



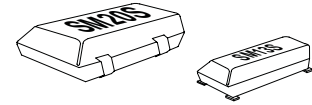
Pletronics, Inc.

19013 36th Ave. W., Lynnwood, WA 98036 USA

Manufacturer of High Quality Frequency Control Products

SM Watch Crystals

- 4 Lead Surface Mount Tuning Fork Watch Crystals
- SM13S:** 1.5x7x1.4mm, **SM20S:** 3.8x8.5x2.5mm

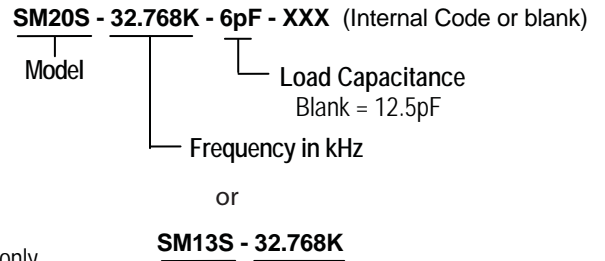


32.768 kHz

Standard Specifications

Calibration Frequency Tolerance	± 20 PPM at 25°C std, SM20SD = ± 10 PPM
Operating Temperature Range (OTR)	-40 to +85°C
Frequency Stability over OTR	Calculate as: Frequency shift from 25°C to T°C in PPM = - 0.038 x (T - 25) ² ± 10%
Load Capacitance	12.5 pF std, 6 pF avail. for SM20S only
Equivalent Series Resistance (ESR)	SM20S: 50 k ohm max, SM13S: 65 k ohm max
Drive Level	1 μW maximum
Aging at 25°C for the 1st year	± 5 PPM maximum
Shunt Capacitance	1.0 pF to 1.45 pF typical

Part Numbering Guide



Consult factory for available specifications.
A special part number may be assigned.

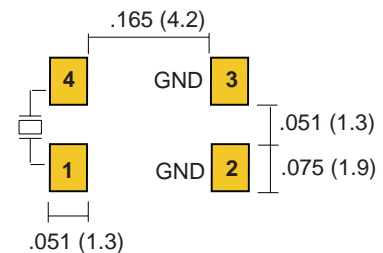
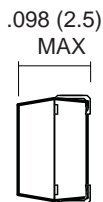
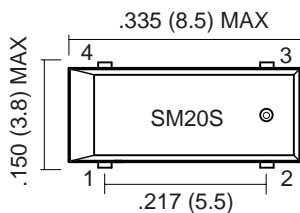
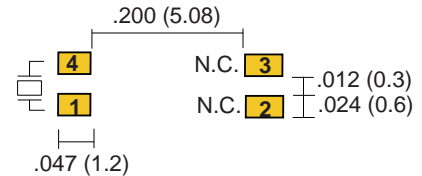
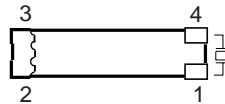
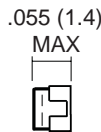
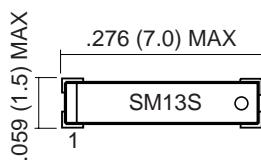
Mechanical: inches (mm)

not to scale

Solder Pads

Due to part size and factory abilities, part marking may vary from lot to lot and may contain our part number or an internal code.

Packaging
16mm tape
8mm pitch



Apr 2008



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