Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

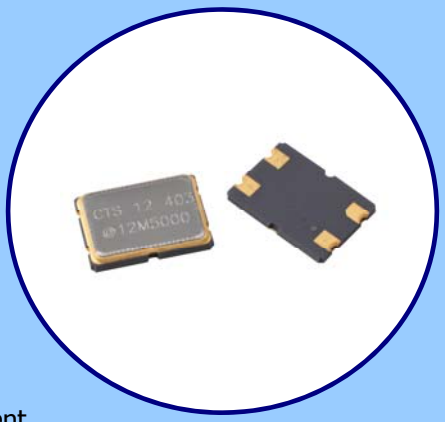
Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

Model 407

Surface Mount Quartz Crystal

FEATURES

- Standard 7.0mm x 5.0mm Ceramic Surface Mount Package
- Fundamental and 3rd Overtone Crystal Design
- Frequency Range 6 – 133MHz
- Frequency Tolerance, ± 30ppm Standard
- Frequency Stability, ± 50ppm Standard
- Operating Temperature to -40°C to + 85°C
- Stable Frequency Over Temperature and Drive Level
- Tape & Reel Packaging Standard, EIA-481
- RoHS/ Green Compliant [6/ 6]



APPLICATIONS

Model 407 is a seam sealed ceramic packaged quartz resonator offering excellent performance for a wide variety of applications including; wireless communications, broadband access, WLAN/WiMax/WIFI, test and measurement, portable equipment and computer peripherals.

ORDERING INFORMATION

407 ☐☐☐☐☐☐☐ M ☐☐☐☐

MODE OF OSCILLATION

F = Fundamental
T = 3rd Overtone

FREQUENCY IN MHz

M - indicates MHz and decimal point. [1,2]

FREQUENCY TOLERANCE @+ 25°C

1 = ±10ppm	2 = ±20ppm
X = ±15ppm	3 = ±30ppm

LOAD CAPACITANCE

K = 8pF	D = 18pF
J = 9pF	E = 20pF
A = 10pF	F = 24pF
L = 12pF	G = 30pF
C = 16pF	S = Series

TEMPERATURE STABILITY/ TEMPERATURE RANGE

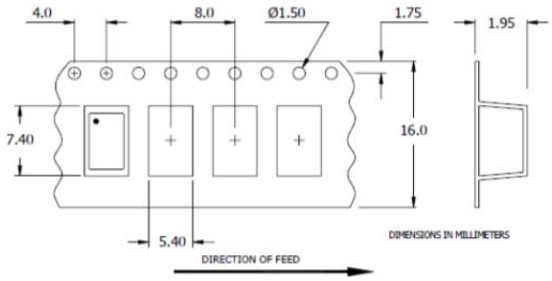
-20°C to +70°C	-30°C to +85°C	-40°C to +85°C
1 = ±10ppm	R = ±10ppm	W = ±15ppm
X = ±15ppm	Y = ±15ppm	6 = ±20ppm
2 = ±20ppm	N = ±20ppm	7 = ±30ppm
3 = ±30ppm	4 = ±30ppm	9 = ±50ppm
5 = ±50ppm	8 = ±50ppm	

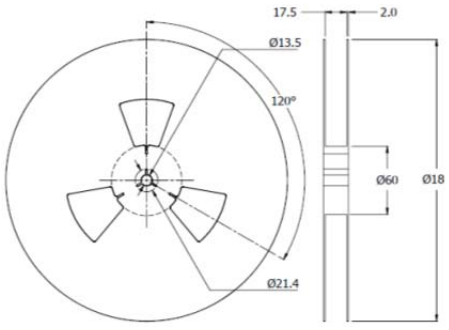
1. Frequency is recorded with 3 leading digits before the 'M' and 4 significant digits after the 'M' [including zeros].
   [Ex. XXXMXXXX (016M3840), XXXMXXXX (022M1184)]
2] There are frequencies that have significant digits after the 'M' that exceed the 4 digits. The remaining digits will be truncated from the CTS part number, but the factory will calibrate to the full frequency desired. Ex. P/N Frequency = Actual Frequency
   13M5537 = 13.553750 MHz 14M3181 = 14.318180 MHz 16M6666 = 16.666670 MHz 28M6363 = 28.636360 MHz

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 1k pcs. maximun per 180mm reel.



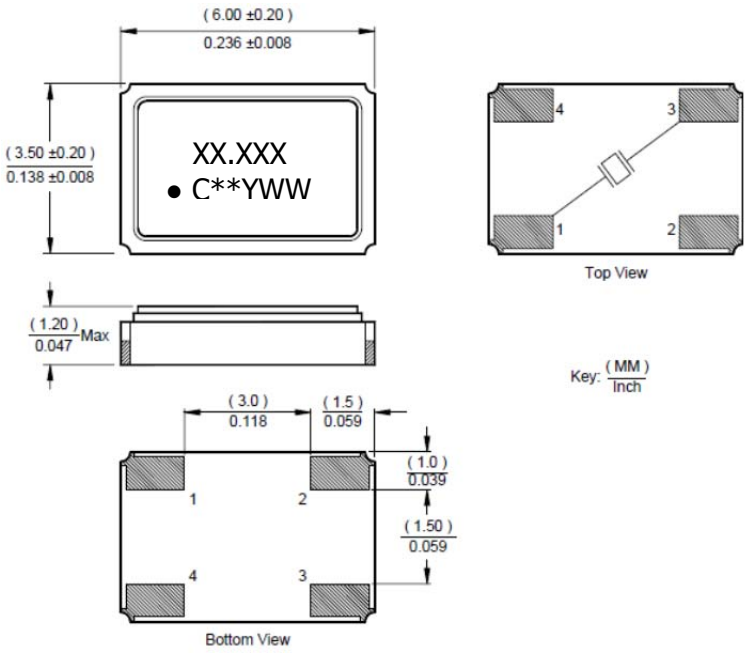


ELECTRICAL CHARACTERISTICS

	PARAMETER	VALUE	
ELECTRICAL PARAMETERS	Frequency Range	6MHz to 40MHz	35MHz to 133MHz
	Operating Mode	Fundamental	3rd Overtone
	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 - Fundamental Mode [Maximum]	6MHz - <10MHz	80 Ohms
		10MHz - <14MHz	70 Ohms
		15MHz - <20MHz	50 Ohms
		20MHz - 40MHz	40 Ohms
	Equivalent Series Resistance - 3rd Overtone Mode [Maximum]	35MHz - <44MHz	80 Ohms
		44MHz - <50MHz	70 Ohms
		50MHz - <80MHz	60 Ohms
		80MHz - 133MHz	60 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 identifier.
3. ** – Manufacturing Site code.
4. YWW – Date Code, Y – Last Digit of Year, WW – Week.

NOTES

1. Complete CTS part number, frequency value and date code information must appear on reel and carton labels.
2. Terminations #2, #4 and metal lid are connected internally and may be connected to 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