

RXO2520P



SMD Clock Oscillator

High Performance XO in 2.5 x 2.0 mm Surface Mount package

Product description

The RXO2520P XO combines very low RMS phase jitter and tight frequency stability in an industry standard 2.5 x 2.0 mm SMD package. Available in hundreds of industry standard frequencies from 8 to 1500 MHz for fast delivery and reduced inventory levels.



Applications

- Ethernet (10G/40G/100G)
- Communications
- Base stations
- DSL/ADSL
- Wi-Fi
- Consumer
- WiMAX / W-LAN

Features

- Fast sample turnaround
- CMOS, LVPECL, or LVDS output options
- 0.5 ps integrated RMS phase jitter (12 kHz to 20 MHz)
- Low power differential outputs
- Wide frequency range

Specifications

1.0 SPECIFICATION REFERENCES

Line	Parameter	Description
1.1	Model Description	RXO2520P XO
1.2	Reference Number	
1.3	Rakon Part Number	

2.0 FREQUENCY CHARACTERISTICS

Line	Parameter	Test Condition	Value	Unit
2.1	Frequency		8 to 1500	MHz
2.2	Operating Temperature Range		-40 to 85	°C
2.3	Frequency Stability	Including Temperature range, Supply variation, Load variation and 10 years aging at 25°C	±30 to 50	ppm
2.4	Temperature Stability	Temperature range only	±10 to 20	ppm

3.0 POWER SUPPLY

Line	Parameter	Test Condition	Value	Unit
3.1	Supply Voltage (VDD)	With a tolerance of ±10%	3.3	V
3.2	Supply Voltage (VDD)	With a tolerance of ±5%	2.5	V
3.3	Supply Current	For LVCMOS	40 max	mA
3.4	Supply Current	For LVPECL	65 max	mA
3.5	Supply Current	For LVDS	40 max	mA

4.0 OUTPUT CHARACTERISTICS - LVCMOS (UP TO 200 MHz)

Line	Parameter	Test Condition	Value	Unit
4.1	Output Voltage (Vol)	15pF load	10 max	%VDD
4.2	Output Voltage (Voh)	15pF load	90 min	%VDD
4.3	Duty Cycle	@ 50% VDD	48 to 52	%
4.4	Rise Time / Fall Time	90%/10%	3 max	ns
4.5	RMS Phase Jitter	Integrated 12kHz to 20MHz	0.5	ps

5.0 OUTPUT CHARACTERISTICS - LVPECL ONLY

Line	Parameter	Test Condition	Value	Unit
5.1	Output Voltage (Vol)	50Ω nominal load. (VDD - 1.62V) max.		
5.2	Output Voltage (Voh)	50Ω nominal load. (VDD - 1.025V) min.		
5.3	Duty Cycle	@ VDD-1.3V (45 to 55% 600MHz+)	48 to 52	%
5.4	Rise Time / Fall Time	80%/20%	0.6 max	ns
5.5	RMS Phase Jitter	Integrated 12kHz to 20MHz	0.5	ps

6.0 OUTPUT CHARACTERISTICS - LVDS ONLY

Line	Parameter	Test Condition	Value	Unit
6.1	Differential Output: Voltage Swing (Vod)		350	mV
6.2	Duty Cycle	Measured at 1.25V (45 to 55% over 150MHz)	45 to 55	%
6.3	Rise Time / Fall Time	RL = 100 Ω / CL = 10 pF	0.6 max	ns
6.4	RMS Phase Jitter	Integrated 12kHz to 20MHz	0.5	ps

7.0 PIN CONNECTIONS

Line	Parameter	Description
7.1	Pin 1	E/D* or NC
7.2	Pin 2	E/D* or NC
7.3	Pin 3	GND
7.4	Pin 4	OUTPUT
7.5	Pin 5	COMPLIMENTARY OUTPUT (LVPECL/LVDS only), E/D*, or NC
7.6	Pin 6	VDD
7.7	* Output Enabled	>70% of VDD on E/D pin, or E/D pin left open (connected to internal pull-up resistor)
7.8	* Output Disabled	<30% of VDD on E/D pin, or E/D pin to GND

8.0 PACKAGE DETAILS

Line	Parameter	Description
8.1	Package	2.5 x 2.0 mm
8.2	Top line	[R ####] Part identifier
8.3	Bottom line	[o FYWW] Pin 1, Manufacturing code, Year code* and Week code**
8.4	* Year code	A = 2010, B = 2011, C = 2012, D = 2013, ... Z = 2035
8.5	** Week Code	WW = 01 = Week of first Monday of the year

9.0 ENVIRONMENTAL SPECIFICATION

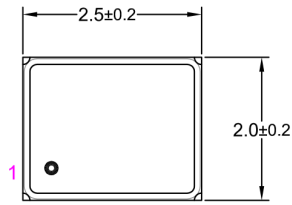
Line	Parameter	Description
9.1	Mechanical Shock	MIL-STD-883, Method 2002
9.2	Storage Temperature Range	-55 to 125 °C
9.3	Humidity	After 48 hours at 85 °C±2 °C 85 % relative humidity non-condensing
9.4	Thermal Shock	MIL-STD-883, Method 1011
9.5	Vibration	MIL-STD-883, Method 2007
9.6	Gross and Fine Leak	MIL-STD-883, Method 1014
9.7	RoHS Compliant	Yes

10.0 MANUFACTURING INFORMATION

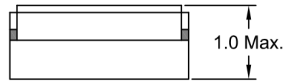
Line	Parameter	Description
10.1	Packaging Description	Tape and Reel. Standard packing quantity is 3000 per reel
10.2	Reflow	Solder reflow process as per attached profile

Drawing Name: XO/VCXO 2520 Series Model

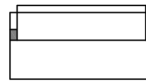
MODEL DRAWING



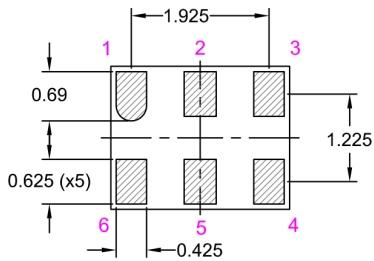
TOP VIEW



FRONT VIEW



END VIEW

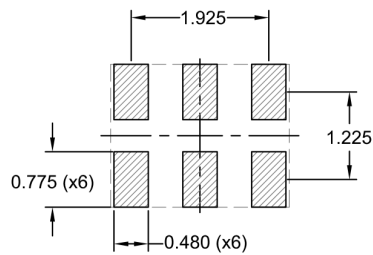


BOTTOM VIEW

NOTE :

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

RECOMMENDED PAD LAYOUT - TOP VIEW



TITLE: XO/VCXO 2520 SERIES MODEL

RELATED DRAWINGS:

FILENAME: CAT775

REVISION: A

DATE: 12-Feb-13

SCALE: 10 : 1

Millimetres

TOLERANCES:

XX

X.X = ±0.2

X.XX = ±0.1

X.XXX = ±0.05

X°

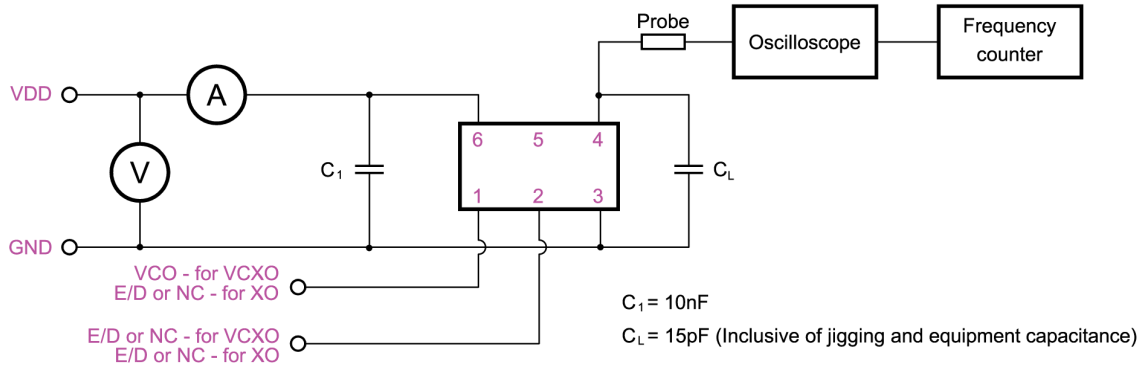
Hole

rakon

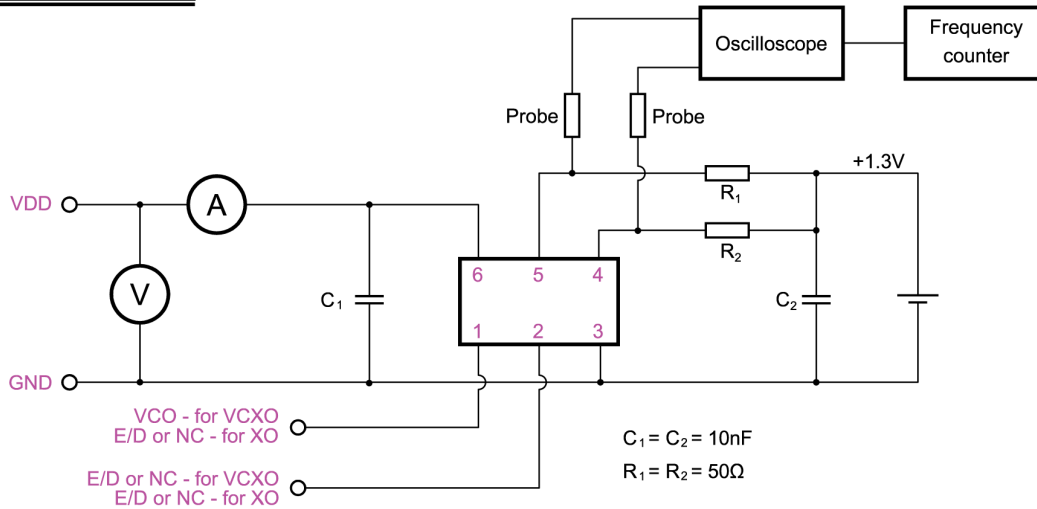
© 2009 Rakon Limited

Drawing Name: XO/VCXO 6 Pin Series Test Circuit

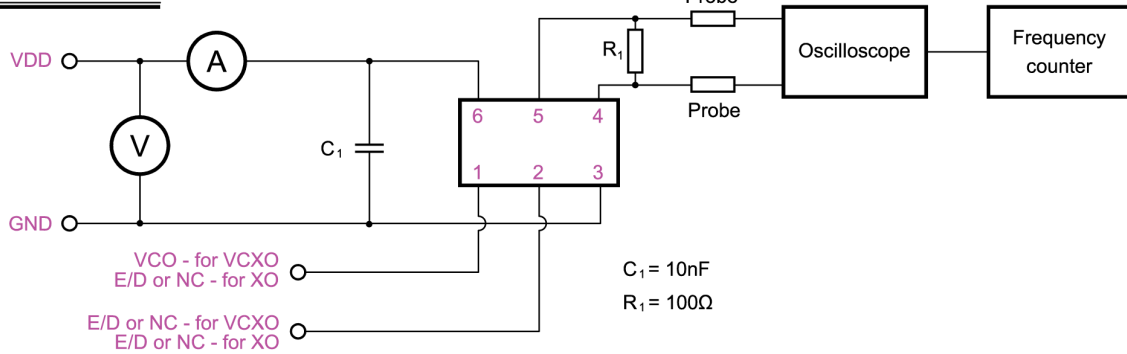
LVC MOS TEST CIRCUIT:



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

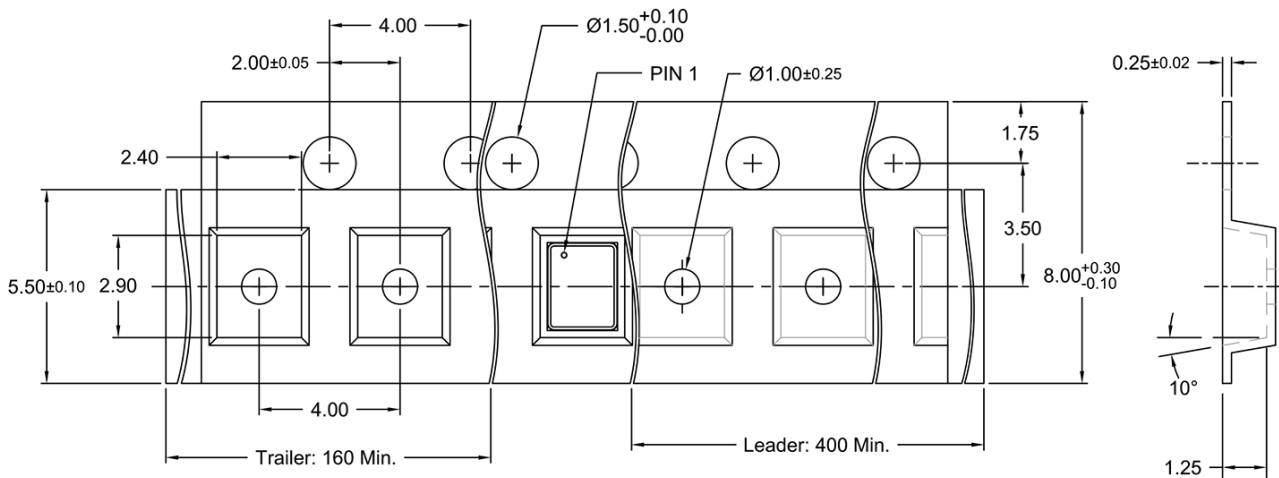
Millimetres

rakon

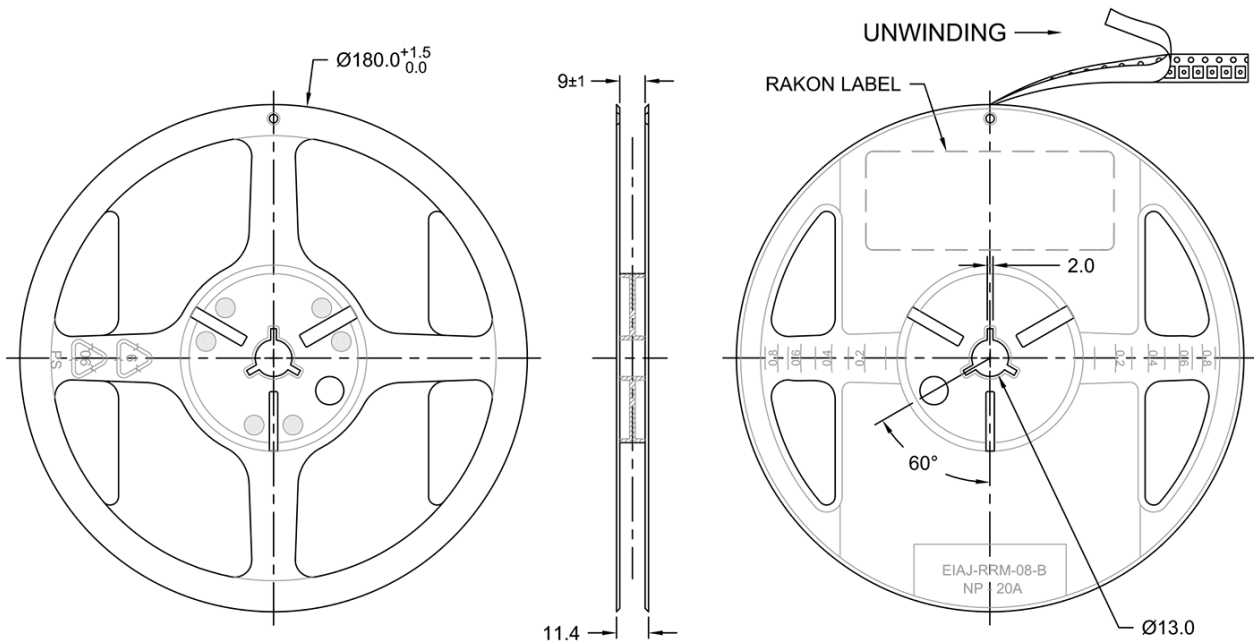
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Drawing Name: 2520 Series Tape & Reel

TAPE DETAIL (Scale 5 : 1)



REEL DETAIL (Scale 1 : 2.5)



TITLE: 2520 SERIES TAPE & REEL

RELATED DRAWINGS:

FILENAME: CAT422

REVISION: F

DATE: 29-Jul-13

SCALE: See Above

Millimetres

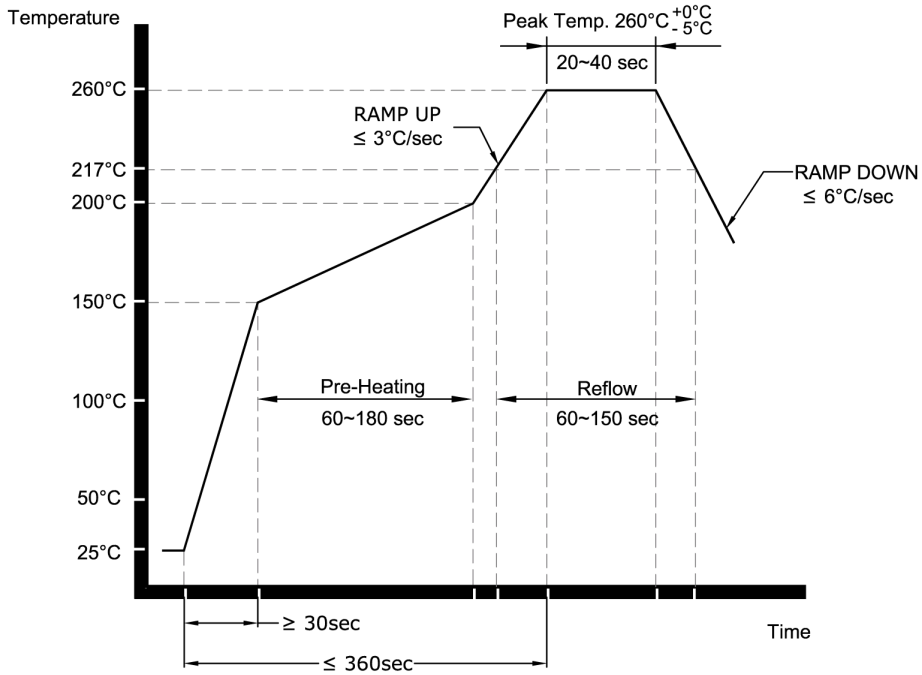
TOLERANCES:

XX =
 X.X = ±0.1
 X.XX = ±0.05
 X.XXX =
 X° =
 Hole =

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Drawing Name: Pb-Free Reflow



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 REFLOW

FILENAME: CAT541

RELATED DRAWINGS:

REVISION: B

DATE: 05-Sep-11

SCALE: NTS

Millimetres

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