



Actual Size



Product Description

The 49S Series is a miniature, AT or BT cut strip resonator crystal, housed in low profile 3.5mm high packaging.

Product Features

- Low profile 3.5mm high
- AT or BT cut performance
- Resistance weld seal
- Pb-free and RoHS/Green compliant available

Typical Applications

- Set-Top Box/Multimedia
- Clock/VCXO Multiplier
- Network Adapter Cards
- Modems
- Microcontrollers and Processors
- Remote control devices

Frequency Range:

- 3.2 to 29.999 MHz, AT Fundamental
- 30.0 to 54.000 MHz, AT 3rd OT
- 26.8 to 54.000 MHz, BT Fundamental

Characteristics at 25°C ±2°C:

- Frequency Calibration Tolerance (as specified): ±30ppm, ±50ppm
- Load Capacitance (as specified): 12 to 32pF or Series Resonance
- Effective Series Resistance:
 - 200Ω max (3.2 to 3.499MHz)
 - 180Ω max (3.5 to 3.999MHz)
 - 150Ω max (4 to 4.999MHz)
 - 120Ω max (5 to 5.999MHz)
 - 100Ω max (6 to 6.999MHz)
 - 80Ω max (7 to 8.999MHz)
 - 60Ω max (9 to 12.999MHz)
 - 40Ω max (13 to 19.999MHz)
 - 30Ω max (20 to 29.999MHz, AT Fund)
 - 80Ω max (30 to 54MHz, AT (3rd overtone)
 - 30Ω max (26.8 to 54MHz, BT Fund)
- Drive Level: 100μW correlation, (500μW Max)
- Shunt Capacitance: 7pF Max.

Temperature Range:

- Operating: -20 to +70°C ; -40 to +85°C (as specified)
- Storage: -55 to +125°C

Temperature Stability (as specified):

- ±30ppm (-20 to +70°C) AT Cut
- ±50 or ±100ppm (-40 to +85°C) AT Cut
- 0 to -100ppm (-20 to +70°C) BT Cut

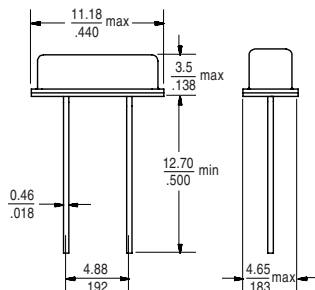
Aging @ 25°C, first year:

- ±3ppm (typ), ±5ppm (max)

Reflow Temperature:

- 240°C Max (non-RoHS package)
- 260°C Max, 10 sec max (RoHS package)

Packaging Information: 49S



Scale: None (Dimensions in $\frac{\text{mm}}{\text{inches}}$)

Package Marking Information

Line 1: S = SaRonix
xxx = Calib/Stability/Temp Code
YYWWX = Date Code
Line 2: Frequency (up to 7 digits, including decimal point)
Z = - (dash) for AT-cut parallel resonant
= blank for AT-cut series resonant
= B for BT-cut
xx = Load Capacitance (leave Blank if Series)

SxxxYYWWX
24.5760-xx

Ordering Information

Type 49S XXX = XX XXX X (X)
 Frequency (MHz) _____
 Frequency (in MHz) = 0x.xxxx, xx.xxxx
 (a zero is used in front of frequencies under 10 MHz)
 CUT TYPE: _____
 - (dash) = AT-cut Parallel Resonance
 Blank = AT-cut Series Resonance
 B = BT-cut, 26.8 to 50 MHz
 (Q) = Manufactured in a TS16949 or QS9000 registered facility
 -E (dash E) = Lead (Pb)-free RoHS Compliant Version
 Blank = Non-RoHS (not available for new designs)
 Calibration / Stability / Temp Range
 GGC = $\pm 30\text{ppm}$ / $\pm 30\text{ppm}$ / -20 to +70°C
 GHE = $\pm 30\text{ppm}$ / $\pm 50\text{ppm}$ / -40 to +85°C
 HJE = $\pm 50\text{ppm}$ / $\pm 100\text{ppm}$ / -40 to +85°C
 * others available
 Load Capacitance
 xx = Parallel Resonance (specify load)
 Blank = Series Resonance

Part Number Example:

Spec: Freq 5.1234MHz, $\pm 30\text{ppm}$ calib, $\pm 30\text{ppm}$ stab, -20 to +70°C, 16pF = 49S05.1234-16GGC

= 49S05.1234-16GGC-E (for lead-free)

Mechanical:

- Shock: JESD22-B104 Condition B
- Solderability: JESD22 method 1 (Predonditioning E) RoHS package
- Terminal Strength: MIL-STD-883 Method 2004
- Vibration: JESD22-B103
- Solvent Resistance: JESD22-B107
- Resistance to Soldering Heat: JESD22-B106 (RoHS Package)

Environmental:

- Gross Test Leak: JESD22-A109, Condition C
- Fine Test Leak: JESD22-A109, Condition A1
- Moisture Resistance: JESD22-A113
- Insulation Resistance: 500 MΩ min (100 VDC)