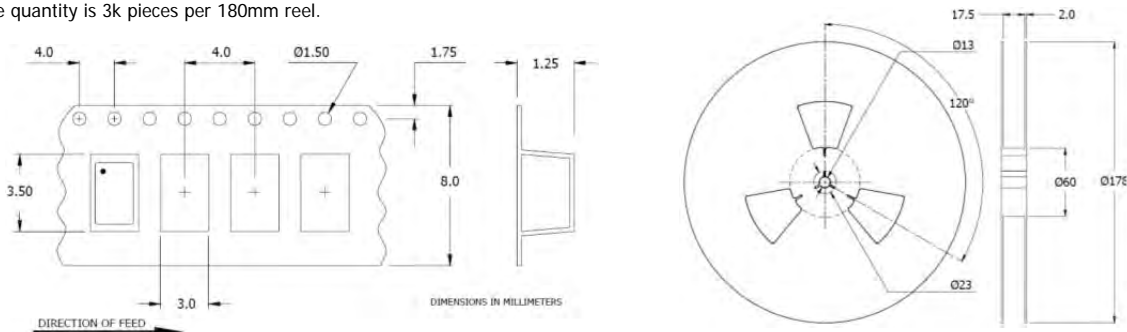


1. Available with temperature range codes C and D.
2. Frequency is recorded with two leading digits before the 'M' and 5 significant digits after the 'M' [including zeros].  
[Ex. XXMXXXXX (16M38400), XXMXXXXX (14M31818)]

**Not all performance combinations and frequencies may be available.**  
Contact your local CTS Representative or CTS Customer Service for availability.

**PACKAGING INFORMATION [Reference]**

Device quantity is 3k pieces per 180mm reel.

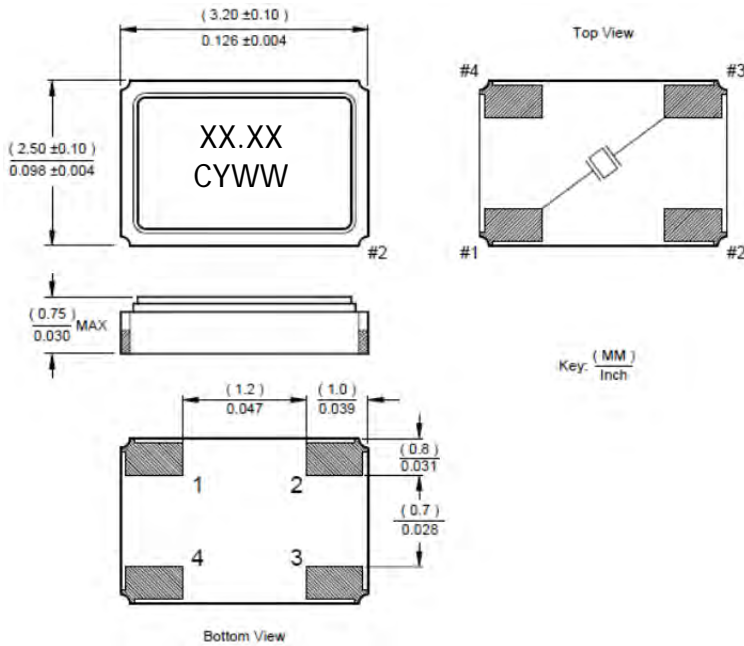


**ELECTRICAL CHARACTERISTICS**

	PARAMETER	VALUE	
<b>ELECTRICAL PARAMETERS</b>	Frequency Range	10MHz to 60MHz	
	Operating Mode	Fundamental	
	Crystal Cut	AT-Cut	
	Frequency Tolerance @ +25°C	±30ppm, Standard	
	Frequency Stability Tolerance [Operating Temperature Range, Referenced to +25°C Reading]	±30ppm, Standard	
	Operating Temperature Ranges	-20°C to +70°C	
		-30°C to +85°C	-40°C to +85°C
	Equivalent Series Resistance [Maximum]	10MHz - <14MHz	120 Ohms
		14MHz - <16MHz	100 Ohms
		16MHz - <20MHz	80 Ohms
		20MHz - 60MHz	60 Ohms
	Load Capacitance	See Ordering Information	
	Shunt Capacitance [C <sub>0</sub> ]	3.0pF Typical, 5.0pF Maximum	
Drive Level	10µW Typ., 200µW Max.		
Aging @ +25°C	±3ppm/yr Typical		
Insulation Resistance	500M Ohms @ DC 100V		
Storage Temperature Range	-40°C to +100°C		

**MECHANICAL SPECIFICATIONS**

**PACKAGE DRAWING**



**MARKING INFORMATION**

1. XX.XX – Frequency marked with 2 significant digits after the decimal.
2. C – CTS and Pin 1 identifier.
3. YWW – Date Code, Y – Last Digit of Year, WW – Week.

**NOTES**

1. Complete CTS part number, frequency value, date code and manufacturing site code information must appear on reel and carton labels.
2. Terminations #2, #4 and the metal lid are connected internally. End user may connect these pins to circuit ground for EMI suppression.
3. Termination pads (e4); barrier plating is nickel [Ni] with gold [Au] flash plate.
4. Reflow conditions per JEDEC J-STD-020; +260°C maximum, 10 seconds.
5. MSL = 1.

**SUGGESTED SOLDER PAD GEOMETRY**

