

RVX7050M *(Preliminary)*

1.0 Specification References

Parameter	Description
a. Rakon part number	V4123
b. Description	RVX7050M 100.000 MHz CMOS 3V3 A50



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		100.000		MHz	
b. Temperature range	-40		85	°C	The operating temperature range over which the frequency stability is measured
c. Frequency stability			±50	ppm	Including initial calibration, temperature range, supply variation, load variation and 10 years aging at 25°C

4.0 Power Supply

Parameter	Min.	Typ.	Max.	Unit	Test Condition / Description
a. Supply voltage (V_{DD})		3.3		V	With a tolerance of ±5%
b. Supply current			60	mA	LVPECL Output Type

5.0 Control Voltage (VCO)

Parameter	Min.	Typ.	Max.	Unit	Test Condition / Description
a. Control voltage (V_c)	0.0	1.65	3.3	V	Positive slope
b. Absolute Pull range (APR)	±50			ppm	Reference to frequency at $V_c = 1.65V$
c. Linearity			10	%	Over the control voltage range
d. Modulation BW	10			kHz	Over the control voltage range
e. Input impedance	1			MΩ	

6.0 Output Characteristics – LVPECL

Parameter	Min.	Typ.	Max.	Unit	Test Condition / Description
a. Output voltage (V_{OL})			$V_{DD} - 1.6$	V	50Ω nominal load
b. Output voltage (V_{OH})	$V_{DD} - 1.03$			V	50Ω nominal load
c. Duty cycle	45		55	%	At $V_{DD} - 1.3V$
d. Rise and fall time			0.6	ns	80% / 20%

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

7.0 SSB Phase Noise (100MHz, at 25°C)

Parameter	Typ.	Max.	Unit	Test Condition / Description
a. 100Hz offset	-100		dBc/Hz	
b. 10kHz offset	-129		dBc/Hz	
c. RMS Phase Jitter		0.5	ps	Integrated from 12kHz to 20MHz

8.0 Pin Connections

Parameter	6 Pin Connections
a. Pin 1	VCO
b. Pin 2	E/D*
c. Pin 3	GND
d. Pin 4	OUTPUT
e. Pin 5	COMPLEMENTARY OUTPUT
f. Pin 6	V _{DD}
g. * Output Enabled	>70% of V _{DD} on E/D, or E/D pin left open (Connected to internal pull-up resistor)
h. * Output Disabled	<30% of V _{DD} on E/D, or E/D pin to GND

9.0 Marking and Package

Parameter	Test Condition / Description
a. Package	A
b. Top line	[R V4123]
c. Middle line	100.000M
d. Bottom line	[o FYWW] = Pin 1, Manufacturing code, Year code* and Week code**
e. Year code*	A = 2010, B = 2011, C = 2012, D = 2013, ... Z = 2035
f. Week code**	WW = 01 = Week of first Monday of the year

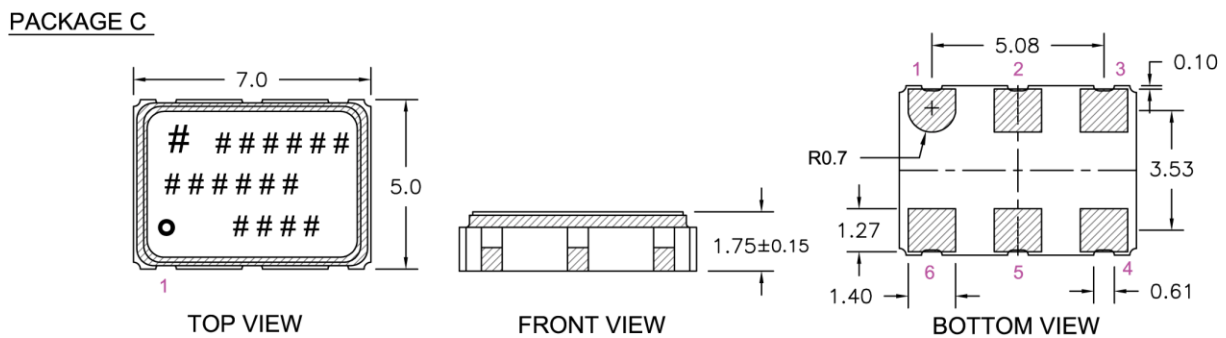
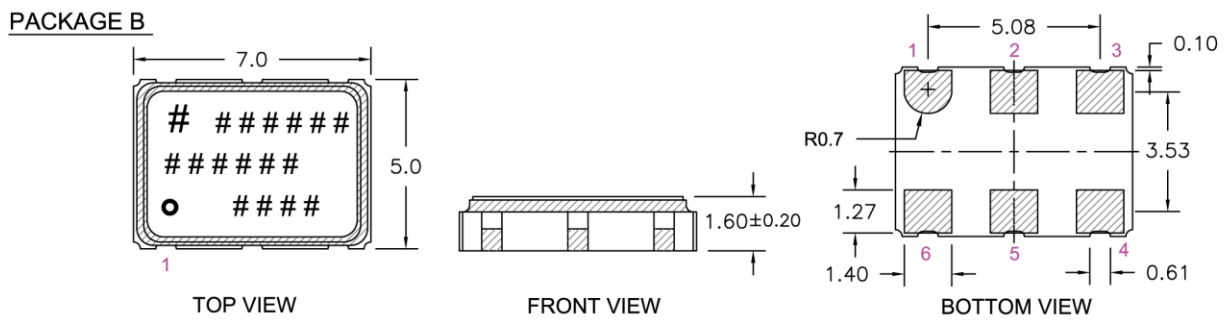
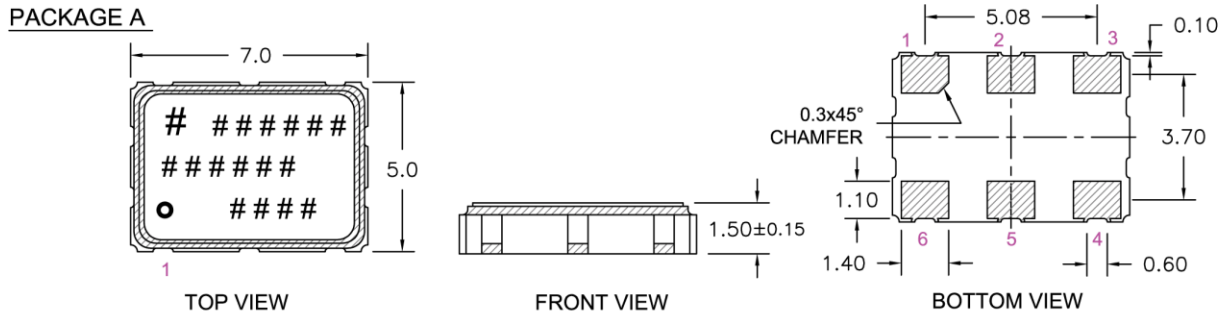
10.0 Manufacturing Information

Parameter	Test Condition / Description
a. Reflow	Solder reflow process as per attached profile
b. Packaging description	Tape and reel. Standard packing quantity is 2000 units per reel (CAT032)

11.0 Environmental Specification

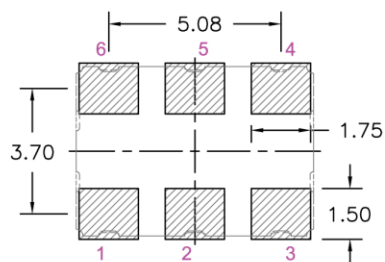
Parameter	Test Condition / Description
a. RoHS compliant	Yes
b. Mechanical shock	MIL-STD-883, Method 2002
c. Thermal shock	MIL-STD-883, Method 1011
d. Vibration	MIL-STD-883, Method 2007
e. Gross and fine leak	MIL-STD-883, Method 1014
f. Humidity	After 48 hours at 85°C ±2°C 85% relative humidity non-condensing

12.0 Model Outline: RVX7050M (Package A, B and C)



RECOMMENDED PAD LAYOUT

- TOP VIEW



NOTE :

1. PIN CONNECTIONS ARE DETAILED IN THE SPECIFICATION.
2. MARKING INFORMATION IS DETAILED IN THE SPECIFICATION.

TITLE: XO/VCXO 7050 SERIES MODEL

RELATED DRAWINGS:

FILENAME: CAT207

REVISION: J

DATE: 03-Apr-12

SCALE: 5 : 1

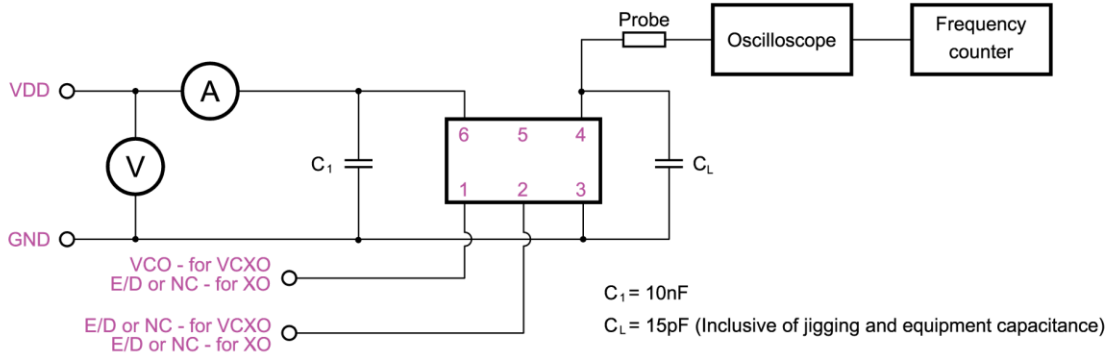
Millimetres

TOLERANCES:

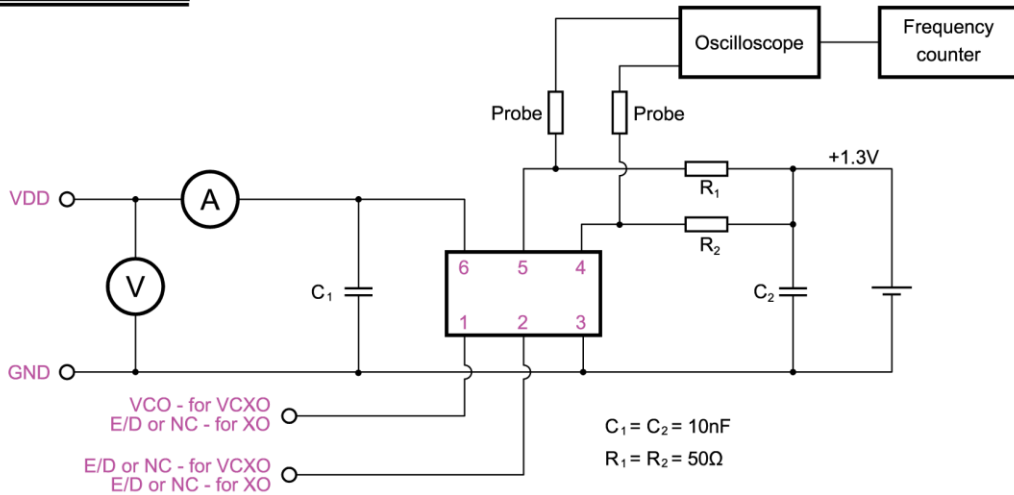
XX =
 X.X = ±0.15
 X.XX = ±0.10
 X.XXX =
 X° =
 Hole =

13.0 Test Circuit: RVX7050M (6 Pin)

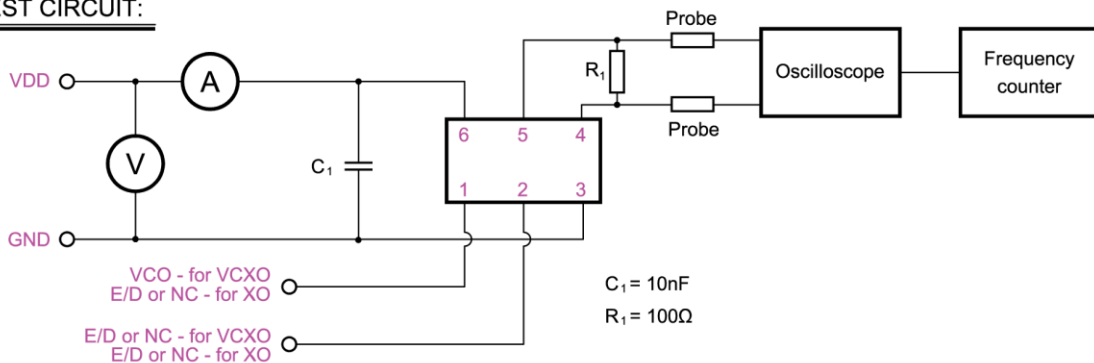
LVC MOS TEST CIRCUIT:



LVPECL TEST CIRCUIT:



LVDS TEST CIRCUIT:



TITLE: XO/VCXO 6 PIN SERIES TEST CIRCUIT

FILENAME: CAT088

RELATED DRAWINGS:

REVISION: F

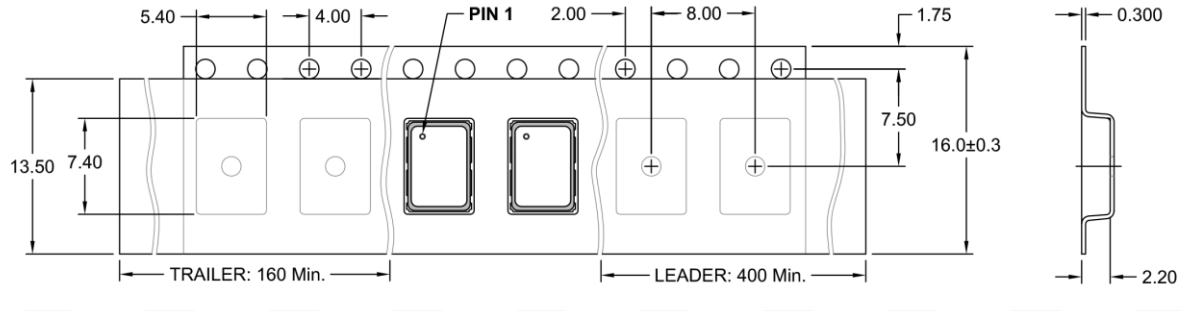
DATE: 03-May-12

SCALE: 1 : 1

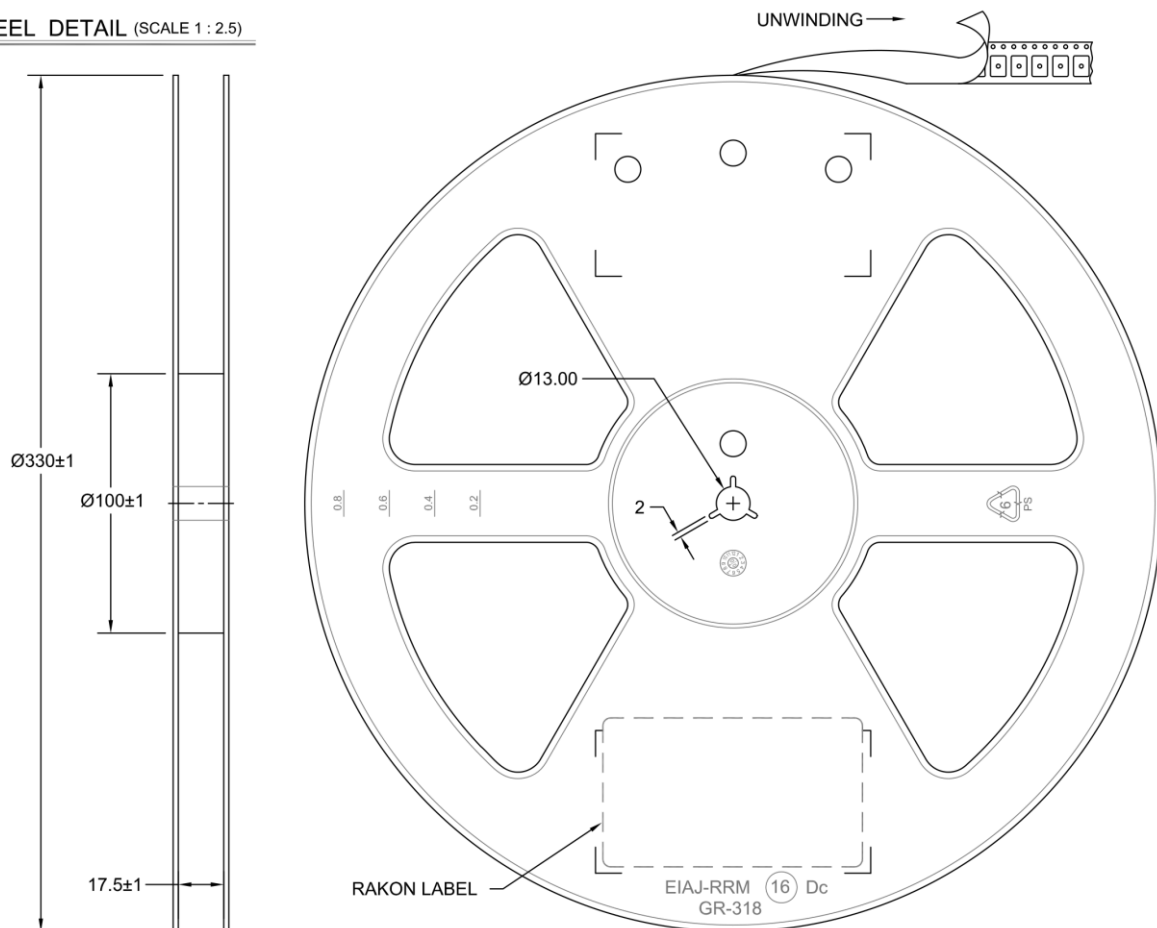
Millimetres

14.0 Tape and Reel (Ø330mm): RVX7050M

TAPE DETAIL (SCALE 2 : 1)



REEL DETAIL (SCALE 1 : 2.5)



TITLE: XO/VCXO 7050 SERIES TAPE & REEL

RELATED DRAWINGS:

FILENAME: CAT032

REVISION: E

DATE: 08-Aug-13

SCALE: 2 : 1

Millimetres

TOLERANCES:

XX = ±0.5

X.X = ±0.2

X.XX = ±0.10

X.XXX = ±0.05

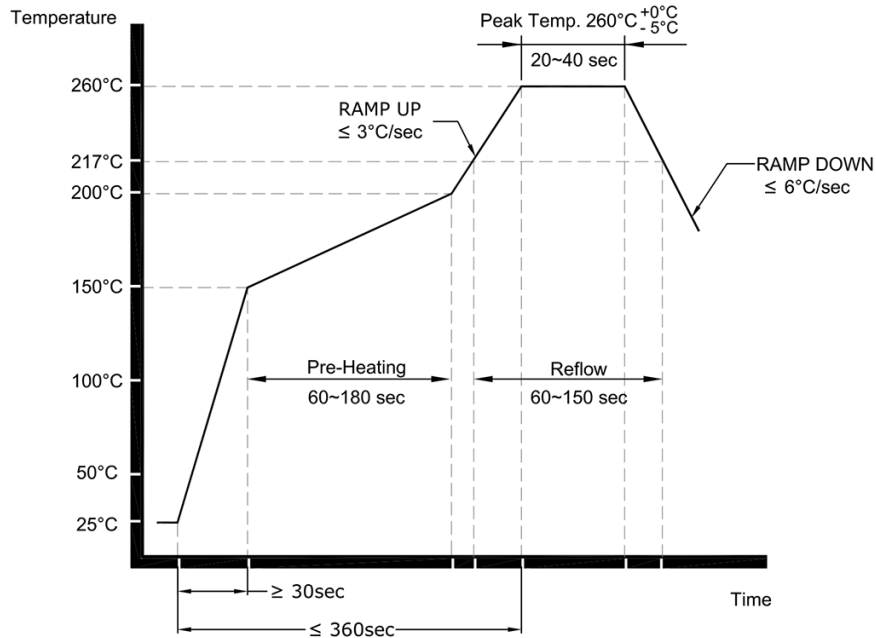
X°

Hole

rakon

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15.0 Reflow: RVX7050M



NOTE:

The product has been tested to withstand the Reflow Profile shown. The Reflow Profile used to solder Rakon products is determined by the solder paste Manufacturer's specification. It is recommended that the Reflow Profile used does not exceed the one shown above.

TITLE: Pb-FREE SERIES OSCILLATORS REFLOW

FILENAME: CAT541

RELATED DRAWINGS:

REVISION: B

DATE: 05-Sep-11

SCALE: NTS

Millimetres

rakon

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16.0 Specification History

Version	Notes	Approver	Date
1.0	Specification created	Sowmya Injeti	13 Mar, 2019