



ISSUE 13; February 2012 - RoHS 2011/65/EU

**Description**

- Standard 7 x 5mm SMD crystal. 7 x 5mm SMD crystal available in three different pad designs and two different package materials. 12SMX-A, -C, -D are ceramic package with a resin sealed ceramic lid, hermetically sealed. 12SMX-B is a ceramic package with a seam sealed metal lid, hermetically sealed. Please Note: 12SMX-B is the standard package style. For low profile version of a 7 x 5mm crystal please see our 14SMX. For tighter tolerances and stabilities please see our 14SMX. Stock parts available.

**Frequency Range**

- Frequency 6.0 to 84.0Mhz
- Frequency Tolerance ±20ppm to ±100ppm

**General Specification**

- Load Capacitance (CL) 10.0pF to 75.0pF
- Drive Level 100µW max
- Ageing ±5ppm per year max
- Shunt Capacitance (C0) 7pF max

**Operating Temperature Ranges**

- 0 to 50°C
- 10 to 60°C
- 20 to 70°C
- 40 to 85°C

**Environmental Parameters**

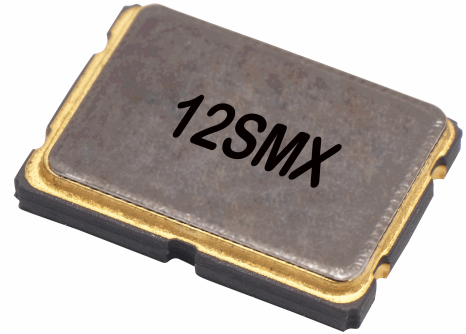
- Storage Temperature Range: -40 to 85°C

**Ordering Information**

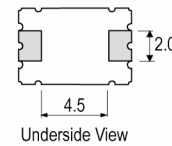
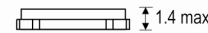
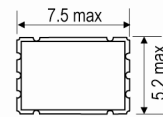
- Example  
10.0MHz 12SMX-B  
50/50/-20 to 70C/10 FUND
- Frequency\*
- Model\*
- Variant\*
- Frequency Tolerance (@25°C)\*
- Frequency Stability (over operating temperature range)\*
- Operating Temperature Range\*
- Load Capacitance\*
- Overtone

**Packing Details**

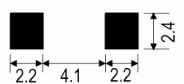
- Pack Style: **Bulk** Loose in bulk pack  
Pack Size 100
- Pack Style: **Reel** Tape and reel in accordance with EIA-481-D  
Pack Size 1,000
- Alternative packing options available



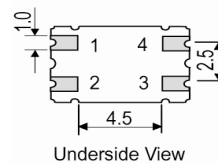
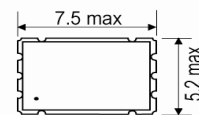
Outline (mm) -A = 2 pad (ceramic lid)



Solder Pad Layout



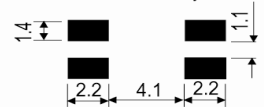
-B = 4 pad (metal lid)



Pad Connection

1. Crystal
2. GND & Lid
3. Crystal
4. GND & Lid

Solder Pad Layout



**Sales Office Contact Details:**

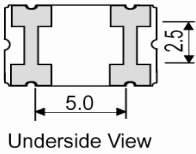
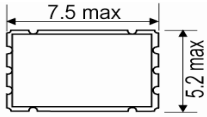
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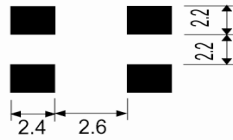


**-C = 2 into 4 pad (ceramic lid)**

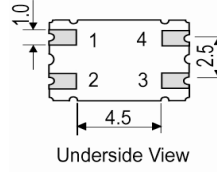
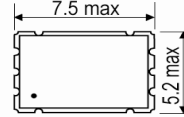


Underside View

**Solder Pad Layout**



**-D = 4 pad (ceramic lid)**

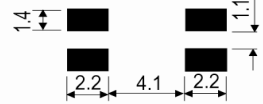


Underside View

**Pad Connection**

- 1. Crystal
- 2. NC
- 3. Crystal
- 4. NC

**Solder Pad Layout**



**Electrical Specification - maximum limiting values**

Frequency Range	Frequency Tolerance	Stability		Temperature Range	ESR Max	Vibration Mode
		Min	Max			
6.0 to <8.0MHz	±20 to ±100ppm	±20ppm ±20ppm ±20ppm ±30ppm	±100ppm	0 to 50°C -10 to 60°C -20 to 70°C -40 to 85°C	150Ω	Fundamental
8.0 to <10.0MHz	±20 to ±100ppm	±20ppm ±20ppm ±20ppm ±30ppm	±100ppm	0 to 50°C -10 to 60°C -20 to 70°C -40 to 85°C	80Ω	Fundamental
10.0 to <16.0MHz	±20 to ±100ppm	±20ppm ±20ppm ±20ppm ±30ppm	±100ppm	0 to 50°C -10 to 60°C -20 to 70°C -40 to 85°C	60Ω	Fundamental
16.0 to <50.0MHz	±20 to ±100ppm	±20ppm ±20ppm ±20ppm ±30ppm	±100ppm	0 to 50°C -10 to 60°C -20 to 70°C -40 to 85°C	40Ω	Fundamental
50.0 to <84.0MHz	±20 to ±100ppm	±20ppm ±20ppm ±20ppm ±30ppm	±100ppm	0 to 50°C -10 to 60°C -20 to 70°C -40 to 85°C	60Ω	3RD Overtone

*This document was correct at the time of printing; please contact your local sales office for the latest version*

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