RSX-5

rakon

SMD Communication Crystals

Low profile SMD AT-cut quartz crystal in a ceramic package with a 5 mm x 3.2 mm 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
- PND
- Communications
- Military

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-5
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	Frequency		12 to 40	MHz
2.2	Calibration tolerance	Frequency at 25°C ±2°C and specified load capacitance	±5 to 25	ppm
2.3	Reflow shift	Two consecutive reflow as per attached profile after 4 hours recovery at 25°C	±1 max	ppm
2.4	Frequency stability over temperature	Referenced to frequency reading at 25°C and the specified load capacitance	±5 to 50	ppm
2.5	Temperature range	Operating temperature	-55 to 105	°C
2.6	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	0.1 to 1	ppm
2.7	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
2.8	Long term stability	Frequency drift over 1 year at 25°C	±1 max	ppm
2.9	g Sensitivity	Gamma vector of all three axes from 30Hz to 1500Hz	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.	5 to 50	pF
3.2	Shunt capacitance (C0)	Operating specification	3 max	pF
3.3	Pullability		3 min	ppm/pF
3.4	Drive level	Operating specification	100 max	µW
3.5	Equivalent series resistance (ESR). Fundamental		40 max	Ω
3.6	Insulation resistance (IR)	100V ±15V at 25°C	500 min	MΩ

4.0 ENVIRONMENTAL

Line	Parameter	Description
4.1	Shock	Half sine-wave acceleration of 100g peak amplitude for 11ms duration, 3 cycles in each plane
4.2	Humidity	After 48 hours at 85˚C 85% relative humidity non-condensing
4.3	Thermal shock	Exposed at -40˚C for 30 minutes then to 85˚C for 30 minutes constantly for a period of 5 days.
4.4	Vibration	10g RMS 30Hz to 1500Hz duration of 6 hours.
4.5	Storage temperature	-55 to 105˚C

5.0 MANUFACTURING INFORMATION

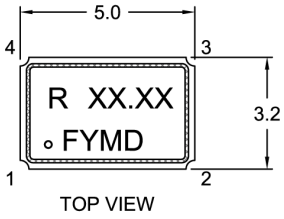
Line	Parameter	Description
5.1	Reflow	Able to withstand solder reflow process
5.2	Packaging description	Tape and Reel. 2000pc per reel standard. Refer to drawing for details

6.0 MARKING

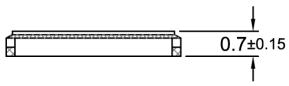
Line	Parameter	Description
6.1	Type	Laser engraved
6.2	Line 1	R and frequency in MHz [XX.XX]
6.3	Line 2	Pin 1 mark and Date code

Drawing Name: RSX-5 Model Drawing

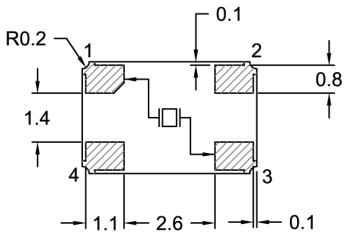
MODEL OUTLINE



TOP VIEW

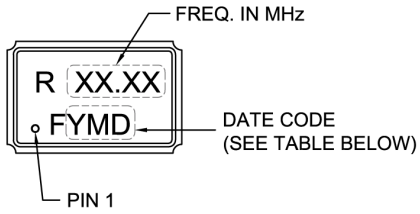


FRONT VIEW



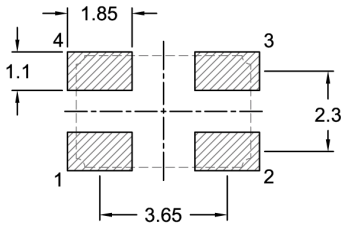
BOTTOM VIEW

MARKING EXAMPLE



	PIN CONNECTIONS
1	CRYSTAL
2	GND
3	CRYSTAL
4	GND

RECOMMENDED PAD LAYOUT - TOP VIEW



Y - Year Code

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

M - Month Code

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

D - Day Code

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

TITLE: RSX-5 MODEL

RELATED DRAWINGS:

FILENAME:	CAT126
REVISION:	H
DATE:	20-Sep-11
SCALE:	5 : 1
Millimetres	

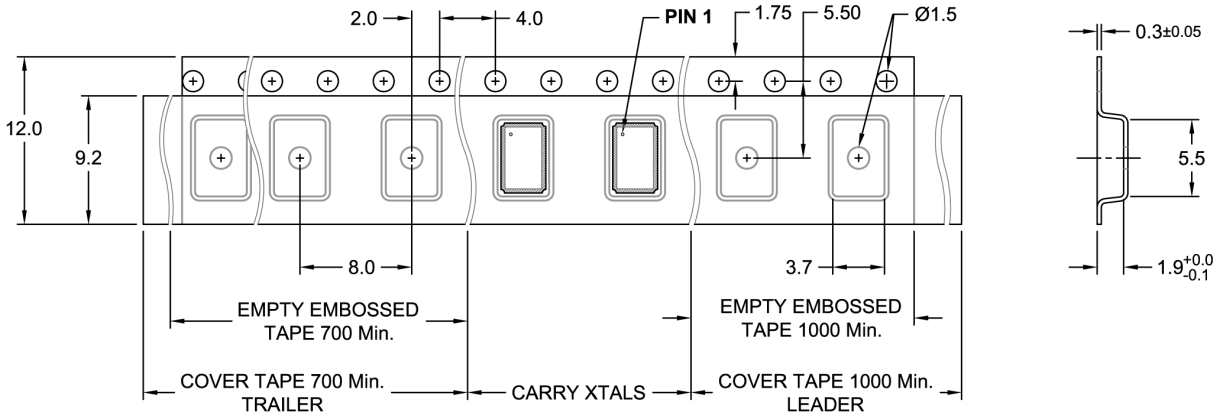
TOLERANCES:
XX
X.X = ±0.2
X.XX = ±0.10
X.XXX
X°
Hole

rakon

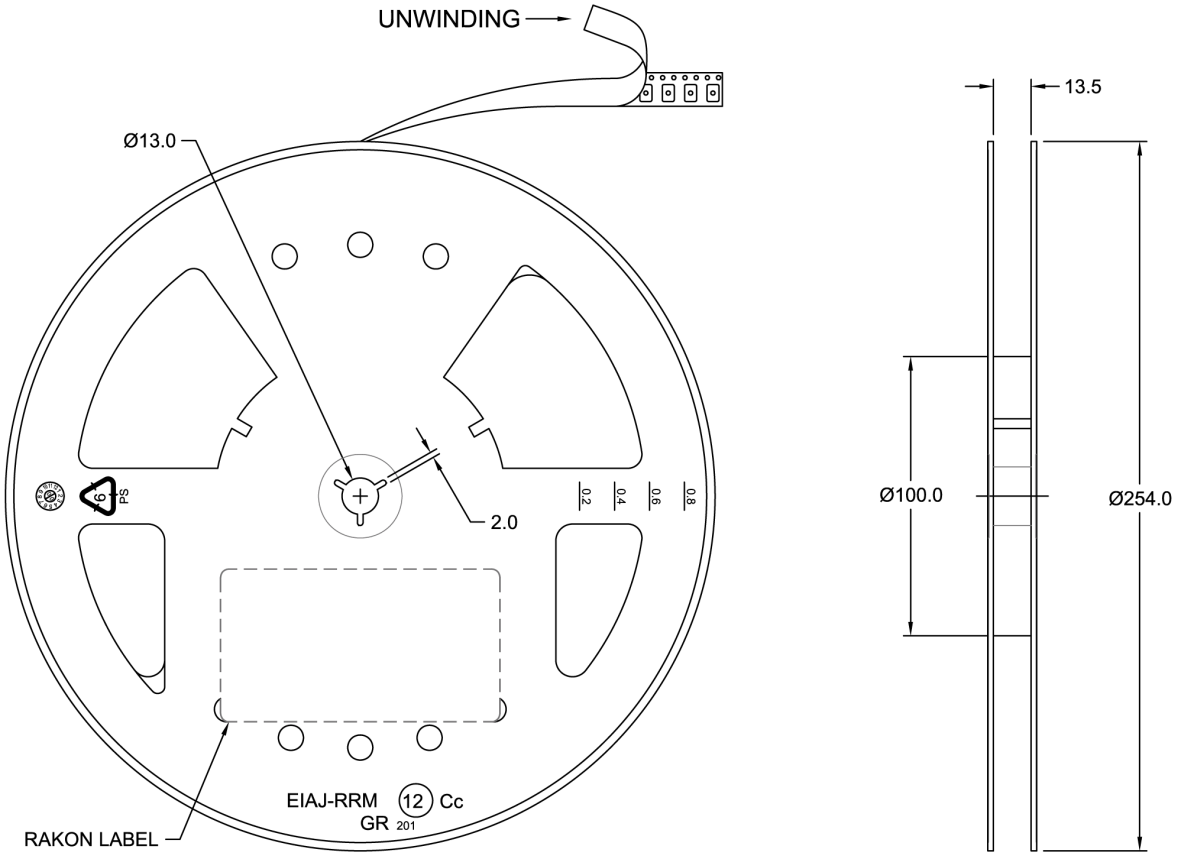
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Drawing Name: RSX-5/RGX-5 Series Tape & Reel

TAPE DETAIL (SCALE 2 : 1)



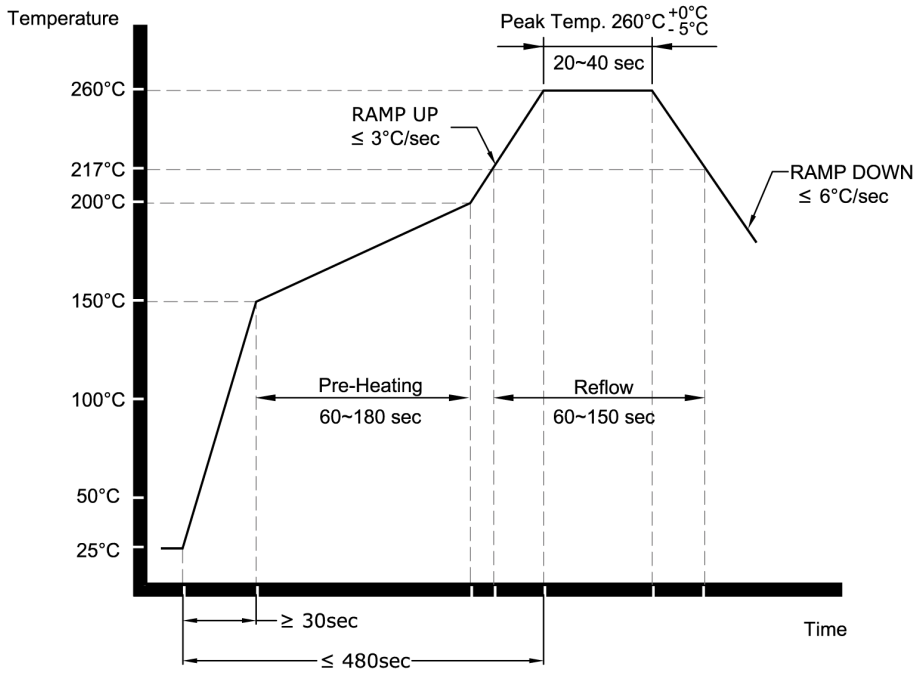
REEL DETAIL (SCALE 1 : 2.5)



TITLE: RSX-5/RGX-5/RSX-6/RGX-6 SERIES TAPE & REEL	FILENAME: CAT127	TOLERANCES: XX X.X = ±0.2 X.XX = ±0.10 X.XXX X° Hole	rakon
RELATED DRAWINGS:	REVISION: I		
	DATE: 20-Sep-11		
	SCALE: 2 : 1		
	Millimetres		

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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

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