EXTREME ENVIRONMENT

SMD HIGH-TEMPERATURE PACKAGED QUARTZ CRYSTALS

FMXTHC7Sseries

Extreme Temperature Packaged Crystals

CERAMIC SMD 7x7



- 3.6 MHz to 125 MHz
- 0°C to +200°C Standard
- High-Shock & Vibration
- Stability from ±70ppm

High Pullability

Swept Quartz Option

AT, IT, or SC Cut Crystals

-150°C to +240°C Available

Surface Mount Alternative to TO-5

RoHS

compliant



ParameterSpecificationFrequency Range*3.60 MHz to 125.000 MHzOperation ModeSee Operation Mode and ESR TableLoad Capacitance (CL)18pf Std, 8 - 60pF and Series availableFrequency Tolerance±50ppm @ 25°C, Custom Options availableTemperature Tolerance±250ppm Std, ±70ppm to ±300ppm availableOperating Temperature0 to 200°C Std, Custom Options availableStorage Temperature-55°C to +240°CEquivalent Series Resistance (ESR)See Operation Mode and ESR TableShunt Capacitance (CO)7pF maxDrive Level50µW typical, 1mW maxAging @ 25°C±5ppm per yearScreening / Testing Availableper MIL-3098		
Frequency Range*3.60 MHz to 125.000 MHzOperation ModeSee Operation Mode and ESR TableLoad Capacitance (CL)18pf Std, 8 - 60pF and Series availableFrequency Tolerance±50ppm @ 25°C, Custom Options availableTemperature Tolerance±250ppm Std, ±70ppm to ±300ppm availableOperating Temperature0 to 200°C Std, Custom Options availableStorage Temperature-55°C to +240°CEquivalent Series Resistance (ESR)See Operation Mode and ESR TableShunt Capacitance (CO)7pF maxDrive Level50µW typical, 1mW maxAging @ 25°C±5ppm per yearScreening / Testing Availableper MIL-3098	Parameter	Specification
Operation Mode See Operation Mode and ESR Table Load Capacitance (CL) 18pf Std, 8 - 60pF and Series available Frequency Tolerance ±50ppm @ 25°C, Custom Options available Temperature Tolerance ±250ppm Std, ±70ppm to ±300ppm available Operating Temperature 0 to 200°C Std, Custom Options available Storage Temperature -55°C to +240°C Equivalent Series Resistance (ESR) See Operation Mode and ESR Table Shunt Capacitance (CO) 7pF max Drive Level 50µW typical, 1mW max Aging @ 25°C ±5ppm per year Screening / Testing Available per MIL-3098	Frequency Range	*3.60 MHz to 125.000 MHz
Load Capacitance (CL) 18pf Std, 8 - 60pF and Series available Frequency Tolerance ±50ppm @ 25°C, Custom Options available Temperature Tolerance ±250ppm Std, ±70ppm to ±300ppm available Operating Temperature 0 to 200°C Std, Custom Options available Storage Temperature -55°C to +240°C Equivalent Series Resistance (ESR) See Operation Mode and ESR Table Shunt Capacitance (CO) 7pF max Drive Level 50µW typical, 1mW max Aging @ 25°C ±5ppm per year Screening / Testing Available per MIL-3098	Operation Mode	See Operation Mode and ESR Table
Frequency Tolerance ±50ppm @ 25°C, Custom Options available Temperature Tolerance ±250ppm Std, ±70ppm to ±300ppm available Operating Temperature 0 to 200°C Std, Custom Options available Storage Temperature -55°C to +240°C Equivalent Series Resistance (ESR) See Operation Mode and ESR Table Shunt Capacitance (CO) 7pF max Drive Level 50µW typical, 1mW max Aging @ 25°C ±5ppm per year Screening / Testing Available per MIL-3098	Load Capacitance (CL)	18pf Std, 8 - 60pF and Series available
Temperature Tolerance ±250ppm Std, ±70ppm to ±300ppm available Operating Temperature 0 to 200°C Std, Custom Options available Storage Temperature -55°C to +240°C Equivalent Series Resistance (ESR) See Operation Mode and ESR Table Shunt Capacitance (CO) 7pF max Drive Level 50µW typical, 1mW max Aging @ 25°C ±5ppm per year Screening / Testing Available per MIL-3098	Frequency Tolerance	±50ppm @ 25°C, Custom Options available
Operating Temperature 0 to 200°C Std, Custom Options available Storage Temperature -55°C to +240°C Equivalent Series Resistance (ESR) See Operation Mode and ESR Table Shunt Capacitance (CO) 7pF max Drive Level 50µW typical, 1mW max Aging @ 25°C ±5ppm per year Screening / Testing Available per MIL-3098	Temperature Tolerance	±250ppm Std, ±70ppm to ±300ppm available
Storage Temperature -55°C to +240°C Equivalent Series Resistance (ESR) See Operation Mode and ESR Table Shunt Capacitance (CO) 7pF max Drive Level 50µW typical, 1mW max Aging @ 25°C ±5ppm per year Screening / Testing Available per MIL-3098	Operating Temperature	0 to 200°C Std, Custom Options available
Equivalent Series Resistance (ESR) See Operation Mode and ESR Table Shunt Capacitance (CO) 7pF max Drive Level 50µW typical, 1mW max Aging @ 25°C ±5ppm per year Screening / Testing Available per MIL-3098	Storage Temperature	-55°C to +240°C
Shunt Capacitance (CO) 7pF max Drive Level 50µW typical, 1mW max Aging @ 25°C ±5ppm per year Screening / Testing Available per MIL-3098	Equivalent Series Resistance (ESR)	See Operation Mode and ESR Table
Drive Level 50μW typical, 1mW max Aging @ 25°C ±5ppm per year Screening / Testing Available per MIL-3098	Shunt Capacitance (CO)	7pF max
Aging @ 25°C ±5ppm per year Screening / Testing Available per MIL-3098	Drive Level	50µW typical, 1mW max
Screening / Testing Available per MIL-3098	Aging @ 25°C	±5ppm per year
	Screening / Testing Available	per MIL-3098

All specifications subject to change without notice. *Note: For frequencies less than 3.6 MHz use Crystal Oscillator in 5x7mm or 7x7mm packages.

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

Material
Ceramic Base with Gold Pads
Gold Plated Kovar Walls & Lid

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

Operation Mode and ESR Table

Freq (MHz)	Mode	MAX ESR
3.6 - 4.1	Fundamental	150
4.2 - 4.9	Fundamental	100
5.0 - 7.9	Fundamental	80
8.0 - 14.9	Fundamental	50
15.0 - 30.9	Fundamental	25
31.0 - 42.0	Fundamental	35
24.0 - 59.9	3rd Overtone	40
60.0 - 81.9	3rd Overtone	50
82.0 - 104.0	3rd Overtone	60
105.0 - 125.0	3rd Overtone	70

Pad Configuration		
Pad	Function	
1	Connect	
2	No-Connect	
3	Connect	
4	No-Connect	



Land Pattern

Dimensions: mm

Bottom View

Issue 8 | 01112013

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



FREQUENCY MANAGEMENT | INTERNATIONAL 15302 Bolsa Chica Street Huntington Beach, CA 92649 ph (714) 373-8100 | fx (714) 373-8700

1-714-373-8100 1-800-800-XTAL [9825] www.fmi-inc.com

CERAMIC SMD

