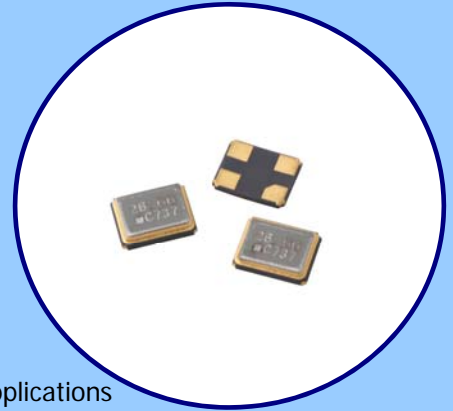




FEATURES

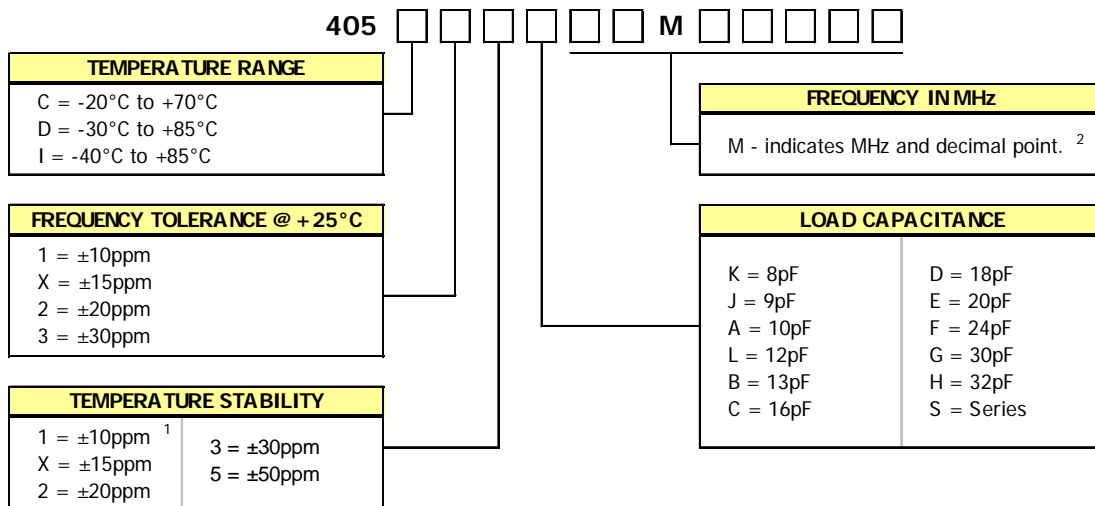
- Standard 5.0mm x 3.2mm Seam Weld Package
- Fundamental Crystal Design
- Frequency Range 6.76438 – 54MHz
- Frequency Tolerance, ± 30 ppm Standard
- Frequency Stability, ± 30 ppm Standard
- Operating Temperature to -40°C to $+85^{\circ}\text{C}$
- Stable Frequency Over Temperature and Drive Level
- Tape & 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

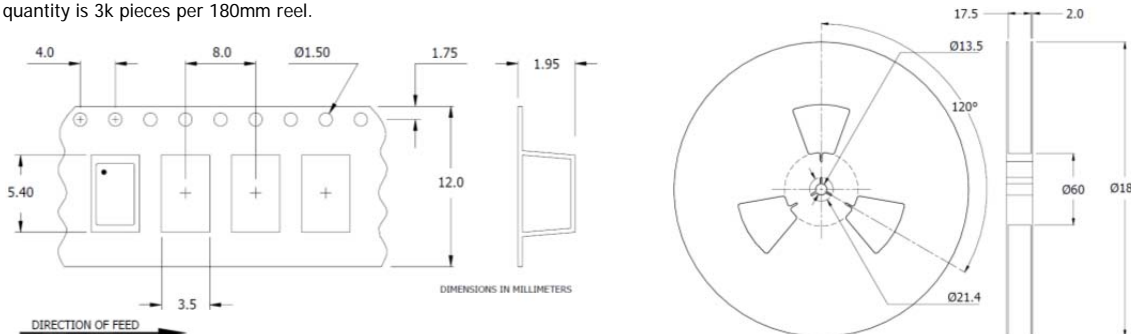


1. Available with temperature range codes C and D.
2. Frequency is recorded with two leading digits before the 'M' and 5 significant digits after the 'M' [including zeros].
[Ex. XXMXXXXX (16M38400), XXMXXXXX (14M31818)]

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.

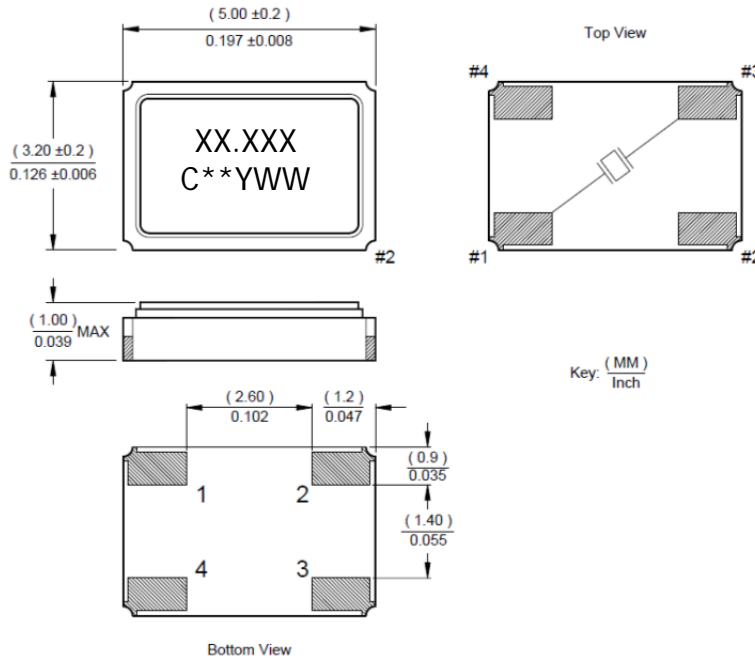


ELECTRICAL CHARACTERISTICS

	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



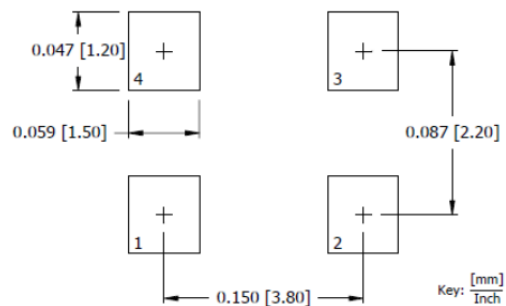
MARKING INFORMATION

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



Mouser Electronics

Authorized Distributor

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CTS:

[405C35B11M05920](#) [405C35B12M00000](#) [405C35B12M80000](#) [405C35B13M00000](#) [405C35B14M31818](#)
[405C35B14M40000](#) [405C35B14M74560](#) [405C35B15M36000](#) [405C35B16M00000](#) [405C35B16M36800](#)
[405C35B19M20000](#) [405C35B19M68000](#) [405C35B20M00000](#) [405C35B24M00000](#) [405C35B25M00000](#)
[405C35B26M00000](#) [405C35B32M00000](#) [405C35B33M00000](#) [405C35B40M00000](#) [405C35B44M00000](#)
[405C24A13M00000](#) [405C35A12M00000](#) [405C35A13M00000](#) [405I35D12M00000](#) [405C35E16M00000](#)
[405I35D16M00000](#) [405C35C24M00000](#) [405I35S13M00000](#) [405I35S16M00000](#) [405C35C48M00000](#)
[405C35D25M00000](#) [405C35D12M00000](#) [405I35E18M43200](#) [405C35B27M00000](#) [405I35A40M00000](#)
[405I35D25M00000](#) [405C35F24M00000](#) [405I35B24M00000](#) [405I35D24M00000](#) [405C35L16M38400](#)
[405C35E40M00000](#) [405C35L16M66660](#) [405I35B16M00000](#) [405I35B25M00000](#) [405C35E12M00000](#)
[405I35A19M20000](#) [405C35C12M00000](#) [405C35C24M57600](#) [405C35E25M00000](#) [405I35E25M00000](#)
[405I35D18M43200](#) [405I35A25M00000](#) [405C35B48M00000](#) [405C35B18M43200](#) [405C35B13M56000](#)
[405C35B30M00000](#) [405C11A11M05920](#) [405C11A12M28800](#) [405C11A12M80000](#) [405C11A13M00000](#)
[405C11A13M50000](#) [405C11A13M56000](#) [405C11A14M40000](#) [405C11A14M74560](#) [405C11A15M36000](#)
[405C11A16M38400](#) [405C11A16M80000](#) [405C11A18M43200](#) [405C11A19M20000](#) [405C11A19M44000](#)
[405C11A19M68000](#) [405C11A19M80000](#) [405C11A22M00000](#) [405C11A24M57600](#) [405C11A26M00000](#)
[405C11A28M63636](#) [405C11A29M49120](#) [405C11A30M00000](#) [405C11A44M00000](#) [405C11A48M00000](#)
[405C35D10M00000](#) [405C35D12M28800](#) [405C35D13M00000](#) [405C35D13M82400](#) [405C35D14M31818](#)
[405C35D15M36000](#) [405C35D16M38400](#) [405C35D18M43200](#) [405C35D24M57600](#) [405C35D32M00000](#)
[405C35D36M00000](#) [405C35D50M00000](#) [405C35E08M00000](#) [405C35E12M28800](#) [405C35E13M00000](#)
[405C35E13M82400](#) [405C35E14M31818](#) [405C35E15M36000](#) [405C35E16M38400](#) [405C35E18M43200](#)