



Distributor of CTS Electronic Components: Excellent Integrated System Limited
Datasheet of 405C35B11M05920 - Crystal 11.0592MHz 30ppm 13pF 60 Ohm -20°C - 70°C
Surface Mount 4-SMD, No Lead (DFN, LCC)

Contact us: sales@integrated-circuit.com Website: www.integrated-circuit.com

Excellent Integrated System Limited

Stocking Distributor

Click to view price, real time Inventory, Delivery & Lifecycle Information:

[CTS Electronic Components](#)
[405C35B11M05920](#)

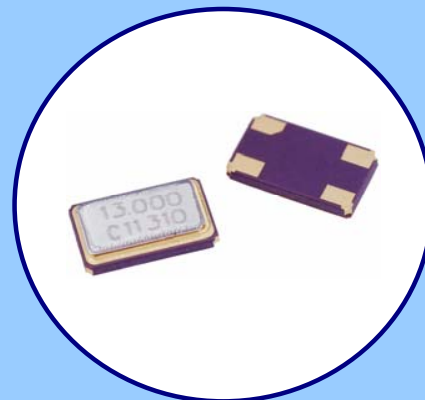
For any questions, you can email us directly:

sales@integrated-circuit.com



FEATURES

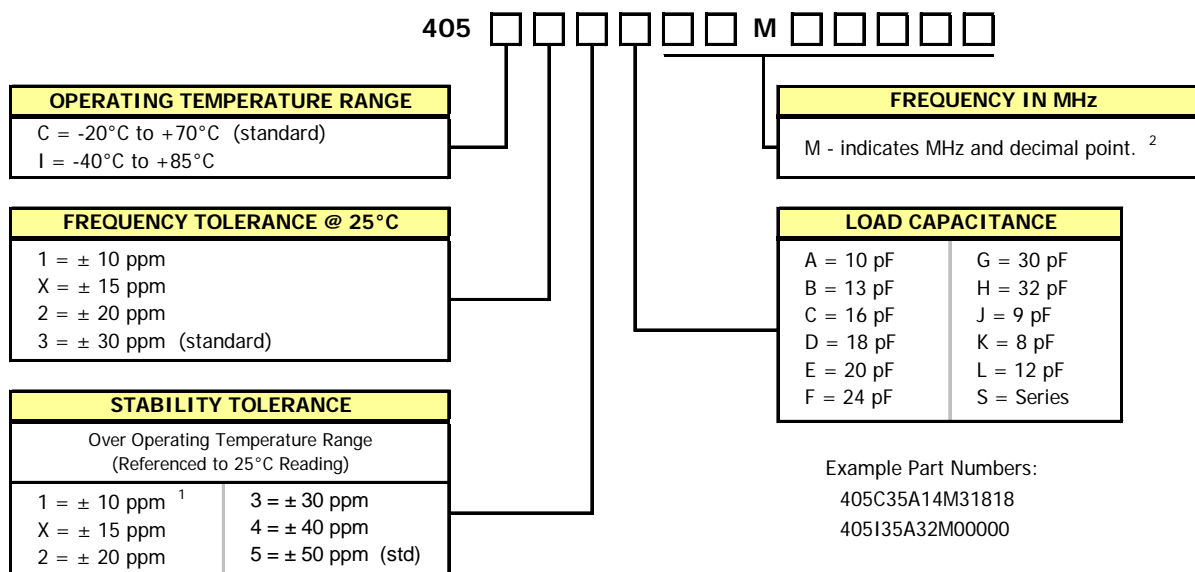
- Standard 5.0mm x 3.2mm Ceramic Surface Mount Package
- Fundamental Crystal Design
- Frequency Range 6.76438 – 50 MHz
- Frequency Tolerance, ± 30 ppm Standard
[other tolerances available]
- Frequency Stability, ± 50 ppm Standard
[other stabilities available]
- Operating Temperature to -40°C to +85°C
- Stable Frequency Over Temperature and Drive Level
- Tape & Reel Packaging Standard, EIA-481-2
- **RoHS/Green Compliant (6/6)**



APPLICATIONS

The Model 405 is a seam sealed ceramic packaged crystal offering reduced size, ideal for high-density circuit board applications. M405 offers reliable precision and excellent shock performance suitable for wireless communications, broadband access, WLAN/WiMax/WIFI, portable equipment, test and measurement, PCMCIA, computers and modems.

ORDERING INFORMATION



Use form C052 to detail non-standard parameters.

1] Only available with temperature range code "C".

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.**

ELECTRICAL CHARACTERISTICS

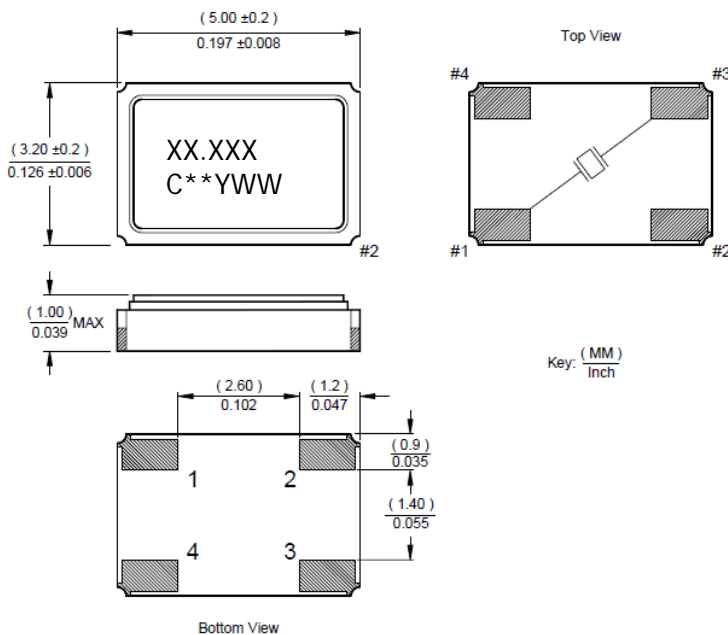
PARAMETER	VALUE
Frequency Range	6.76438 MHz to 50.0 MHz
Operating Mode	Fundamental
Crystal Cut	AT-Cut
Frequency Tolerance @ 25°C	± 30 ppm standard [± 10 ppm, ± 15 ppm and ± 20 ppm Available]
Frequency Stability Tolerance [Operating Temperature Range, Referenced to 25°C Reading]	-20°C to +70°C standard [± 10 ppm, ± 15 ppm, ± 20 ppm, ± 30 ppm and ± 40 ppm Available]
Operating Temperature Range	-20°C to +70°C -40°C to +85°C
Equivalent Series Resistance	See ESR Table
Load Capacitance or Resonance Mode	See Ordering Information
Shunt Capacitance (C ₀)	3.0 pF typical 7.0 pF maximum
Drive Level	10 µW typical 100 µW maximum
Aging @ +25°C	±3 ppm/yr typical ±5 ppm/yr maximum
Storage Temperature Range	-55°C to +125°C
Reflow Condition, per JEDEC J-STD-020	+260°C maximum, 10 Seconds maximum

EQUIVALENT SERIES RESISTANCE TABLE

FREQUENCY RANGE	MODE of OSCILLATION	ESR Maximum
6.76438 MHz - 10.999 MHz	Fundamental	80 Ohms
11.00 MHz - 20.00 MHz	Fundamental	60 Ohms
20.001 MHz - 50.00 MHz	Fundamental	50 Ohms

MECHANICAL SPECIFICATIONS

PACKAGE DRAWING



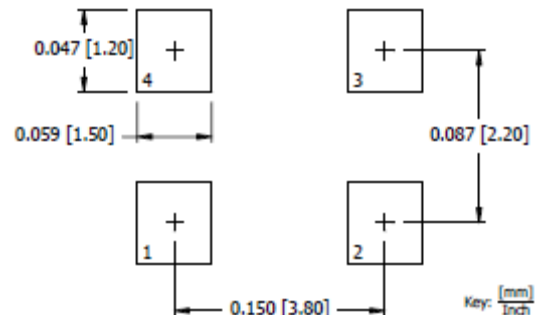
MARKING INFORMATION

- XX.XXX – Frequency marked with 3 significant digits after the decimal.
- C – CTS and Pin 1 identifier.
- ** - Manufacturing Site Code.
- YWW – Date Code, Y – Last Digit of Year, WW – Week.
- Complete CTS part number, frequency value and date code information must appear on reel and box labels.

NOTES

- Complete CTS part number, frequency value and date code information must appear on reel and carton labels.
- Termination pads (e4); barrier plating is nickel (Ni) with gold (Au) flash plate.
- Terminations #2, #4 and metal lid are connected internally and may be connected to ground for EMI suppression.
- Reflow conditions per JEDEC J-STD-020, 260°C maximum.

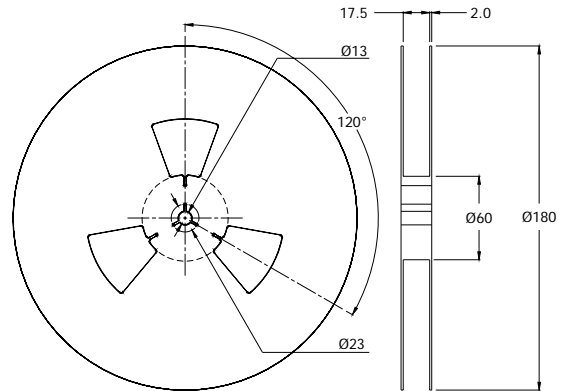
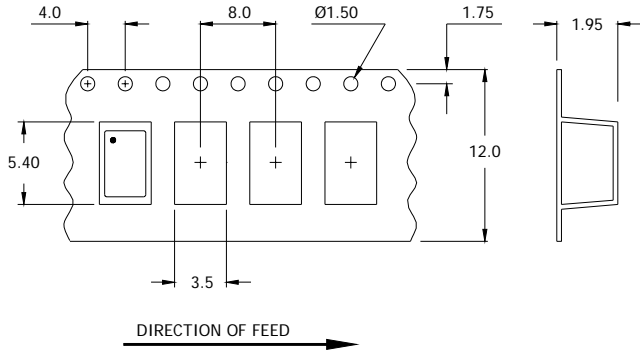
SUGGESTED SOLDER PAD GEOMETRY



PACKAGING INFORMATION

Device quantity is 1,000 pieces per 180mm reel.

DIMENSIONS IN MILLIMETERS



ENVIRONMENTAL SPECIFICATIONS

Temperature Cycle:	400 cycles from -55°C to between temperatures.
Mechanical Shock:	1,500g's, 0.5mS duration planes (18 total shocks).
Sinusoidal Vibration:	0.06 inches double amplil perpendicular planes (9 ti
Gross Leak:	No leak shall appear whil
Fine Leak:	Mass spectrometer leak rates less than 2×10^{-8} ATM cc/sec air equivalent.
Resistance to Solder Heat:	Product must survive 3 reflows of +250°C maximum, 10 seconds maximum.
High Temperature Operating Bias:	2,000 hours at +125°C, disregarding frequency shift.
Frequency Aging:	1,000 hours at +85°C.
Insulation Resistance:	500M Ohms @ $100V_{DC} \pm 15V_{DC}$.
Moisture Sensitivity Level:	Level 1 per JEDEC J-STD-020.