CTS. COMMUNICATIONS COMPONENTS, INC.

Model 406

3.5 x 6.0 mm

Ceramic - SM Crystal

FEATURES:

- Surface Mount Ceramic base Weld Metal lid Package with 4 pads
- Stable frequency characteristics over temperature and drive level
- Packed in Embossed Carrier Tape & Reel for Automatic Handling (Standard 1,000 piece/reel compliant with EIA-481-2)

APPLICATIONS:

Surface mount 3.5 x 6.0mm x 1.2mm Max. crystal is ideal for application to high-density circuit boards with reliable precision & excellent shock performance in wireless telecommunications devices.

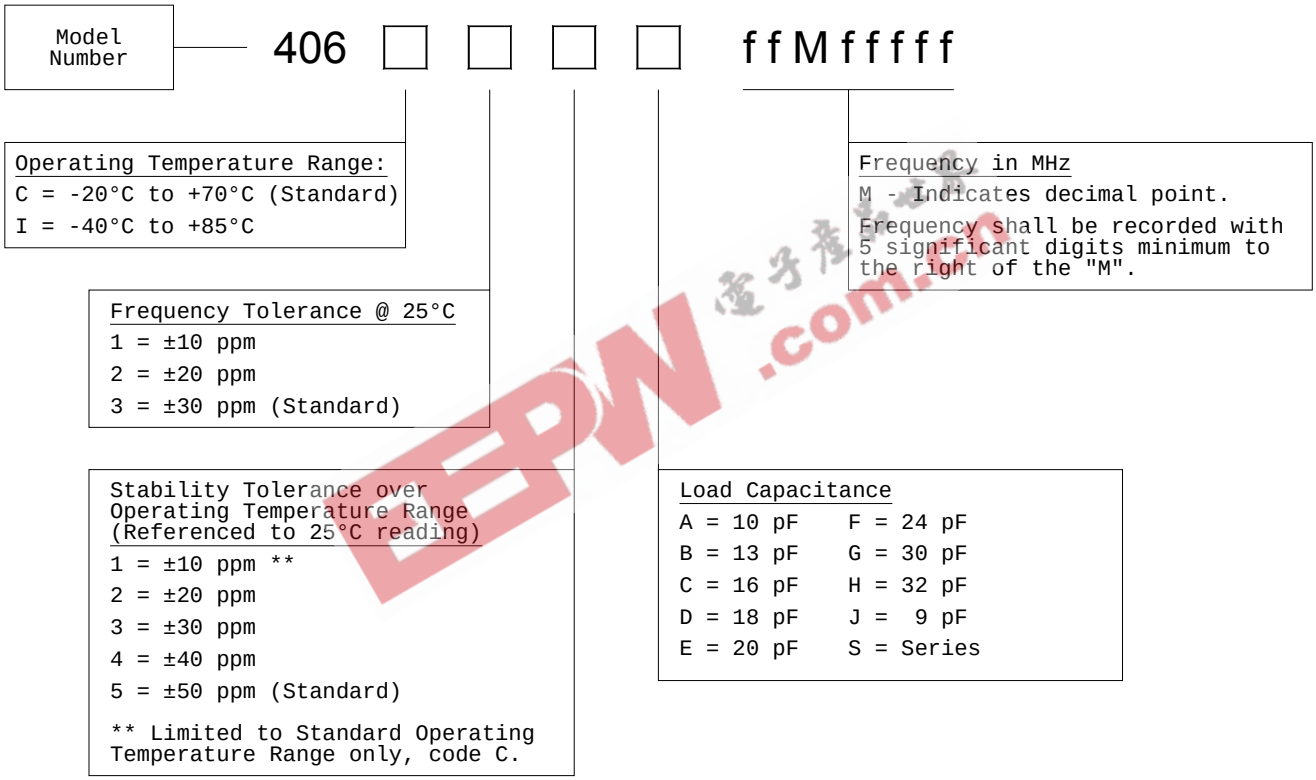
ELECTRICAL SPECIFICATIONS:

CTS Crystal Model Number	406
Operating Mode of Oscillation & Cut	Fundamental/3rd OT & AT-cut
Frequency Range	10.0 to 50.0 MHz
Frequency Calibration Tolerance @ 25°C	±30ppm Standard (Other tighter tolerances are available; See P/N System).
Frequency Stability Tolerance (Ref. to 25°C readings over Operating Temperature Range)	±50ppm Standard. (Other tighter tolerances are available; See P/N System).
Operating Temperature Range	-20°C to +70°C Standard. (Extended –40°C to +85°C is available; See P/N System).
Storage Temperature Range	-55°C to +125°C in a non-operating condition
Drive Level	25 µw Typical & 100 µw Maximum
Equivalent Series Resistance Maximum (ESR Max.)	See ESR Table
Resonance Mode (To be specified by customer)	S for Series or Parallel with load capacitance 13Pf, 18Pf, 20Pf , Etc. (See P/N System).
Surface Mount Temperature Reflow Condition	255°C ±5°C & 10 Sec. Max.
Shunt Capacitance (C0)	4.0 pF Max. (2.5 ±0.5 pF Typ.)

- ESR Table:

Frequency Range (MHz)	Mode of Oscillation	ESR Max. (Ohms)
10.000 ~ 15.999 MHz	Fundamental	60
16.000 ~ 42.000 MHz	Fundamental	40
30.000 ~ 50.000 MHz	3rd OT	80

- PART NUMBERING SYSTEM for Ordering Information:



Part Number Examples: 406C35A14M31818, 406I33H24M00000

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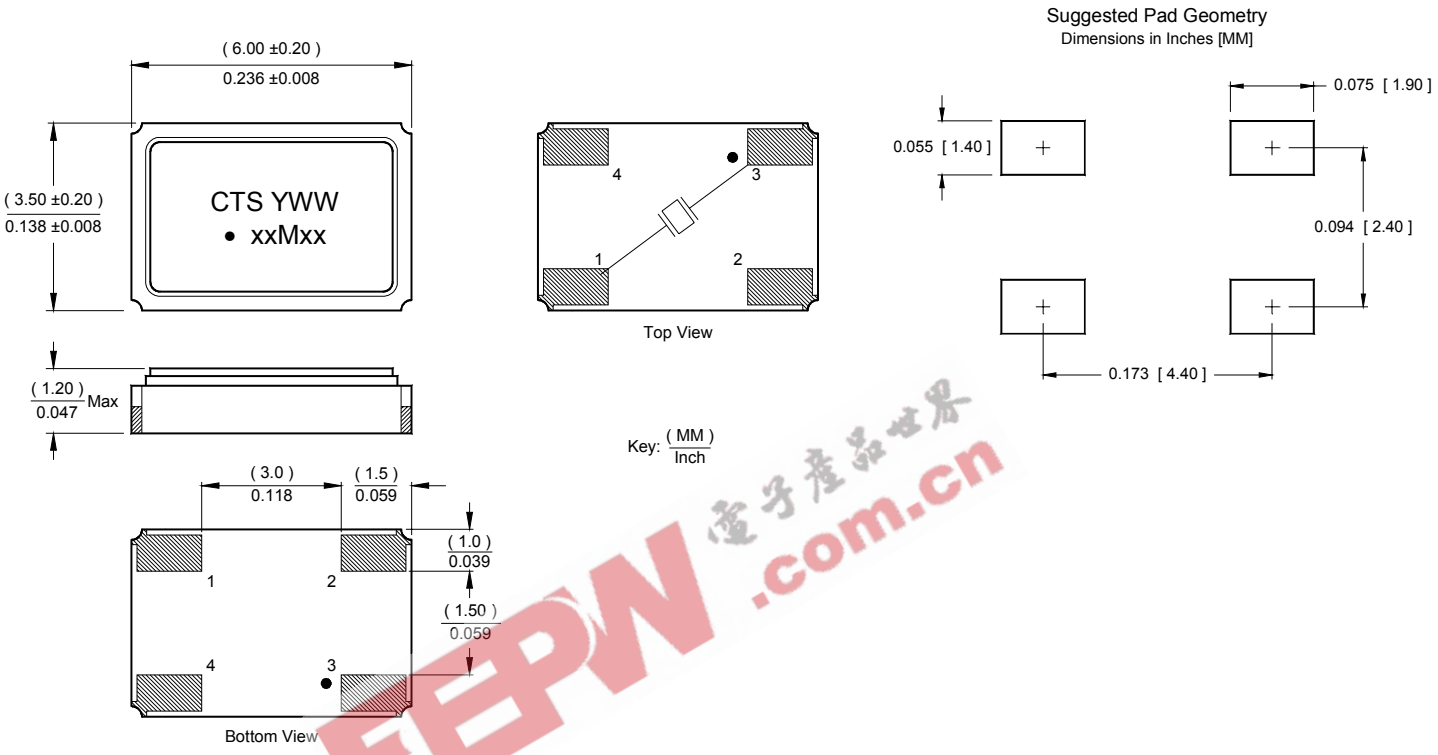
MECHANICAL SPECIFICATIONS: 4 Pad Terminations plated with 0.3 to 1.0 µm gold (Au).



▪ PRODUCT MARKING:

YWW = Date Code (last digit of year & week number)
xxMxx = Frequency shall be marked with 2 significant digits to the right of the “M”.
(*Customer specified codes maximum 6 characters can be marked instead of frequency*)

▪ QUALITY AND RELIABILITY:

- Quality Systems meet or exceed the requirements of ISO 9000: 2000 standards.
- Reliability Audits are performed on this or similar products with results available upon request.

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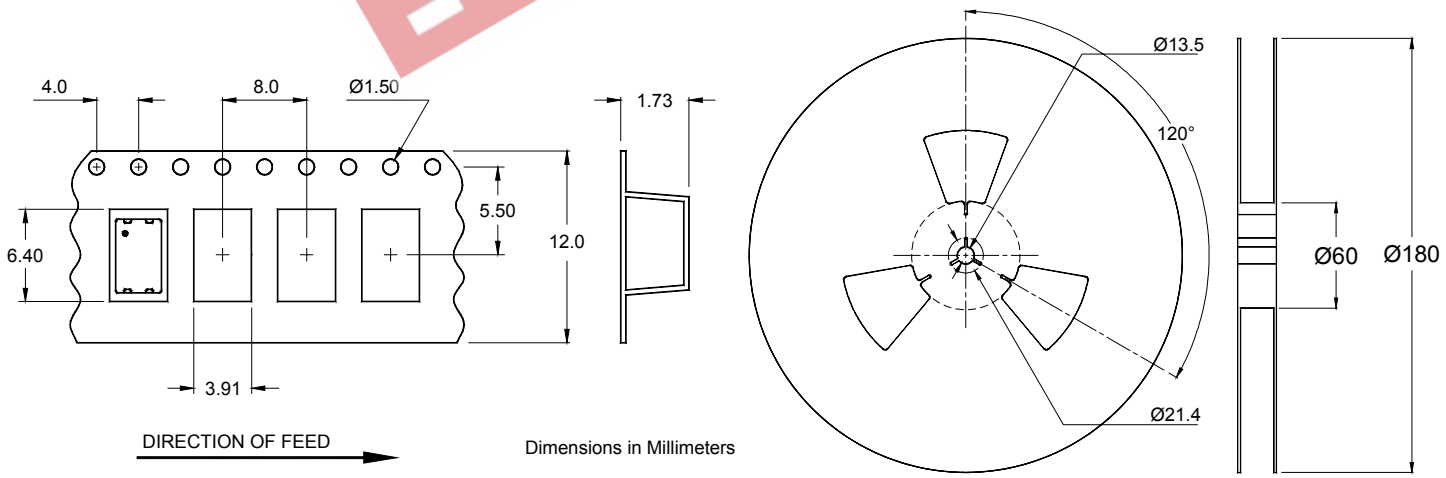
ENVIRONMENTAL SPECIFICATIONS:

Storage Temperature	-55°C to +125°C in a non-operating condition & no degradation of performance following such exposure
Temperature Cycle:	400 cycles, -55°C to +125°C, 10 min dwell, 1 min transfer
Mechanical Shock:	1,500g's, 0.5mS, ½ sine wave, 3 shocks each direction, in 3 planes
Sinusoidal Vibration:	0.06" D.A., 10 to 55 Hz and 20g's, 55 to 2,000 Hz, 3 cycles per plane
Gross Leak:	No leak shall appear while immersed in an FC40 or equivalent liquid at 125°C for 20 seconds
Fine Leak:	Mass spectrometer leak rates less than $2x10^{-8}$ atm. cc/sec of Helium
Resistance to Soldering Heat:	Product must survive 3 reflows of 260°C peak, 10 seconds maximum
High Temperature Operating Bias:	2,000 hours at 125°C, disregarding frequency shift
Frequency Aging:	≦ 5 ppm shift in 1,000 hours at 85°C
Insulation Resistance	500 MΩ @ 100 ±15VDC

TAPE AND REEL PACKAGING INFORMATION:

Standard packaging quantity shall be 1,000 pieces on a 180mm reel compliant with Standard EIA-481-2



Dimensions in Millimeters