

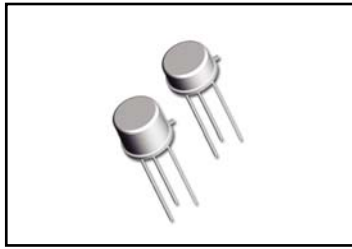
# EXTREME ENVIRONMENT

## SMD HIGH-TEMPERATURE PACKAGED CRYSTALS

### FMXTHT05 SERIES

Extreme Temperature  
Packaged Crystals

T0-5 & TO-5 Low Profile



- 4.2 MHz to 125 MHz
- High-Shock & Vibration
- Standard Stability from  $\pm 70$ ppm
- Low Profile TO-5 Option Available
- Specify Custom Stabilities from  $-55^{\circ}\text{C}$  to  $+220^{\circ}\text{C}$

### SPECIFICATIONS

09 | issue1 | 032009



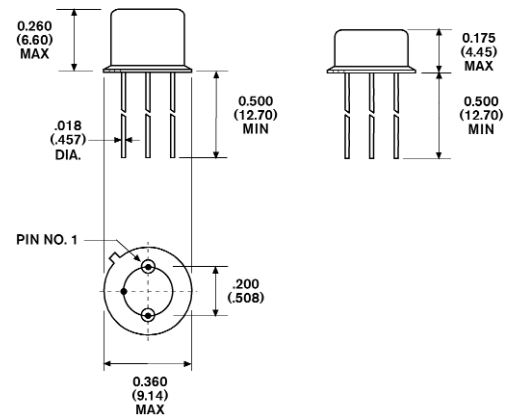
| Specification Parameters           | Performance / Range  |
|------------------------------------|--|
| Frequency Range                    | 4.20 MHz to 125.000 MHz  |
| Operation Mode                     | See Operation Mode and ESR Table                               |
| Load Capacitance (CL)              | 18pf Std, 8 - 60pF and Series available                        |
| Frequency Tolerance                | $\pm 50$ ppm @ $25^{\circ}\text{C}$ , Custom Options available |
| Temperature Tolerance              | $\pm 250$ ppm Std, $\pm 70$ ppm to $\pm 300$ ppm available     |
| Operating Temperature              | 0 to $200^{\circ}\text{C}$ Std, Custom Options available       |
| Storage Temperature                | $-55^{\circ}\text{C}$ to $+240^{\circ}\text{C}$ Standard       |
| Equivalent Series Resistance (ESR) | See Operation Mode and ESR Table                               |
| Shunt Capacitance (CO)             | 7pF max  |
| Drive Level                        | 50 $\mu\text{W}$ typical, 1mW max                              |
| Aging @ $+25^{\circ}\text{C}$      | $\pm 5$ ppm per year   |
| Shock                              | 1000g, 1 msec, Standard  |
| Vibration - Random                 | 20g RMS 10 Hz to 2 kHz Random, Standard                        |
| Screening / Testing Available      | per MIL-3098   |

All specifications subject to change without notice.

\*Note: Custom designs for frequencies less than 10 MHz available. Call the factory.

- High Pullability
- AT, IT, or SC Cut Crystals
- Extended Operating Temp. Range from  $-150^{\circ}\text{C}$  to  $+300^{\circ}\text{C}$  Available
- Swept Quartz Option

#### TO-5 & TO-5 Low Profile



#### Pin Configuration

| Pin                           | Function   |
|-------------------------------|------------|
| 1                             | Connect    |
| 5                             | Connect    |
| 7                             | No-Connect |
| All other pins: not available |            |

Note: Pin 3 available upon request  
8 Pin version available upon request

Dimensions: in / (mm)

#### Operation Mode and ESR Table

| Freq (MHz)    | Mode         | MAX ESR |
|---------------|--------------|---------|
| 4.2 - 4.9     | Fundamental  | 100     |
| 5.0 - 7.9     | Fundamental  | 80      |
| 8.0 - 14.9    | Fundamental  | 50      |
| 15.0 - 39.0   | Fundamental  | 25      |
| 31.0 - 42.0   | Fundamental  | 35      |
| 24.0 - 59.9   | 3rd Overtone | 40      |
| 60.0 - 81.9   | 3rd Overtone | 50      |
| 82.0 - 104.9  | 3rd Overtone | 60      |
| 105.0 - 125.0 | 3rd Overtone | 70      |

related product:

Extremely Linear  
Temperature Sensors  
for High-Temperature  
Applications Now  
Available.

FMI continuously performs life test on high temperature products. Inquire about the life test relevant to your specific application.

#### Material

Base & Leads: Nickel Plated Kovar\*  
Lid: Stainless Steel

\*note: leads w/ gold flash available

PLEASE CONTACT US FOR PART NUMBERS, HOW TO ORDER,  
ADDITIONAL PRODUCT SPECIFICATIONS & OR WITH YOUR CUSTOM REQUIREMENTS