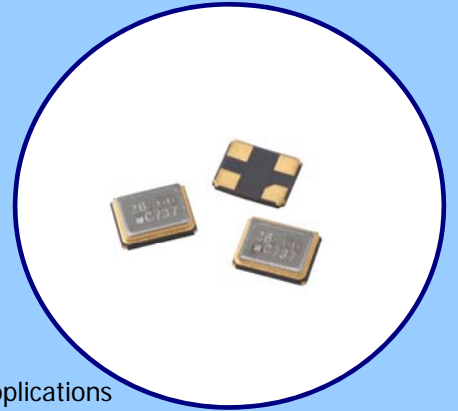


FEATURES

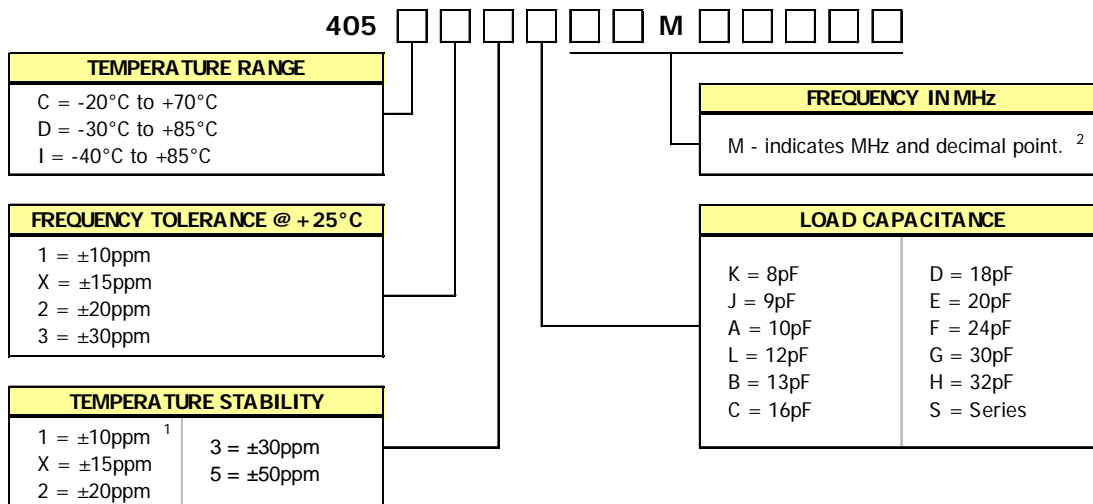
- Standard 5.0mm x 3.2mm Seam Weld Package
- Fundamental Crystal Design
- Frequency Range 6.76438 – 54MHz
- Frequency Tolerance, $\pm 30\text{ppm}$ Standard
- Frequency Stability, $\pm 30\text{ppm}$ Standard
- Operating Temperature to -40°C to $+85^{\circ}\text{C}$
- Stable Frequency Over Temperature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

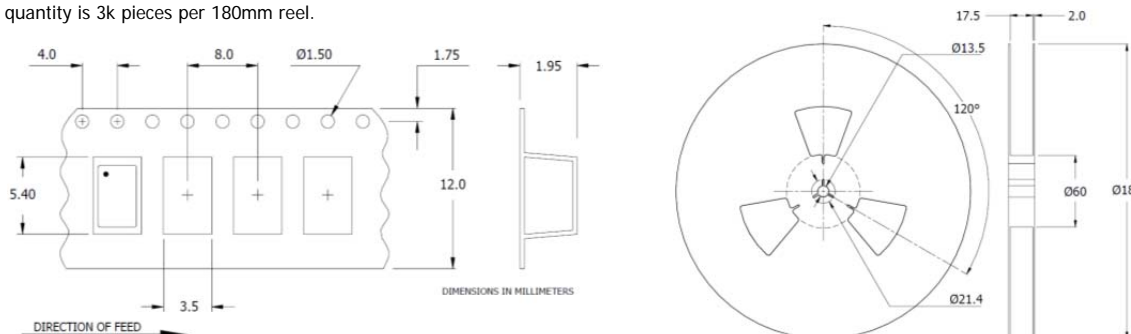
[Ex. XXMXXXXX (16M38400), XXMXXXXX (14M31818)]

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.

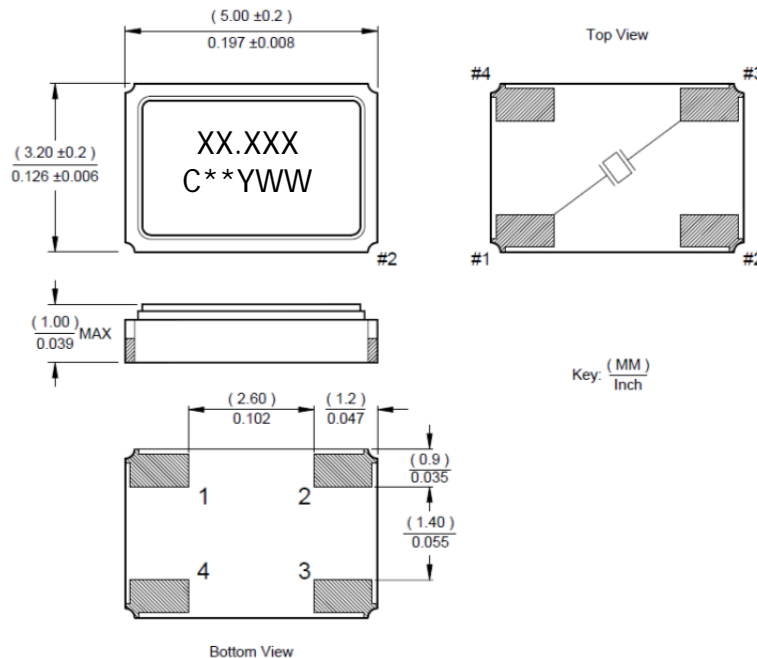


ELECTRICAL CHARACTERISTICS

| ELECTRICAL PARAMETERS | PARAMETER | VALUE | |
|-----------------------|---|------------------------------|----------------|
| | 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

