

# RSX-10



## SMD Communication Crystal

Low profile SMD AT-cut quartz crystal in a ceramic package with a 2.5 mm x 2.0 mm foot print.



### Product description

Miniature low profile AT-cut quartz crystal. True SMD style, ceramic package with nickel plated lid, seam welded. The product is supplied on tape and reel.

### Applications

- Handset
- GPS
- PDA
- PCMCIA CDPD cards
- Agriculture
- Automotive
- Consumer Products
- PND
- WiFi
- Communications
- Military
- Other

### Features

- Excellent shock and vibration performance
- Low aging

### Specifications

#### 1.0 SPECIFICATION REFERENCE

Line	Parameter	Description
1.1	Model Description	RSX-10
1.2	RoHS Compliant	Yes

#### 2.0 FREQUENCY CHARACTERISTICS

Line	Parameter	Test Condition	Value	Unit
2.1	Frequency range	Nominal frequency range available	16.368 to 52	MHz
2.2	Calibration tolerance	Frequency at 25°C ±2°C (Note 1)	±10 to 50	ppm
2.3	Frequency stability over temperature	Referenced to frequency reading at 25°C and the specified Load Capacitance (Note 2 )	±15 to 50	ppm
2.4	Temperature range	Maximum operating temperature available (Note 3)	-40 to 85	°C
2.5	Frequency perturbations	Peak-to-peak deviation from the frequency versus temperature curve fit 5th order. Minimum of 1 frequency reading every 3°C over operating temperature range (Note 3)	1 max	ppm
2.6	Static temperature hysteresis	Frequency change after reciprocal temperature ramped over the operating range. Frequency measured before and after at 25°C	±0.4 max	ppm
2.7	Short term stability	Root Allan Variance for 1 second Tau	1 max	ppb
2.8	Long term stability	Frequency drift over 1 year (Note 1)	±1 max	ppm
2.9	G sensitivity	Gamma vector of all three axes from 30 Hz to 1500 Hz typical values (Note 1)	2 max	ppb/G

**3.0 ELECTRICAL**

Line	Parameter	Test Condition	Value	Unit
3.1	Load capacitance (CL)	Frequency is calibrated to a load at room temperature. Value required to be specified (Note 4)	5 to 50	pF
3.2	Shunt capacitance	Operating specification	0.5 to 3	pF
3.3	Drive level	Operating specification	50 max	micro W

**4.0 EQUIVALENT SERIES RESISTANCE (ESR)**

Line	Parameter	Test Condition	Value	Unit
4.1	Fundamental	19.2 MHz to 52.0 MHz (Note 1)	60 max	Ohm

**5.0 ENVIRONMENTAL**

Line	Parameter	Description
5.1	Shock	Half sine-wave acceleration of 100G peak amplitude for 11 ms duration, 3 cycles in each plane
5.2	Humidity	After 48 hours at 85°C 85% relative humidity non-condensing
5.3	Thermal shock	Exposed at -40°C for 30 minutes then to 85°C for 30 minutes constantly for a period of 5 days
5.4	Vibration	10G RMS 30 Hz to 1500 Hz duration for 6 hours
5.5	Storage temperature	-55 to 105°C

**6.0 MANUFACTURING INFORMATION**

Line	Parameter	Description
6.1	Washing	Able to withstand aqueous washing process
6.2	Reflow	Able to withstand reflow process
6.3	Packaging description	Tape and Reel. 3000 pcs per reel standard. Refer to drawing for details

**7.0 MARKING**

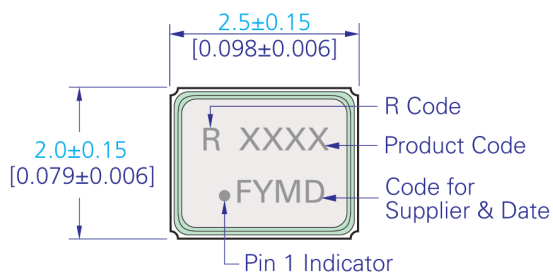
Line	Parameter	Description
7.1	Type	Laser engraved
7.2	Line 1	R and Product Code
7.3	Line 2	Pin 1 and Date Code

**8.0 SPECIFICATION NOTES**

Line	Parameter	Description
8.1	Note 1	The maximum value is the specification. A minimum value, if present, indicates the tightest specification available
8.2	Note 2	A maximum frequency stability over the temperature range needs to be specified. Available values will depend on temperature range selected
8.3	Note 3	The operating temperature range needs to be specified
8.4	Note 4	The frequency is calibrated to a load between minimum/maximum. Note that Series Resonance options are available for this model, and under certain conditions, loads above 50 pF may also be available

**Drawing Name: RSX-10 Model Drawing**

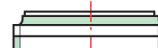
MODEL DRAWING



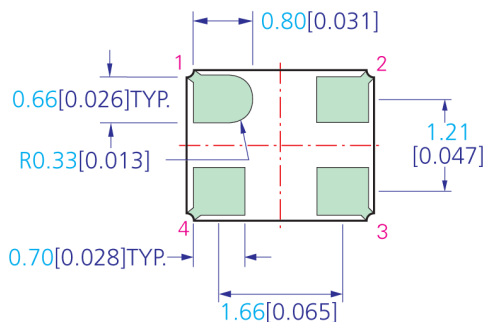
TOP VIEW



SIDE VIEW



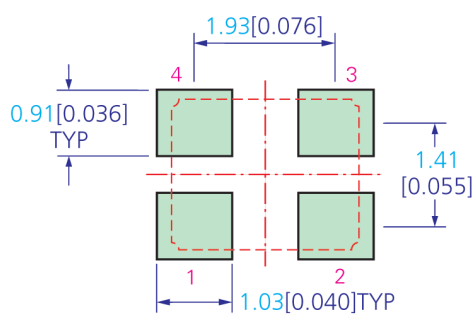
END VIEW



BOTTOM VIEW

PIN CONNECTIONS	
1	CRYSTAL
2	GND
3	CRYSTAL
4	GND

RECOMMENDED PAD LAYOUT - TOP VIEW



TITLE: RSX-10 MODEL

RELATED DRAWINGS:

FILENAME: CAT450

REVISION: E

DATE: 29-Apr-11

SCALE: 10 : 1

Millimeters [inch]

Tolerance:

XX = ±0.5

X.X = ±0.2

X.XX = ±0.10

X.XXX = ±0.05

X° = ±1.0°

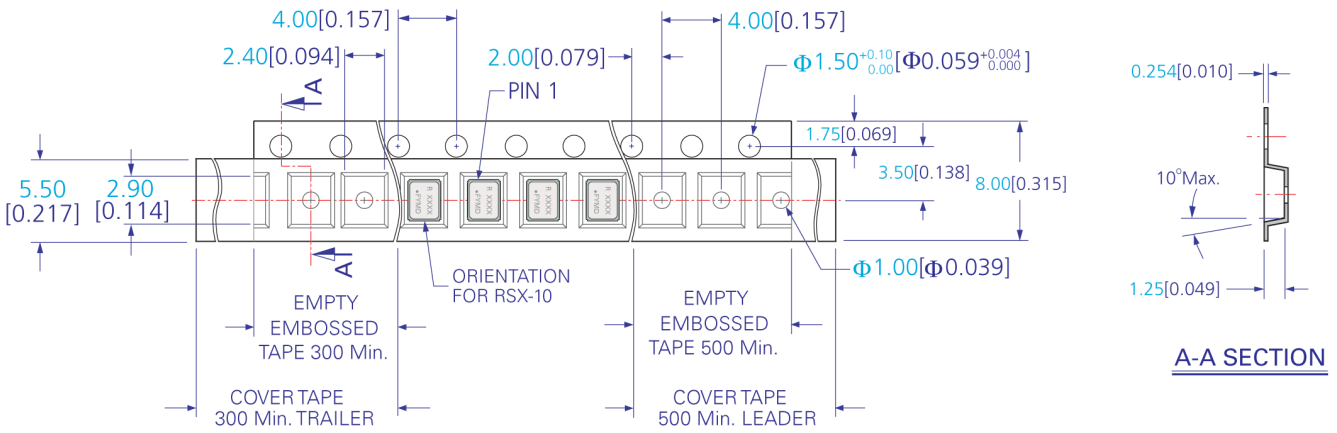
Hole = ±0.10

**rakon**

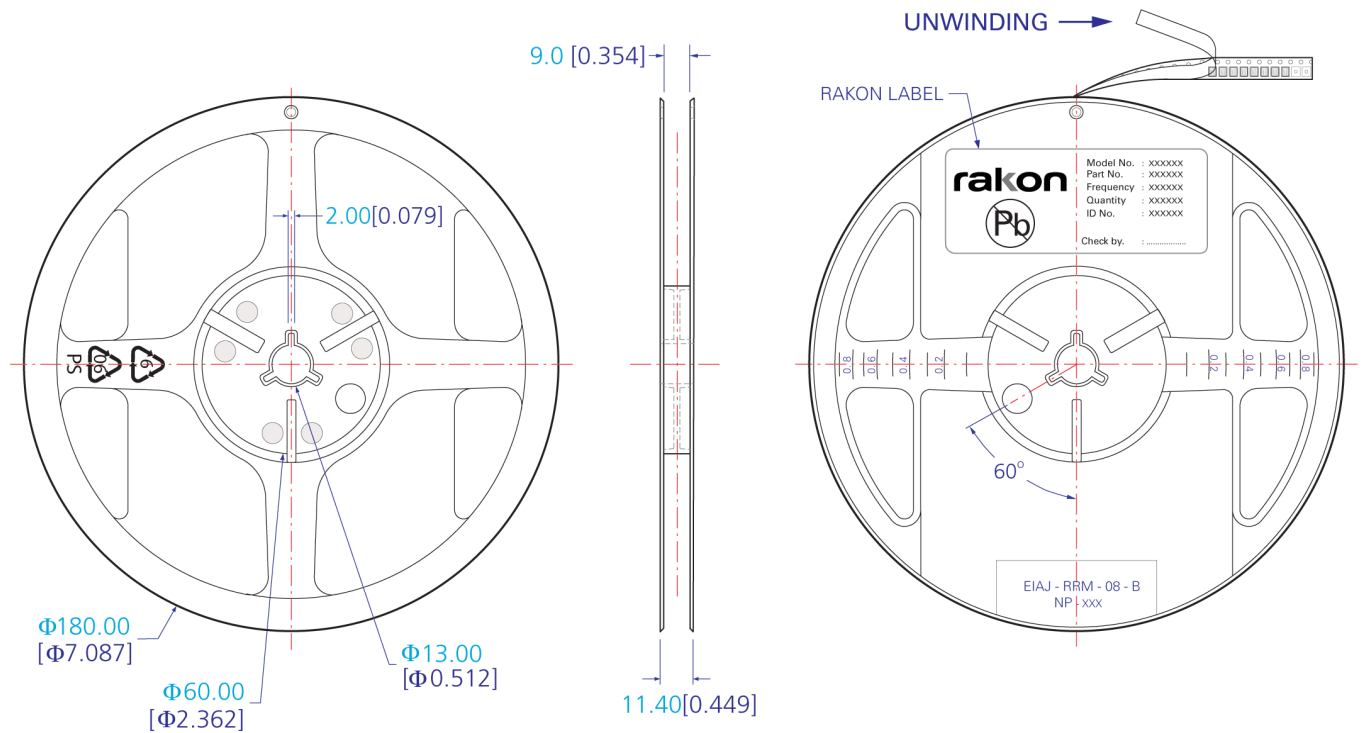
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# Drawing Name: RSX-10 Tape & Reel

## TAPE DETAIL (SCALE 2 : 1)



## REEL DETAIL (SCALE 1 : 2.5)



NOTE: 1.  $\Phi 180$ mm REEL STANDARD PACKING QUANTITY IS 3000 CRYSTALS PER REEL.

TITLE: RSX-10 TAPE &  $\Phi 180$  REEL

RELATED DRAWINGS:

FILENAME: CAT492

REVISION: B

DATE: 11-Feb-09

SCALE: See Above

Millimeters [inch]

Tolerance:

XX =  $\pm 0.5$

X.X =  $\pm 0.2$

X.XX =  $\pm 0.10$

X.XXX =  $\pm 0.05$

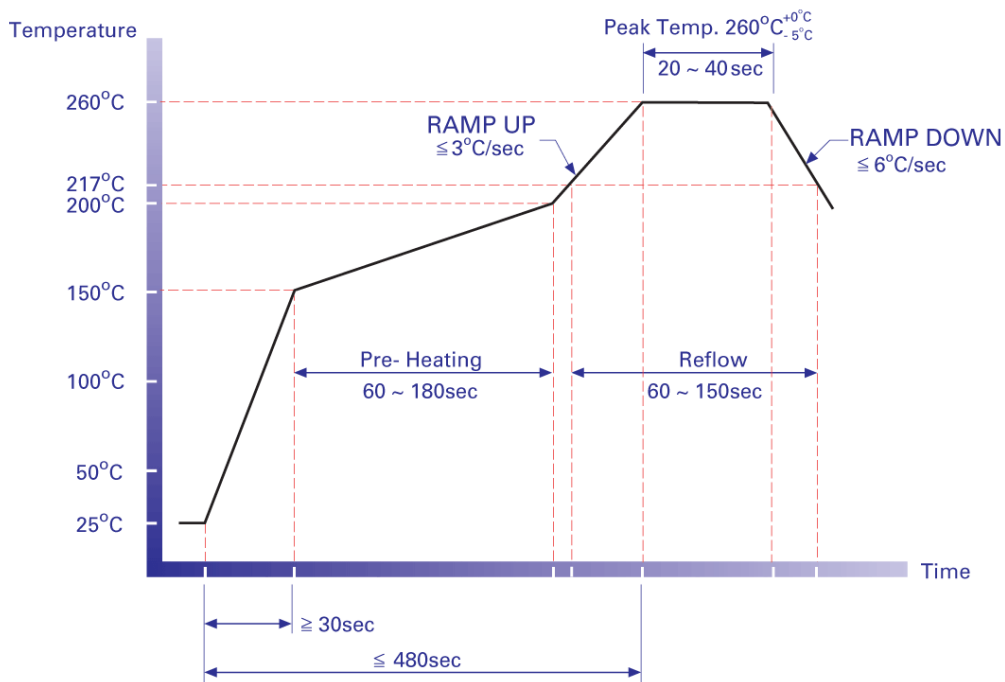
X° =  $\pm 1.0^\circ$

Hole =  $\pm 0.10$

**rakon**

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**Drawing Name: RSX/RGX Crystals Pb-free Reflow**



**NOTE:**

The product has been tested to withstand the Reflow Profile shown. The Reflow Profile used to solder Rakon RSX/RGX crystals are determined by the solder paste manufacturer's specification. It is recommended that the Reflow Profile used does not exceed the one shown above.

TITLE: RSX/RGX CRYSTALS Pb-FREE REFLOW

FILENAME: CAT353

RELATED DRAWINGS:

REVISION: B

DATE: 01-Feb-07

SCALE: NTS

Millimetres [inch]



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