

ISSUE 13; July 2016

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.
- A 2 pad (ceramic lid)
- A ceramic package with a resin sealed ceramic lid, hermetically sealed. 2 pad device.
- B 4 pad (metal lid)
- A ceramic package with a seam sealed metal lid, hermetically sealed. 4 pad device metal lid.
- C 2 into 4 pad (ceramic lid)
- A ceramic package with a resin sealed ceramic lid, hermetically sealed. 2 into 4 pad device.
- D 4 pad (ceramic lid)
- A ceramic package with a resin sealed ceramic lid, hermetically sealed. 4 Pad device, ceramic lid

Frequency Parameters

- Frequency 6.0MHz to 84.0MHz
- Frequency Tolerance $\pm 20.00\text{ppm}$ to $\pm 100.00\text{ppm}$
- Frequency Stability $\pm 20.00\text{ppm}$ to $\pm 100.00\text{ppm}$
- Ageing $\pm 5\text{ppm}$ per year max

Electrical Parameters

- Load Capacitance 10.0pF to 75.0pF
- Shunt Capacitance 7pF max
- Drive Level 100 μW max

Operating Temperature Ranges

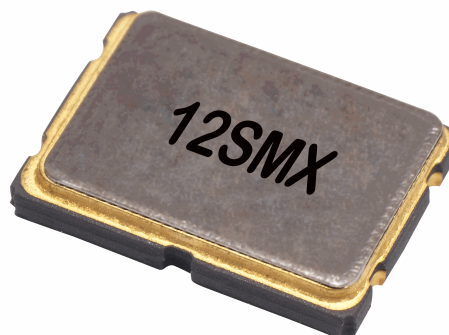
- 0 to 50°C
- 10 to 60°C
- 20 to 70°C
- 40 to 85°C

Environmental Parameters

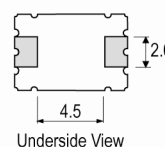
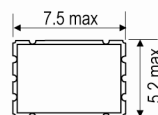
- Storage Temperature Range: -40 to 125°C

Ordering Information

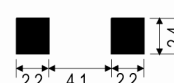
- Frequency*
- Model*
- Variant*
- Frequency Tolerance (@25°C)*
- Frequency Stability (over operating temperature range)*
- Operating Temperature Range*
- Load Capacitance*
- Overtone
- Example
10.0MHz 12SMX-B
50/50/-20 to 70C/10 FUND



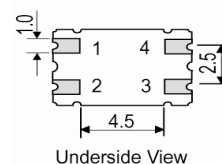
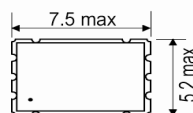
Outline (mm) -A = 2 pad (ceramic lid)



Solder Pad Layout

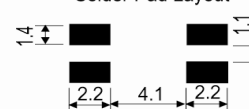


Outline (mm) -B = 4 pad (metal lid)



- #### Pad Connection
1. Crystal
 2. GND & Lid
 3. Crystal
 4. GND & Lid

Solder Pad Layout



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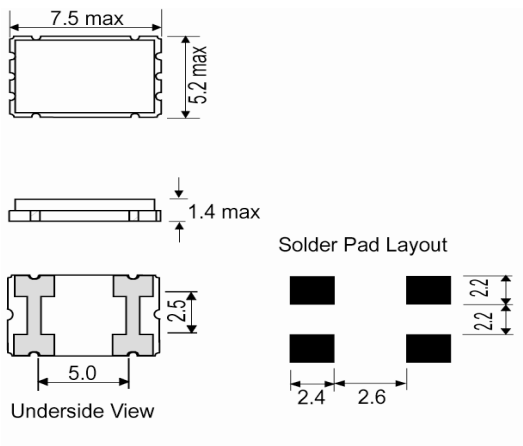
Compliance

- RoHS Status (2011/65/EU) Compliant
- REACH Status Compliant
- MSL Rating (JDEC-STD-033): Not Applicable

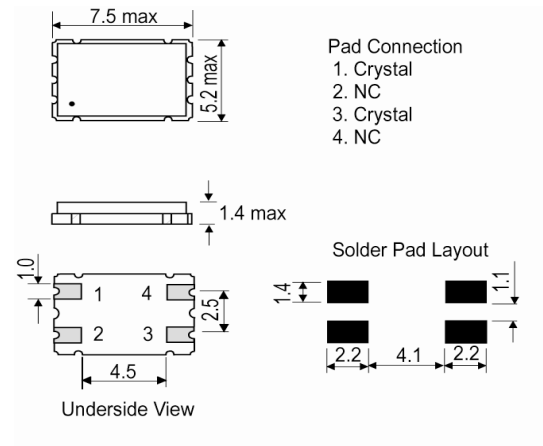
Packaging Details

- Pack Style: Bulk Loose in bulk pack
Pack Size: 100
- Pack Style: Reel Tape & reel in accordance with EIA-481-D
Pack Size: 1,000
- Pack Style: Cutt In tape, cut from a reel
Pack Size: 1

Outline (mm) -C = 2 into 4 pad (ceramic lid)



Outline (mm) -D = 4 pad (ceramic lid)



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Electrical Specification - maximum limiting values

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Over Tone Order	ESR
		°C	ppm		Ω
6.0MHz	7.999999MHz	0 to 50 -10 to 60 -20 to 70 -40 to 85	±20 ±20 ±20 ±30	Fundamental	150
8.0MHz	9.999999MHz	0 to 50 -10 to 60 -20 to 70 -40 to 85	±20 ±20 ±20 ±30	Fundamental	80
10.0MHz	15.999999MHz	0 to 50 -10 to 60 -20 to 70 -40 to 85	±20 ±20 ±20 ±30	Fundamental	60
16.0MHz	49.999999MHz	0 to 50 -10 to 60 -20 to 70 -40 to 85	±20 ±20 ±20 ±30	Fundamental	40
50.0MHz	84.0MHz	0 to 50 -10 to 60 -20 to 70 -40 to 85	±20 ±20 ±20 ±30	3rd Overtone	60

*Stability Maximum values ±100ppm

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