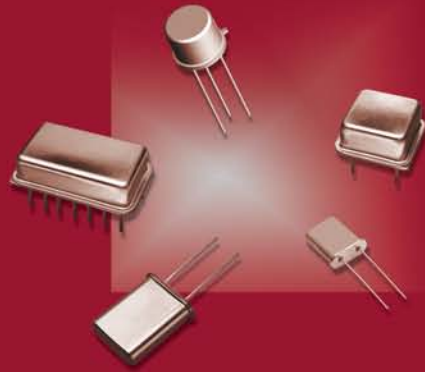




**FREQUENCY  
MANAGEMENT  
INTERNATIONAL**

*Complete SOLUTIONS  
in Standard, Custom &  
Precision Frequency  
Control Devices*



**1 (800) 800-XTAL [9825]**

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**CRYSTALS  
&  
OSCILLATORS**

**FOR  
HIGH-  
TEMPERATURE  
APPLICATIONS**



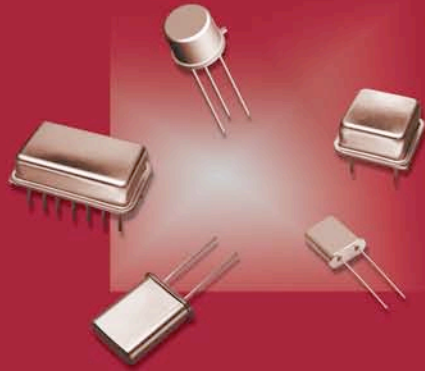


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**High-Reliability Clock Oscillators**

**& Crystals Designed for Extreme**

**Temperature and Rugged**



**Environments**

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**STANDARD SPECIFICATIONS**

- 
- > From -100°C to +250°C
  - > Thru-Hole & Surface Mount Packages
  - > Resistant to High-Shock & Vibration
  - > Life Tested to 2000 Hours @ 200°C
  - > DC to 110 MHz
  - > 3.3 or 5 Volts
  - > Quick-Turn





Huntington Beach, CA Facility



## STANDARD PRODUCTS

With our **quick-turn USA production capability** and **high-volume off-shore facility**, we have what it takes to support your requirements - from prototype to high-volume cost effective production quantities.

### ISO 9001 COMPLIANT | PROCESS CONTROL FROM SHORE TO SHORE

#### DC - 300 MHz

-100°C to +250°C

#### Product Line

- > Crystals
- > Oscillators
  - > VCXOs
  - > TCXOs
  - > OCXOs
  - > VCTCXOs
  - > TCVCXOs
- > LV & LVDS XO's
- > PECL XO's

- > High-Temp Crystals
- > High-Temp Oscillators

#### Standard Packages

- > Through-Hole: DIPs, TO-5
- > Surface Mount: 12x18,  
9x14, 5x7  
3.2x5
- > Supply V: 2.7 to 5 Volts
- > Output: HCMOS/TTL  
Clipped Sinewave  
LVDS  
PECL





## EXTREME TEMPERATURE PRODUCTS

FMI offers its vast knowledge and experience in high-temperature frequency control circuit design and manufacturing process development to respond to our customer demand for higher-performance and reliability. Our focused effort has led to remarkable product offering over a



*Extremely low-power circuit options for critical & battery operated systems.*

*wide operating temperature range, combined with precision frequency/timing stability and low-operating power- meeting or exceeding down-hole system performance requirements.*

- Industry Standard Logic Families including Sinusoidal Output
- Wide Range of Supply Voltages from 2.5 to 18 V
- Frequency Range from 10 Hz to 110 MHz
- Single and Double Rotation Optimized Crystal Cuts (AT, SC, IT Cuts)
- Wide Selection of Frequency Stability & Temperature Ranges from -70°C to +260°C
- Calibration at Room Temperature or any Customer Defined Temperature
- Voltage Controlled Option for Reliable Phase-Locking
- Matched Pair Option for High-Precision Algorithms & Correlation
- Industry Standard Packages and Custom Packaging Solutions
- Optimized Crystal Support Structure for any Shock & Vibration Requirements
- Screening / Testing including Industry Standard & Military Specifications
- Normal & Accelerated Pre-Aging
- Optional Customer Defined Formatted Test Data

CAPABILITIES  
Features &  
Options

## XO & VCXO CRYSTALS

*Stabilities as low as  $\pm 35$  ppm & temperature ranges exceeding +250°C.*

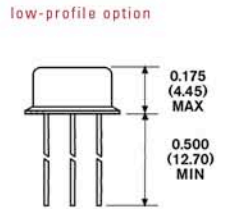
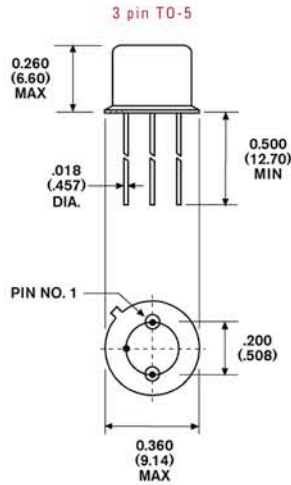
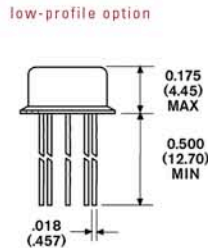
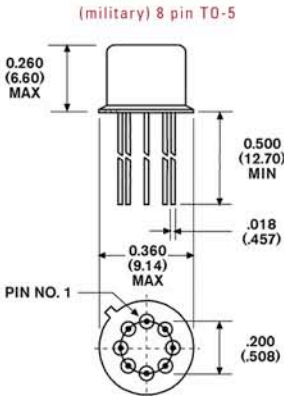
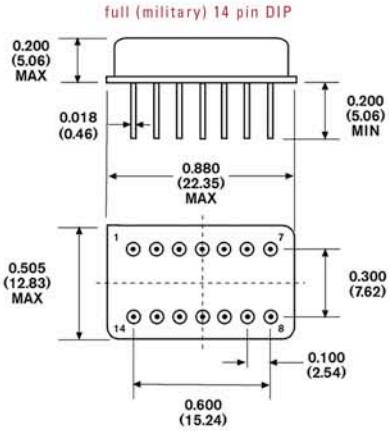
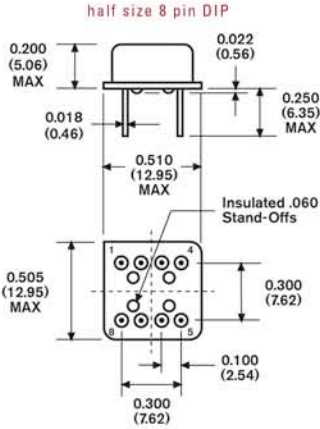


- High Quality Resonator Material & Condition
- Optimal Crystal Cut / Angle for the Specified Temperature Range
- Fundamental, 3rd & 5th Overtone Resonances; Frequencies 2 to 125 MHz
- Single & Double Rotation Precision Cuts (AT, SC, IT Cuts)
- Calibration at Room Temperature or any Customer Defined Temperature
- Industry Standard Packages & Custom Packaging Solutions
- Two, Three or Four Point Crystal Support Options
- Optimized Crystal Support Structure for any Shock & Vibration Requirements
- Screening / Testing including Industry Standard and Military Specifications
- Normal and Accelerated Pre-Aging
- Optional Customer Defined Formatted Test Data

5 X 7  
& other  
Surface  
Mount  
Options



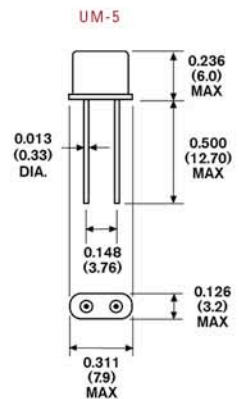
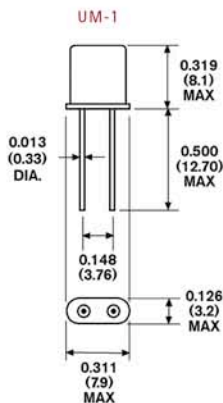
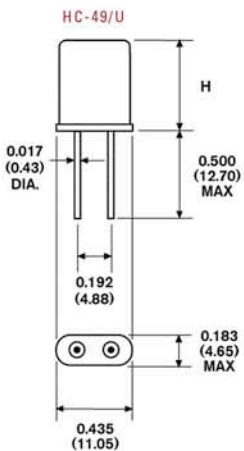
*Our rich and vast experience in high-temperature manufacturing processes and unique design capabilities are available to customers that are focused on pushing the high-temperature tools price/performance envelope.*



Standard  
OSCILLATOR  
Packages

Standard  
CRYSTAL  
Packages

lead forming options available



Dimension "H" Table	
Package	Max. Height
A1	0.530" (13.48mm)
A2	0.456" (11.58mm)
A3	0.387" (9.83mm)



**FREQUENCY MANAGEMENT | INTERNATIONAL**  
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