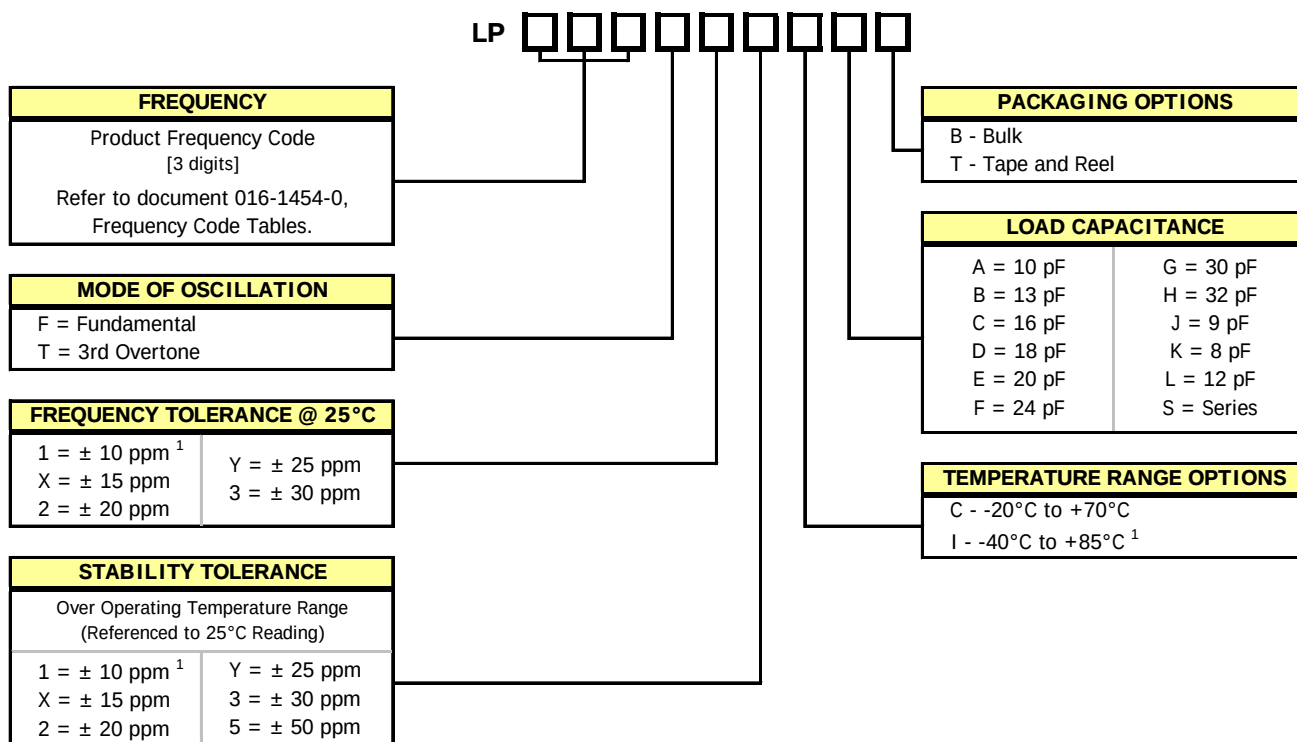
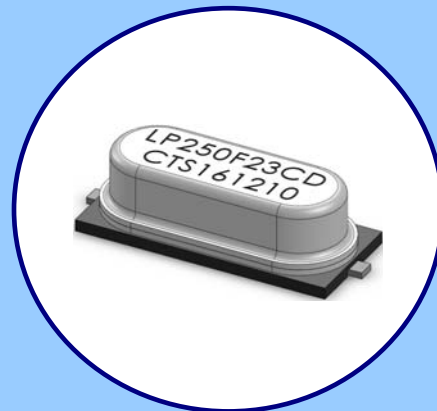




ELECTRICAL CHARACTERISTICS

ELECTRICAL PARAMETERS	PARAMETER	VALUE
	Frequency Range	3.2 MHz to 64.0 MHz
	Operating Mode	Fundamental or 3rd Overtone
	Crystal Cut	AT-Cut
	Frequency Tolerance @ +25°C *	±10, ±15, ±20, ±25, ±30 ppm
	Frequency Stability Tolerance * (Over Operating Temperature Range, Referenced to +25°C Reading)	±10, ±15, ±20, ±25, ±30, ± 50 ppm
	Operating Temperature Range *	-20°C to +70°C and -40°C to +85°C
	Equivalent Series Resistance	See ESR Table
	Load Capacitance	See Ordering Information
	Shunt Capacitance (C ₀)	7.0 pF Maximum
	Drive Level	100 µW Typical, 1,000 µW Maximum
	Aging @ +25°C	±3 ppm/yr Typical, ±5 ppm/yr Maximum
	Storage Temperature Range	-40°C to +85°C

* See Ordering Information

EQUIVALENT SERIES RESISTANCE TABLE

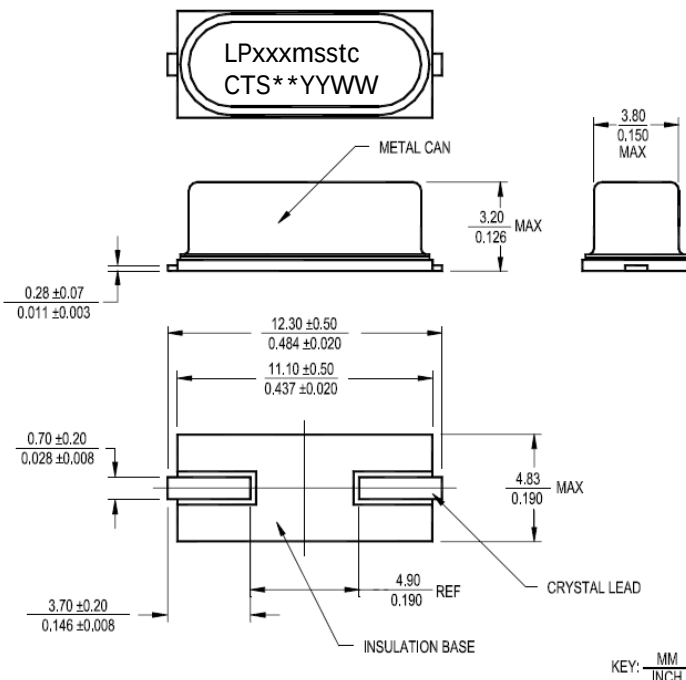
FREQUENCY RANGE	OSCILLATION MODE	ESR MAXIMUM
3.20 MHz - < 4.00 MHz	Fundamental	150 Ohms
4.00 MHz - < 5.00 MHz	Fundamental	120 Ohms
5.00 MHz - < 8.00 MHz	Fundamental	80 Ohms
8.00 MHz - < 12.00 MHz	Fundamental	60 Ohms
12.00 MHz - < 20.00 MHz	Fundamental	40 Ohms
20.00 MHz - < 30.00 MHz	Fundamental	30 Ohms
27.00 MHz - 64.00 MHz	3rd Overtone	80 Ohms

SCHEMATIC



MECHANICAL SPECIFICATIONS

PACKAGE DRAWING



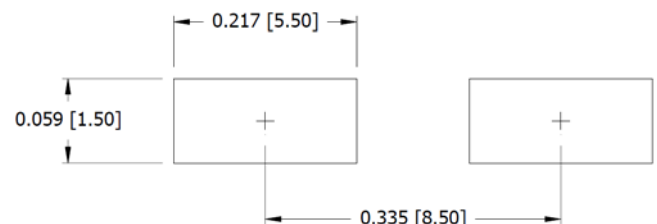
MARKING INFORMATION

- LPxxxxmsstc – Truncated CTS Part Number. [Packaging code is not required in the marking.]
 - LP – ATSSMLP platform.
 - xxx – 3-digit Frequency Code. [Reference document 016-1454-01]
 - m – Operating Mode; F = fundamental, T = 3rd Overtone.
 - sstc – Tolerance, Stability, Temperature and Load Capacitance codes. Reference Ordering Information.
- ** - Manufacturing Site Code.
- YYWW – Date Code, YY – year, WW – week.
- Complete CTS part number, frequency value and date code information must appear on bag and box labels.

NOTES

- Lead finish (e1), SnAgCu.
- Reflow conditions per JEDEC J-STD-020; 260°C maximum, 10 sec.
- MSL = 1.

SUGGESTED SOLDER PAD GEOMETRY



Key: Inch [mm]

PACKAGING INFORMATION

ATS-SM Tape and Reel [For Reference]

DIMENSIONS IN MILLIMETERS

