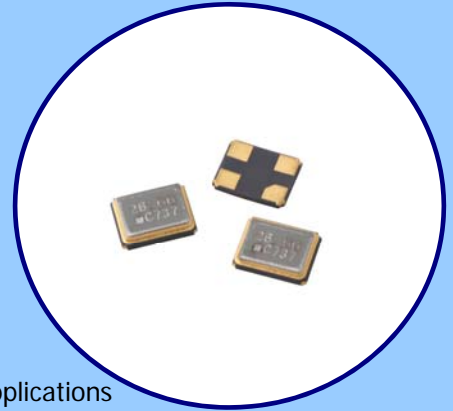




FEATURES

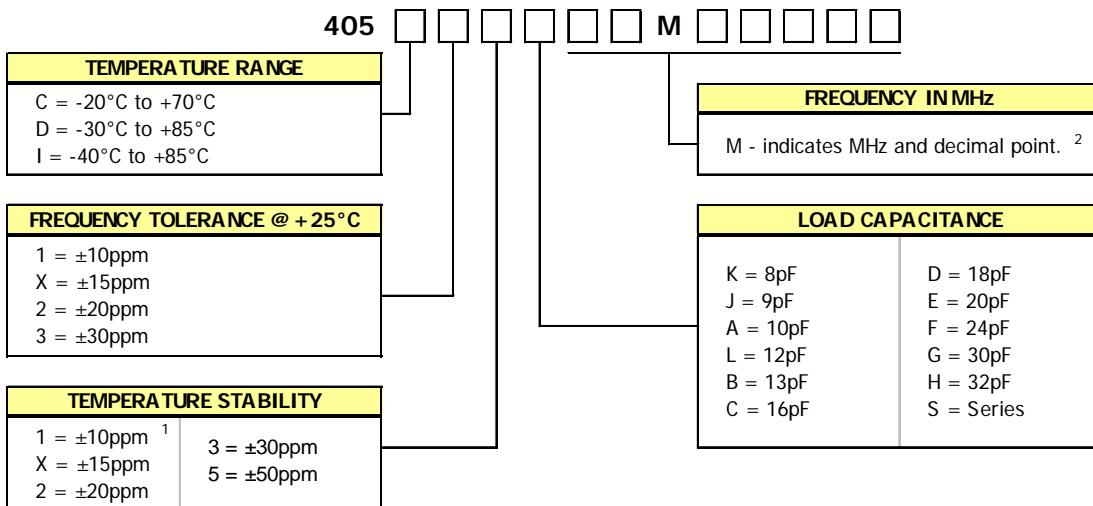
- Standard 5.0mm x 3.2mm Seam Weld Package
- Fundamental Crystal Design
- Frequency Range 6.76438 – 54MHz
- Frequency Tolerance, ± 30 ppm Standard
- Frequency Stability, ± 30 ppm Standard
- Operating Temperature to -40°C to $+85^{\circ}\text{C}$
- Stable Frequency Over Temperature and Drive Level
- Tape & Reel Packaging Standard, EIA-481
- **RoHS/Green Compliant [6/6]**



APPLICATIONS

Model 405 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

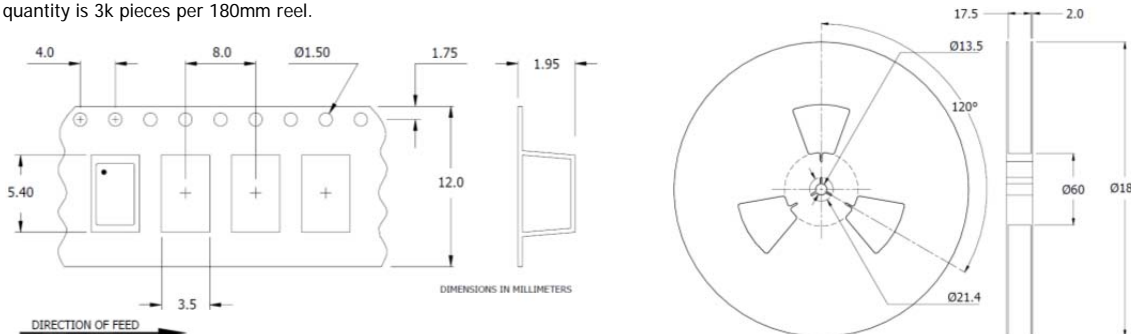


1. Available with temperature range codes C and D.
2. Frequency is recorded with two leading digits before the 'M' and 5 significant digits after the 'M' [including zeros].
[Ex. XXMXXXXX (16M38400), XXMXXXXX (14M31818)]

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.

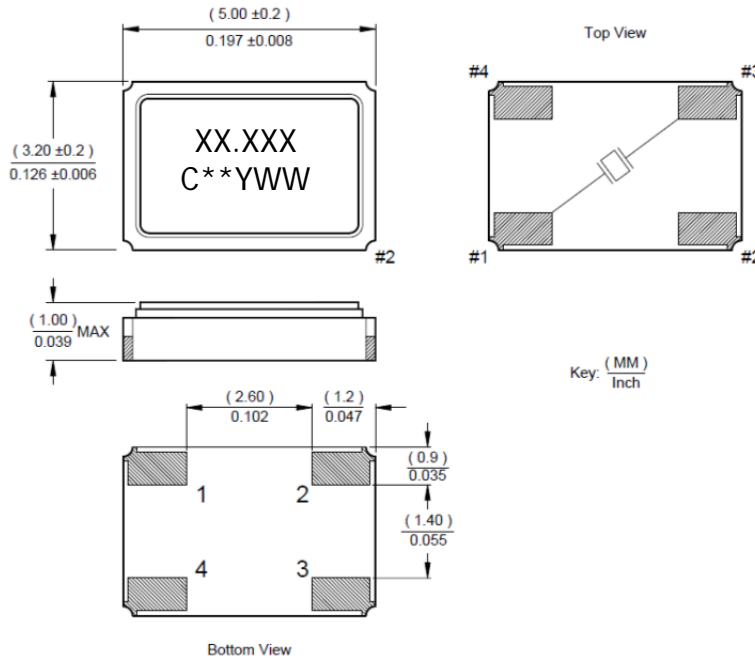


ELECTRICAL CHARACTERISTICS

	PARAMETER	VALUE	
ELECTRICAL PARAMETERS	Frequency Range	6.76438MHz to 54MHz	
	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]	6.76438MHz - <11MHz	80 Ohms
		11MHz - <15MHz	60 Ohms
		15MHz - <35MHz	50 Ohms
		35MHz - 54MHz	40 Ohms
	Load Capacitance	See Ordering Information	
	Shunt Capacitance [C ₀]	5.0pF Typical, 7.0pF 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



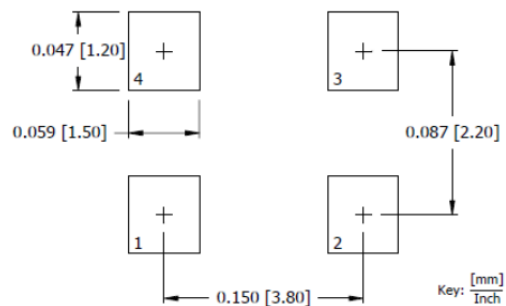
MARKING INFORMATION

1. XX.XXX – Frequency marked with 3 significant digits after the decimal.
2. C – CTS and Pin 1 identifier.
3. ** - Manufacturing Site Code.
4. 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



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[FL2000085](#) [9B-15.360MBBK-B](#) [9C-7.680MBBK-T](#) [ASH7K-32.768KHZ](#) [AT-41.600MAGQ-T](#) [BTD1062E05A-513](#) [LFX TAL066198Cutt](#)
[9C-14.31818MBBK-T](#) [FA-238 50.0000MB30X-K3](#) [FC-12M 32.7680KA-AC3](#) [SSPT7F-9PF20-R](#) [FX325BS-38.88EEM1201](#)
[LFX TAL065253Cutt](#) [LFX TAL066431Cutt](#) [XT9S20ANA14M7456](#) [XT9SNLANA16M](#) [646G-24-2](#) [7A-24.576MBBK-T](#) [7B-30.000MBBK-T](#)
[WX26-32.768K-6PF](#) [9B-14.31818MBBK-B](#) [CD1AM](#) [7B-25.000MAAE-T](#) [7A-14.31818MBBK-T](#) [6504-202-1501](#) [6526-202-1501](#) [FA-118T](#)
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[BTL-20-513](#) [TSX-3225 24.0000MF15X-AC](#) [TSX-3225 16.0000MF18X-AC](#) [BTJ120E02C](#) [BTL-12-513](#) [7A-10.000MBBK-T](#) [7A-](#)
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