

Product Lineup

Crystal(XTAL)



Applications

- ▶ Timekeeping & Clock Reference
- ▶ Computing & Data Processing
- ▶ Wireless Communication & RF
- ▶ Consumer Electronics
- ▶ Automotive & Industrial

Overview

Pletronics crystals product portfolio scales from small, cost-effective timing sources to robust, ultra-stable oscillation, offering a variety of sizes, tight frequency stability and tolerance options, and broad temperature support to fit embedded, communication, and precision timing applications.

Key Parameters needed to specify a crystal

Clload (CL) : This parameter is valid for crystals used in load or parallel resonant oscillator circuits. Clload is the capacitance value, specified in pf, used during frequency calibration. e.g. 18 pf

ESR (Equivalent Series Resistance) : This resistance represents the equivalent impedance of the crystal at its resonant frequency and is specified in Ohms. e.g.50 ohms max

Overtone : Crystals have sharp resonant peaks at their fundamental frequency and at odd harmonics above the fundamental. Crystals designed to function at one of these harmonics are called overtone crystals. At higher oscillator frequencies overtone designs reduce cost by using thicker crystal elements that are easier to manufacture. The majority of crystals in use today are fundamental or third overtone. e.g. Fund

Calibration Tolerance : This is the maximum deviation from nominal frequency at 25°C. Calibration tolerance is specified in Parts-Per-Million(ppm). e.g. ±30ppm

Stability : Stability is the maximum deviation of the crystal frequency over the specified operational temperature range referenced to 25°C. Like calibration tolerance, stability is specified in ppm. (e.g. ±20ppm) The combined effects of calibration tolerance and stability are additive over the operational temperature range. e.g. ±50ppm (Calibration ±30ppm + stability ±20ppm)

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Product Series	Frequency Range	Operation Mode	Stability	Calibration Tolerance	Operation Temperature (Max)	Number of Pads	Package Size (L x W x H)
SM7T	26 to 60MHz	Fundamental	±10 ~ ±50ppm	±10 ~ ±50ppm	-40 ~ 85°C	4	1.6 x 1.25 x 0.3 mm
SM8T	16 to 72MHz	Fundamental	±10 ~ ±100ppm	±10 ~ ±50ppm	-40 ~ 125°C	4	2.0 x 1.6 x 0.45 mm
SM9T	12 to 80MHz	Fundamental	±10 ~ ±100ppm	±10 ~ ±50ppm	-40 ~ 125°C	4	2.5 x 2.0 x 0.55 mm
SM10T	8 to 150MHz	Fundamental 3rd Overtone	±10 ~ ±100ppm	±10 ~ ±50ppm	-40 ~ 125°C	4	3.2 x 2.5 x 0.7 mm
SM11T	8 to 156.25MHz	Fundamental 3rd Overtone	±5 ~ ±100ppm	±10 ~ ±50ppm	-40 ~ 125°C	4	5.0 x 3.2 x 0.85 mm
SM25 SM30 SM42	3.2 to 70MHz	Fundamental	±10 ~ ±100ppm	±15 ~ ±50ppm	-40 ~ 85°C	2	11.6 x 5.0 x 2.9 mm 11.6 x 5.0 x 3.5 mm 11.6 x 5.0 x 4.6 mm
MP49	1.8 to 210MHz	Fundamental 3rd Overtone	±10 ~ ±100ppm	±15 ~ ±30ppm	-40 ~ 85°C	2	10.8 x 4.47 x 13.21 mm
LP21 LP24 LP49	3.2 to 70MHz	Fundamental	±10 ~ ±100ppm	±15 ~ ±50ppm	-40 ~ 85°C	2	10.8 x 4.47 x 2.1 mm 10.8 x 4.47 x 2.5 mm 10.8 x 4.47 x 3.56 mm
SM8S	32.768KHz	Fundamental	-0.032 ~ -0.04 ppm/Δ°C ²	±10 ~ ±20ppm	-40 ~ 125°C	2	3.2 x 1.5 x 1.0 mm
SM7S	32.768KHz	Fundamental	-0.032 ~ -0.04 ppm/Δ°C ²	±10 ~ ±20ppm	-40 ~ 85°C	2	2.0 x 1.2 x 0.6 mm
SM6S	32.768KHz	Fundamental	-0.032 ~ -0.04 ppm/Δ°C ²	±10 ~ ±20ppm	-40 ~ 85°C	2	1.6 x 1.0 x 0.5 mm
SM5S	32.768KHz	Fundamental	-0.032 ~ -0.04 ppm/Δ°C ²	±10 ~ ±20ppm	-40 ~ 85°C	2	1.2 x 1.0 x 0.5 mm

