

HH SERIES - RESISTANCE WELD CRYSTAL



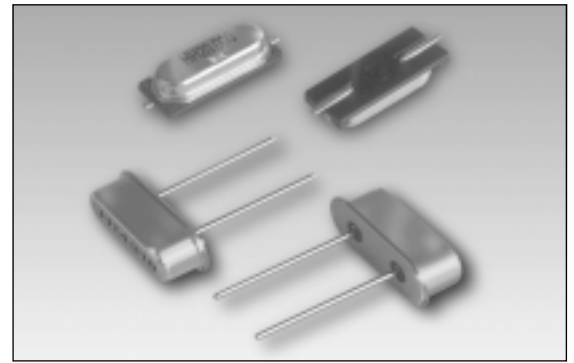
The HH series is the low profile HC49/US and HC49/USM (surface mount) industry standard crystal, with the same lead spacing as the HC49/U and encased in the rugged resistance weld package. These crystals are both cost effective and ideal for many space limited applications.

FEATURES:

- Low profile (3.6mm TH / 4.5mm SMD)
- Industry standard lead spacing
- Resistance welded for good aging
- Cost effective

OPTIONS:

- Extended temp. range
- Surface mount package
- Insulator
- Tighter tolerances available
- Tape & Reel



ELECTRICAL SPECIFICATIONS

| PARAMETERS | CONDITIONS | MINIMUM | MAXIMUM | UNIT |
|-------------------------------------|---------------------|-----------------------------------|---------|------|
| FREQUENCY RANGE | | 3.200 | 70.000 | MHz |
| FREQUENCY TOLERANCE | @ 25°C | -30* | +30* | PPM |
| FREQUENCY STABILITY, REF @ 25°C | 3.200 - 70.000 MHz | -50* | +50* | PPM |
| OPERATING TEMPERATURE RANGE | | 0°C to +70°C / -40°C to +85°C* | | °C |
| STORAGE TEMPERATURE RANGE | | -30°C to +85°C / -55°C to +125°C* | | °C |
| SHUNT CAPACITANCE (C ₀) | | 7.0 | | pF |
| LOAD CAPACITANCE (C _L) | Per customer spec. | 10.0 | Series | pF |
| DRIVE LEVEL | 3.200 to 70.000 MHz | 0.5 | | mW |
| AGING CHARACTERISTICS | @ 25°C per year | ± 5 max. | | PPM |

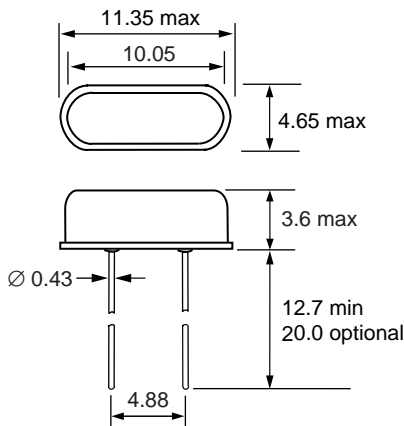
* Tight tolerances optional - please specify

EQUIVALENT SERIES RESISTANCE (ESR) SPECIFICATIONS

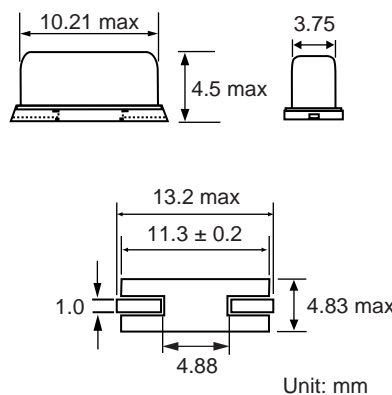
| FREQUENCY RANGE (MHz) | MODE | ESR (Ω) MAX | FREQUENCY RANGE (MHz) | MODE | ESR (Ω) MAX |
|-----------------------|-------------|-------------|-----------------------|--------------|-------------|
| 3.200 - 3.500 | FUNDAMENTAL | 300 | 8.00 - 11.99 | FUNDAMENTAL | 60 to 80 |
| 3.500 - 5.00 | FUNDAMENTAL | 100 to 200 | 12.00 - 30.00 | FUNDAMENTAL | 30 to 40 |
| 5.00 - 7.99 | FUNDAMENTAL | 80 to 120 | 27.00 - 70.00 | 3rd OVERTONE | 100 |

MECHANICAL DRAWING

HC49US HH TYPE



HC49USM HH-SM TYPE



PART NUMBERING GUIDE

EXAMPLE: HH2700F-20-SM

| HH | 2700F | - 20 | -SM |
|-----------|-------------------------------------|--------------------------------|---------|
| HH Series | Frequency F = Fund (> 25 MHz) | Capacitance Load S = Series | Options |

OPTIONS:

SM: Surface Mount
E: -40+85°C
E105: -40+105°C
E55/105: -55+105°C
E125: -55+125°C

TR: Tape & Reel
INS: With Insulator
XPPM: Tolerance (specify)
SP: Per specifications