

ISSUE 14; April 2022

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 | ±20.00ppm to ±100.00ppm |
| ■ Frequency Stability | ±20.00ppm to ±100.00ppm |
| ■ Ageing | ±5ppm per year max |

Electrical Parameters

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

Operating Temperature Ranges

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

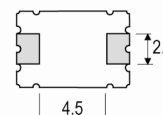
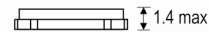
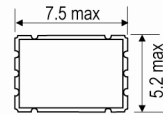
Environmental Parameters

- Storage Temperature Range: -40 to 125°C

Manufacturing Details

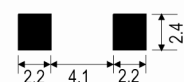
- | | |
|---------------------|-------------|
| ■ RoHS Terminations | NiAu |
| ■ RoHS Reflow | 260degC 10s |

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

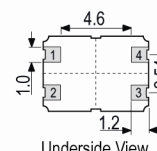
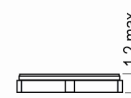
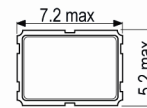


Underside View

Solder Pad Layout



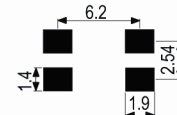
Outline (mm) -B = 4 pad (metal lid)



Underside View

- Pad connections
1. Crystal
 2. GND & Lid
 3. Crystal
 4. GND & Lid

Solder Pad Layout



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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

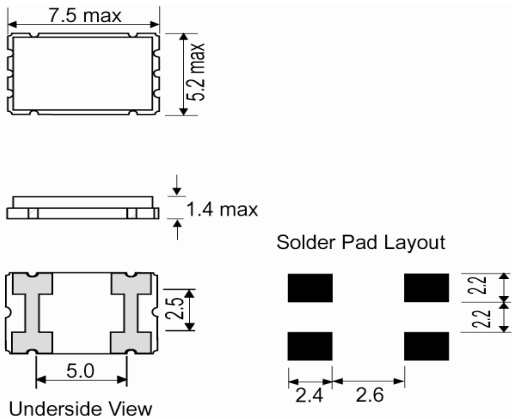
Compliance

- RoHS Status (2015/863/EU) Compliant
- REACH Status Compliant
- MSL Rating (JDEC-STD-033): Not Applicable

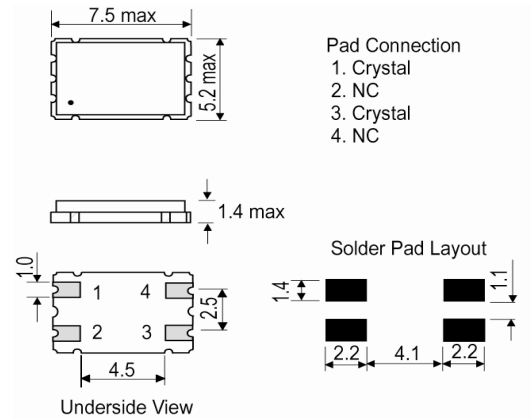
Packaging Details

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

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	±20	Fundamental	150
		-10 to 60	±20		150
		-20 to 70	±20		150
		-40 to 85	±30		150
8.0MHz	9.999999MHz	0 to 50	±20	Fundamental	80
		-10 to 60	±20		80
		-20 to 70	±20		80
		-40 to 85	±30		80
10.0MHz	15.999999MHz	0 to 50	±20	Fundamental	60
		-10 to 60	±20		60
		-20 to 70	±20		60
		-40 to 85	±30		60
16.0MHz	49.999999MHz	0 to 50	±20	Fundamental	40
		-10 to 60	±20		40
		-20 to 70	±20		40
		-40 to 85	±30		40
50.0MHz	84.0MHz	0 to 50	±20	3rd Overtone	60
		-10 to 60	±20		60
		-20 to 70	±20		60
		-40 to 85	±30		60

*Stability Maximum values ±100ppm

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