

RXO3225M

1.0 Specification References

Parameter	Description
a. Rakon part number	513371
b. Description	RXO3225M 40.000 MHz
c. Document ID	RXO3225M-08



2.0 Absolute Maximum Rating ¹

Parameter	Min.	Max.	Unit
a. Power supply	-0.5	+4.2	V
b. Storage temperature	-55	125	°C

3.0 Frequency Characteristics

Parameter	Min.	Typ.	Max.	Unit	Test Condition / Description
a. Nominal frequency		40.000		MHz	
b. Temperature range	-40		85	°C	
c. Frequency stability			±25	ppm	Including initial calibration, temperature range, supply variation and load variation
d. Long term stability			±3 ±1	ppm ppm/yr	First year, at 25°C After first year, at 25°C

4.0 Power Supply

Parameter	Min.	Typ.	Max.	Unit	Test Condition / Description
a. Supply voltage (V_{DD})		1.8		V	With a tolerance of ±5%
b. Supply current		1.7	10	mA	For LVCMOS

5.0 Output Characteristics – CMOS

Parameter	Min.	Typ.	Max.	Unit	Test Condition / Description
a. Output voltage (V_{OL})			10% V_{DD}	V	15pF load
b. Output voltage (V_{OH})	90% V_{DD}			V	15pF load
c. Duty cycle	45		55	%	At 50% V_{DD}
d. Rise and fall time			5	ns	90%/10%
e. RMS Phase Jitter			0.5	ps	Integrated from 12kHz to 20MHz

¹ Operating beyond this limit may result in change or permanent damage to the device.

6.0 Pin Connections

Parameter	4 Pin Connections
a. Pin 1	E/D*
b. Pin 2	GND
c. Pin 3	Output
d. Pin 4	V _{DD}
e. * Output Enabled	>70% of V _{DD} on E/D, or E/D pin left open (Connected to internal pull-up resistor)
f. * Output Disabled	<30% of V _{DD} on E/D, or E/D pin to GND

7.0 Marking and Package

Parameter	Test Condition / Description
a. Package	3.2 x 2.5 mm, Package AG
b. Type	Engraved
c. Line 1	[R] = Rakon, [##M#] = Frequency in MHz (e.g.: 8M00 = 8MHz, 19M2 = 19.2MHz), [YM]=Date code (Year code* and Month code** e.g.: 5A = 2015, January)
d. Line 2	[o] = Pin 1, [A_] = Internal code, [XXX] Lot code
e. Year code*	Y = Last 1 digit of the year (e.g.: 5A = 2015)
f. Month code**	MONTH : 1 2 3 4 5 6 7 8 9 10 11 12 CODE : A B C D E F G H J K L M (e.g.: 5A= January)

8.0 Manufacturing Information

Parameter	Test Condition / Description
a. Reflow	Solder reflow process as per attached profile
b. Packaging description	Tape and reel. Standard packing quantity is 3000 units per Ø180 mm reel

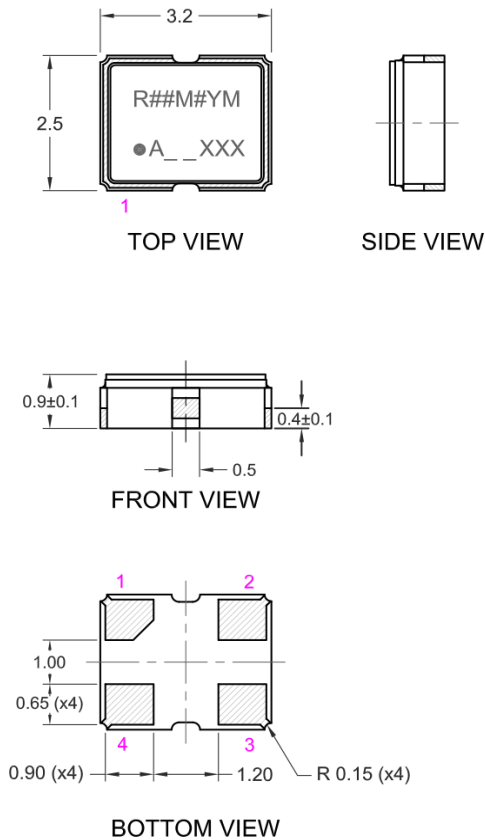
9.0 Environmental Specification

Parameter	Test Condition / Description
a. RoHS compliant	Yes
b. Shock	Free dropping from 150 cm height 5 times on a hard wooden board
c. Moisture resistance	1000 ±12 hours at 85°C ±3°C, 90 – 95% relative humidity ²
d. Thermal cycling	The unit shall be subjected to 100 successive change of temperature cycles, then 25 ±2°C over 2 hours before testing, each cycle as below: Temperature Duration: 1. -40 +0/-6°C 30 ±3 minutes 2. 25°C ±2°C 2 – 3 minutes 3. 85 +4/-0°C 30 ±3 minutes 4. 25°C ±2°C 2 – 3 minutes
e. Vibration	Frequency: 10 – 200 Hz Amplitude (total excursion): 1.5 mm (10 – 36 Hz), 4G (36 – 200 Hz) Sweep time: 1 Min./1oct 3 direction time: 2 hours for each X, Y, Z axis

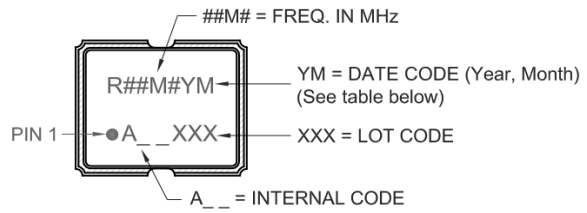
² Frequency shift ≤3ppm after environmental conditions.

10.0 Model Outline: RXO3225M

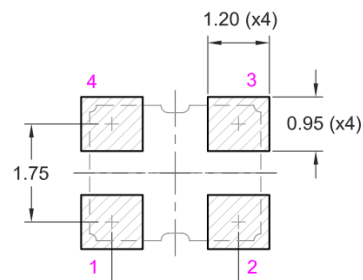
MODEL OUTLINE



MARKING



RECOMMENDED PAD LAYOUT - TOP VIEW



PIN CONNECTIONS

PIN	CONNECTIONS	PIN	CONNECTIONS
1*	VCO/NC	3	OUTPUT
2	GND	4	V _{DD}

* Depending on Specification.

Y - Year Code

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

M - Month Code

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

TITLE: XO/VCXO 3225 MODEL 4P (Package A)

RELATED DRAWINGS:

FILENAME: CAT1074

REVISION: A

DATE: 20-Jun-17

SCALE: N.T.S.

Millimetres

TOLERANCES:

XX =

X.X = ±0.15

X.XX = ±0.10

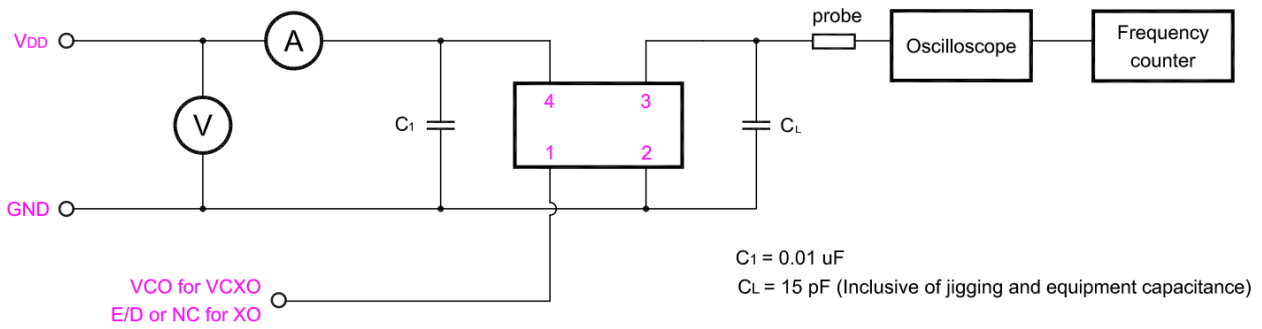
X.XXX =

X° =

Hole =

11.0 Test Circuit: RXO3225M (4 Pin)

CMOS/LVMOS TEST CIRCUIT



NOTE:

THIS SERIES HAS NO BY PASS CAPACITOR.WE RECOMMEND OUR CUSTOMER USE CAPACITOR 0.1 uF BETWEEN VDD AND GND.

TITLE: XO/VCXO 4 PIN SERIES TEST CIRCUIT (Package AG)

FILENAME: CAT1079

RELATED DRAWINGS:

REVISION: A

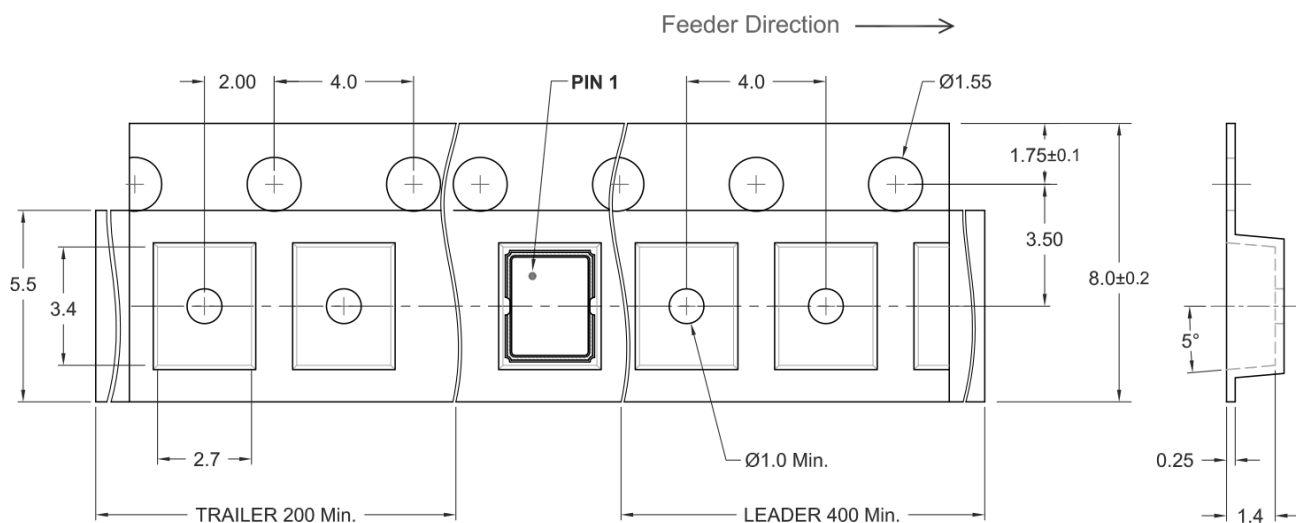
DATE: 05-Jul-17

SCALE: NTS

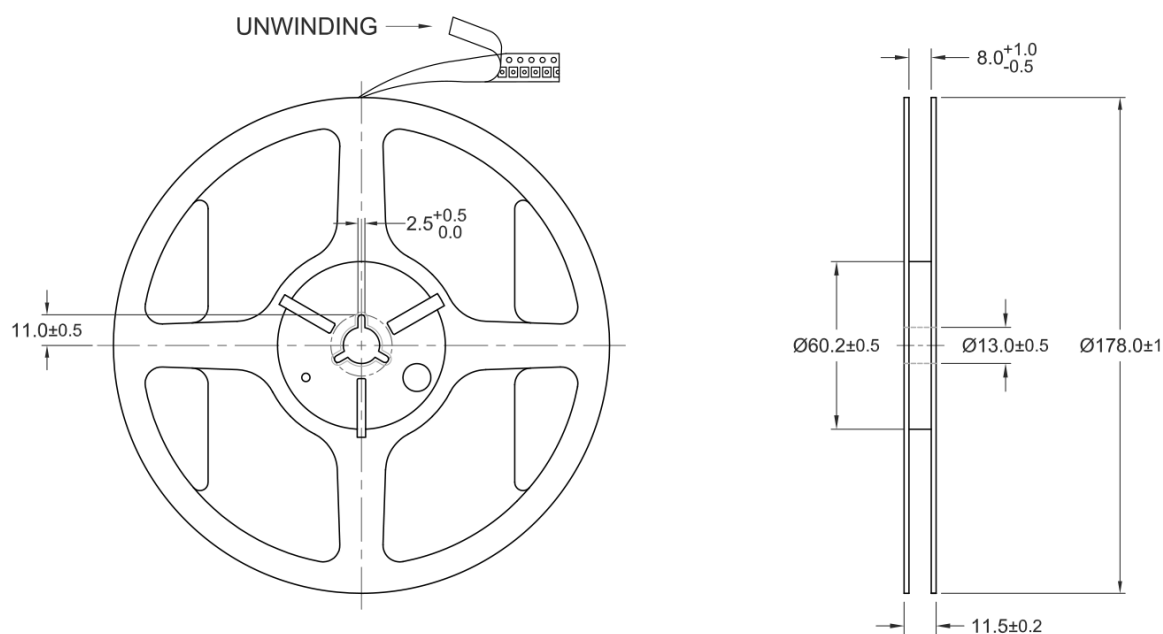
Millimetres

12.0 Tape and Reel (Ø180mm): RXO3225M

TAPE DETAIL (Scale 5 : 1)



REEL DETAIL (Scale 1 : 2.5)



TITLE: XO/VCXO 3225 TAPE & REEL

FILENAME: CAT1075

TOLERANCES:

RELATED DRAWINGS:

REVISION: A

XX =

X.X = ±0.2

X.XX = ±0.1

X.XXX =

X° =

Hole =

DATE: 20-Jun-17

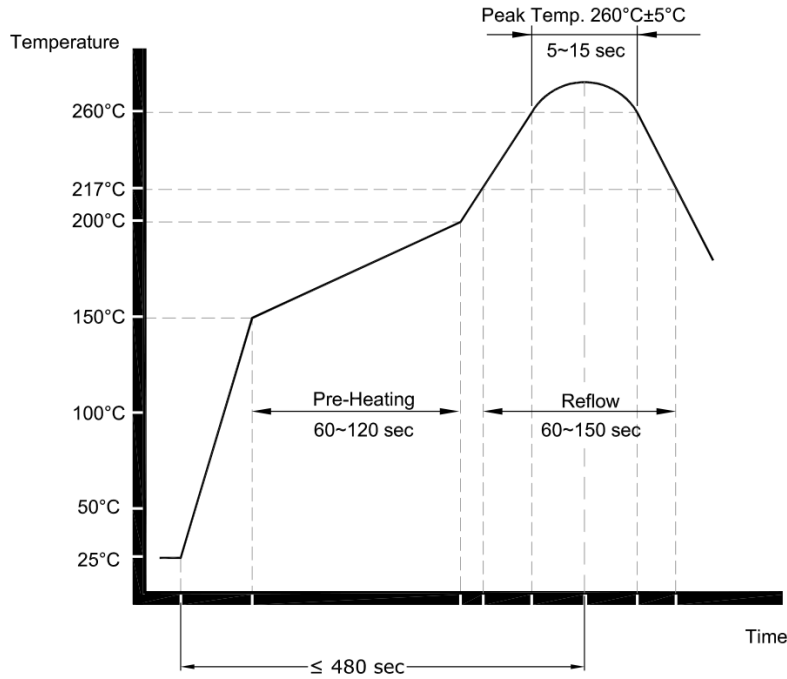
SCALE: AS ABOVE

Millimetres

rakon

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13.0 Reflow: RXO3225M



TITLE: Pb-FREE Reflow (Package A/AG)

RELATED DRAWINGS:

FILENAME: CAT1036

REVISION: B

DATE: 03-Mar-2017

SCALE: NTS

Millimetres

TOLERANCES:

XX =

X.X =

X.XX =

X.XXX =

X° =

Hole =

rakon

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14.0 Specification History

Version	Notes	Approver	Date
1.0	Specification created	Jack Farrant	11 Dec, 2014
1.1	Temperature stability updated to frequency stability, and conditions amended; long-term stability specification added; typical current draw added to specification	Jack Farrant	3 Sep, 2015
1.2	Updated package & drawings, laser marking and qualification information	Sowmya Injeti	13 Nov, 2017