

RSX-8



SMD Communication Crystals

Low profile SMD AT-cut quartz crystal in a ceramic package with a 3.2mm x 2.5mm footprint.



Product description

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

Applications

- Handset
- GPS
- PDA
- Automotive
- Consumer Products
- PND
- Communications
- Military
- Other

Features

- Excellent shock and vibration performance
- Low aging
- Very good short term stability

Specifications

1.0 SPECIFICATION REFERENCES

Line	Parameter	Description
1.1	Model Description	RSX-8
1.2	RoHS compliant	Yes
1.3	Reference number	
1.4	Rakon part number	

2.0 FREQUENCY CHARACTERISTICS

Line	Parameter	Test Condition	Value	Unit
2.1	Fundamental frequency range	Frequency range available	16 to 40	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)	±10 to 50	ppm
2.4	Temperature range	Maximum operating temperature available (Note 3)	-55 to 105	°C
2.5	Frequency perturbations	Peak-to-peak deviation from the frequency versus temperature curve fit. Minimum of 1 frequency reading every 3°C over operating temperature range (Note 3)	0.1 to 1	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 30Hz to 1500Hz, 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	Pullability	Load and crystal design dependant	0.5 min	ppm/pF
3.4	Drive level	Operating specification	50 max	μ W

4.0 EQUIVALENT SERIES RESISTANCE (ESR)

Line	Parameter	Test Condition	Value	Unit
4.1	Fundamental	16MHz to 40MHz (Note 1)	60 max	Ω

5.0 ENVIRONMENTAL

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

6.0 MANUFACTURING INFORMATION

Line	Parameter	Description
6.1	Reflow	Able to withstand solder reflow process
6.2	Packaging description	Tape and Reel. Standard packing quantity is 3000 units per reel

7.0 MARKING

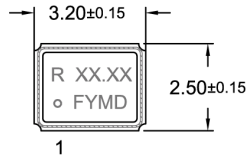
Line	Parameter	Description
7.1	Type	Laser engraved
7.2	Line 1	Rakon Logo and the last four characters of the Internal Part Number
7.3	Line 2	Pin 1 mark and Date Code

8.0 SPECIFICATION NOTES

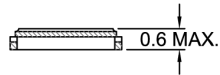
Line	Parameter	Description
8.1	Note 1	The maximum value is the specification. A minimum value, if present, indicates the tightest specification available
8.2	Note 2	A maximum frequency stability over the temperature range needs to be specified. For this model, values between ± 1 and ± 25 ppm are available
8.3	Note 3	The operating temperature range needs to be specified
8.4	Note 4	The frequency of the crystal is calibrated to a load between minimum and maximum. Series Resonance options are available for this model, and under certain conditions, loads above 50pF may also be available

Drawing Name: RSX-8 Model Drawing

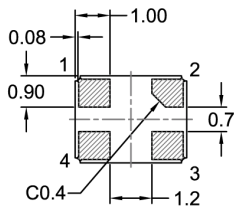
MODEL OUTLINE



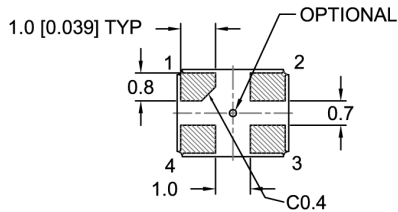
TOP VIEW



FRONT VIEW

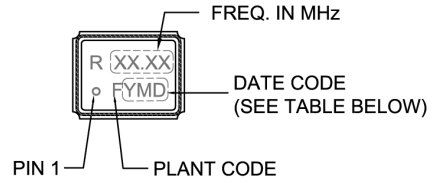


BOTTOM VIEW (Type 1)



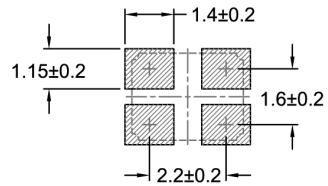
BOTTOM VIEW (Type 2)

MARKING EXAMPLE



PIN CONNECTIONS	
1	CRYSTAL
2	GND
3	CRYSTAL
4	GND

RECOMMENDED PAD LAYOUT - TOP VIEW



Y - YEAR CODE

YEAR	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
CODE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z

M - MONTH CODE

MONTH	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
CODE	1	2	3	4	5	6	7	8	9	A	B	C

D - DAY CODE

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
CODE	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V

TITLE: RSX-8 MODEL

RELATED DRAWINGS:

FILENAME: CAT257

REVISION: G

DATE: 11-Aug-11

SCALE: 5 : 1

Millimetres [inch]

TOLERANCES:

X.X = ±0.2

X.XX = ±0.10

Unless

Otherwise

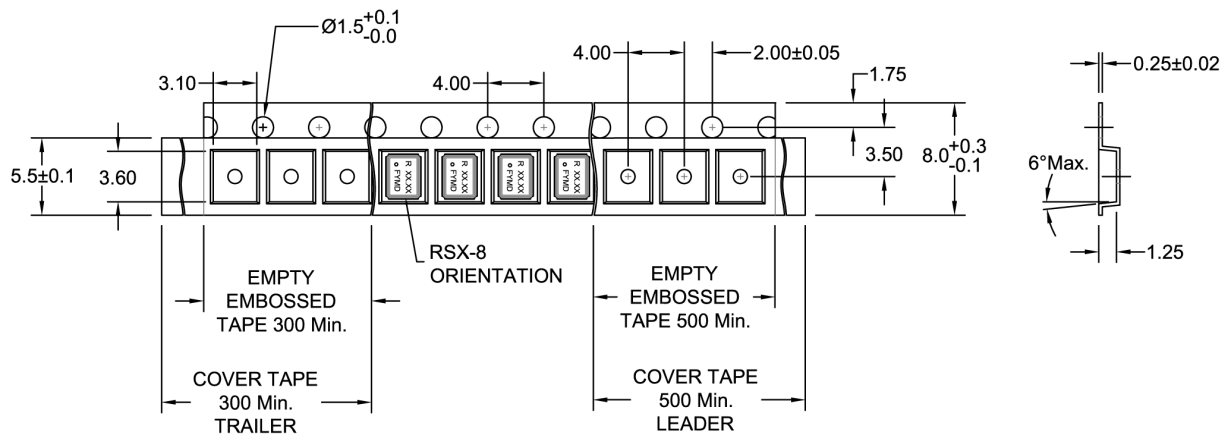
Specified



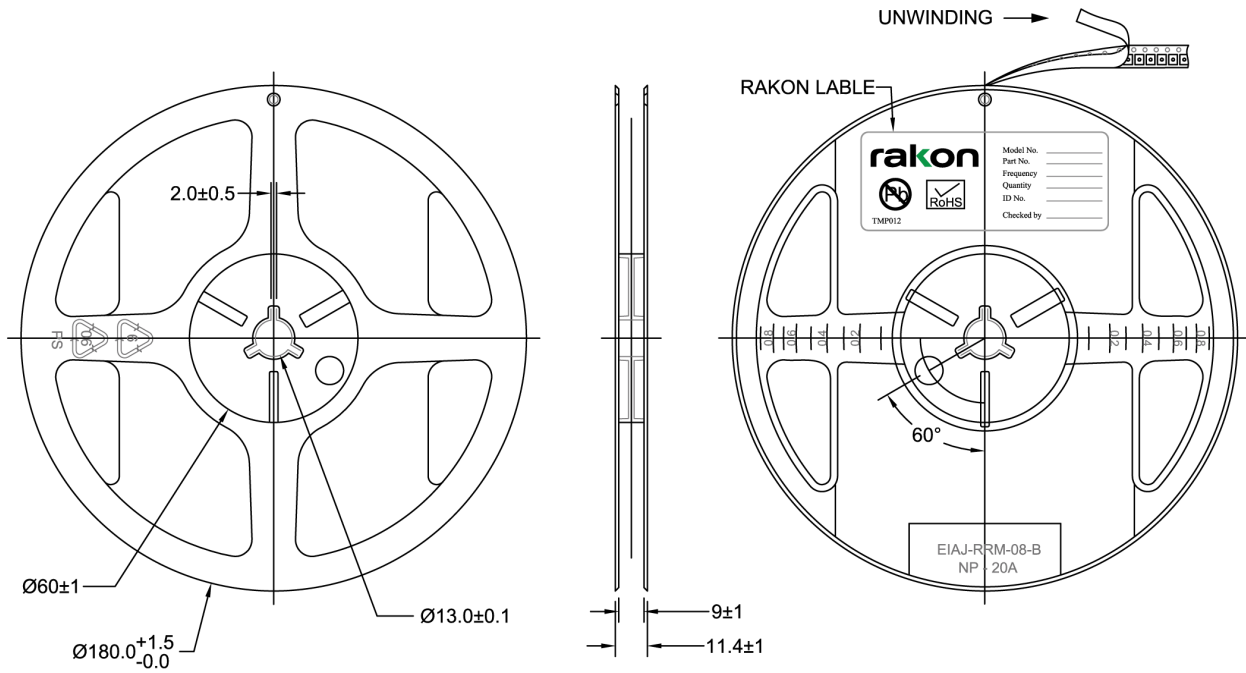
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Drawing Name: RSX-8 Tape & Reel

TAPE DETAIL (SCALE 2 : 1)



REEL DETAIL (SCALE 1 : 2.5)



TITLE: RSX-8 TAPE & REEL

RELATED DRAWINGS:

FILENAME: CAT386

REVISION: D

DATE: 11-Aug-11

SCALE: 2 : 1

Millimetres [inch]

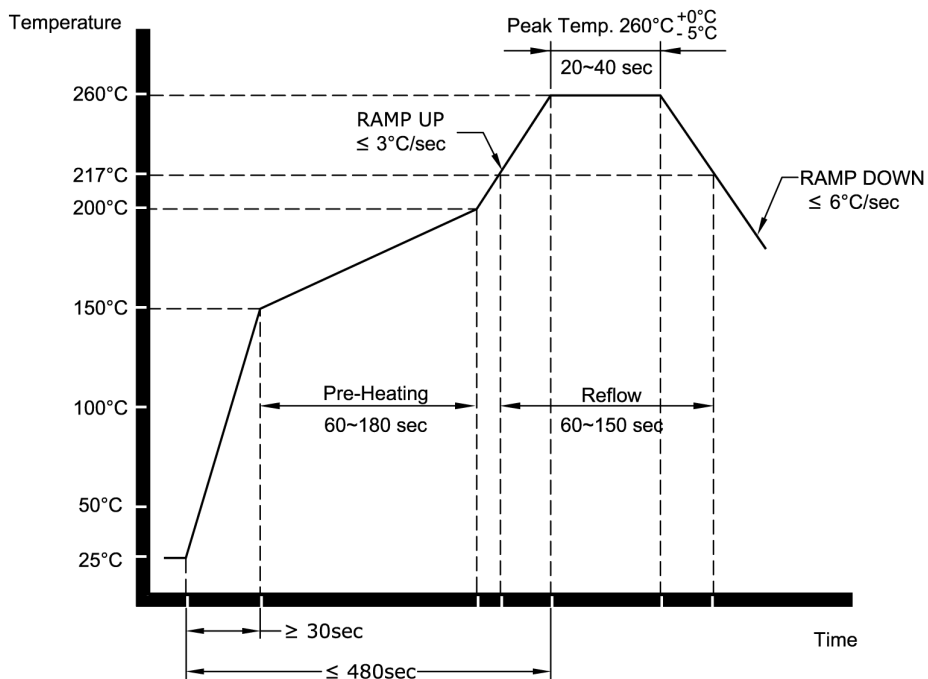
TOLERANCES:

XX =
 X.X = ±0.2
 X.XX = ±0.10
 X.XXX =
 X° =
 Hole =



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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 CRYSTAL Pb-FREE REFLOW

FILENAME: CAT353

RELATED DRAWINGS:

REVISION: B

DATE: 01-Feb-07

SCALE: NTS

Millimetres [inch]



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