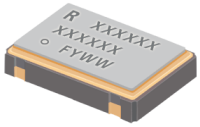
RSO5032X

SMD Clock Oscillator

Standard clock oscillator in low profile 5.0 x 3.2 mm surface mount package



Product description

The RSO5032X is a CMOS oscillator that operates at standard voltages from 1.8 to 5V to address the tight stability requirements of computing processors and commercial networking applications. Hundreds of industry standard frequency configurations are available for immediate sampling and reduced production inventory levels.

Applications

- Consumer
- Industrial
- Mobile communications
- DSL/ADSL
- Ethernet
- WiMAX/W-LAN

Features

- Fast sample turnaround
- Low power consumption
- Extended temperature range
- 1.8 to 5.0V operating voltage

Specifications

1.0 SPECIFICATION REFERENCES

Line	Parameter	Description
1.1	Model Description	RSO5032X
1.2	Reference Number	
1.3	Rakon Part Number	

2.0 FREQUENCY CHARACTERISTICS

Line	Parameter	Test Condition	Value	Unit
2.1	Frequency		0.5 to 160	MHz
2.2	Operating Temperature Range		-40 to 85	°C
2.3	Temperature Stability	Temperature range only (with tolerance)	±20 to 100	ppm
2.4	Frequency Aging	First year at 25°C	±3	ppm

3.0 POWER SUPPLY

Line	Parameter	Test Condition	Value	Unit
3.1	Supply Voltage (VDD)	With a tolerance of ±10%	5	V
3.2	Supply Voltage (VDD)	With a tolerance of ±10%	3.3	V
3.3	Supply Voltage (VDD)	With a tolerance of ±5%	2.5	V
3.4	Supply Voltage (VDD)	With a tolerance of ±5%	1.8	V
3.5	Supply Current	To be specified based on requency and voltage	5 to 80	mA

Preliminary

4.0 OUTPUT CHARACTERISTICS - LVCMOS

Line	Parameter	Test Condition	Value	Unit
4.1	Output Voltage (Vol)		10 max	%VDD
4.2	Output Voltage (Voh)		90 min	%VDD
4.3	Output Load		15	pF
4.4	Duty Cycle	@ 50%VDD	40 to 60	%
4.5	Rise Time/Fall Time	80%/20% (To be specified based on frequency and voltage)	3 to 10	ns
4.6	Startup Time		10 max	ms

5.0 PIN CONNECTIONS - 4 PIN PACKAGE

Line	Parameter	Description
5.1	Pin 1	E/D* or NC
5.2	Pin 2	GND
5.3	Pin 3	OUTPUT
5.4	Pin 4	VDD
5.5	* Output Enable	>70% of VDD on E/D pin, or E/D pin left open (connected to internal pull-up resistor)
5.6	* Output Disable	<30% of VDD on E/D, or E/D pin to GND

6.0 PACKAGE DETAILS

Line	Parameter	Description
6.1	Package type	5.0 x 3.2 mm. Package G
6.2	Top line	[R ####] Rakon Part Number
6.3	Bottom line	[o FYWW] Pin 1, Manufacturing code, Year code* and Week code**
6.4	* Year code	A = 2010, B = 2011, C = 2012, ... Z = 2035
6.5	** Week code	WW = 01 = Week of the first Monday of the year

7.0 ENVIRONMENTAL SPECIFICATION

Line	Parameter	Description
7.1	Mechanical Shock	MIL-STD-883, Method 2002
7.2	Storage Temperature Range	-55 to 125 °C
7.3	Humidity	After 48 hours at 85 °C ±2 °C 85 % relative humidity non-condensing
7.4	Thermal Shock	MIL-STD-883, Method 1011
7.5	Vibration	MIL-STD-883, Method 2007
7.6	Gross and Fine Leak	MIL-STD-883, Method 1014
7.7	RoHS Compliant	Yes
7.8	Halogen Free	Yes
7.9	REACH Compliance	Yes (EC Regulation No. 1907/2006)

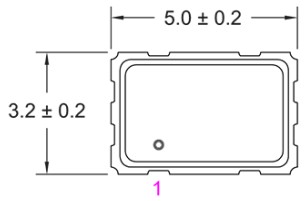
8.0 MANUFACTURING INFORMATION

Line	Parameter	Description
8.1	Packaging Description	Tape and Reel. Standard packing quantity is 1000 units per ø 180 mm reel.
8.2	Reflow	Solder reflow process as per attached profile

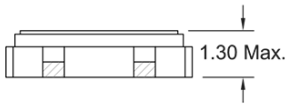
Preliminary

Drawing Name: XO 5032 4-Pin Model Drawing

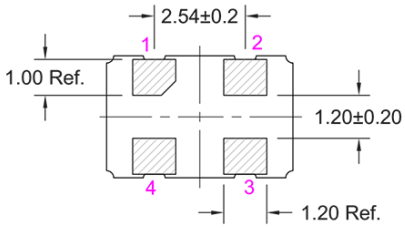
PACKAGE G45



TOP VIEW

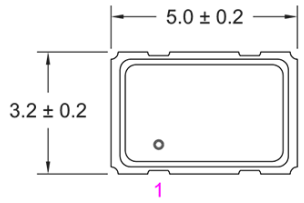


FRONT VIEW

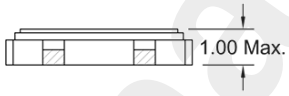


BOTTOM VIEW

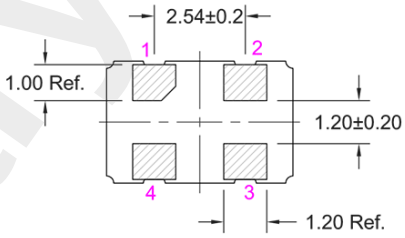
PACKAGE G4L



TOP VIEW



FRONT VIEW

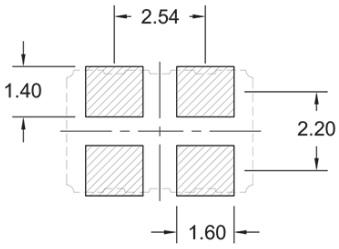


BOTTOM VIEW

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

RECOMMENDED PAD LAYOUT - Top View

Package G45 & G4L



TITLE: XO 5032 4-PIN MODEL	FILENAME: CAT686	TOLERANCES:
RELATED DRAWINGS:	REVISION: B	XX =
	DATE: 21-Jun-13	X.X = ±0.15
	SCALE: 5 : 1	X.XX = ±0.10
	Millimetres	X.XXX =
		X° =
		Hole =

rakon

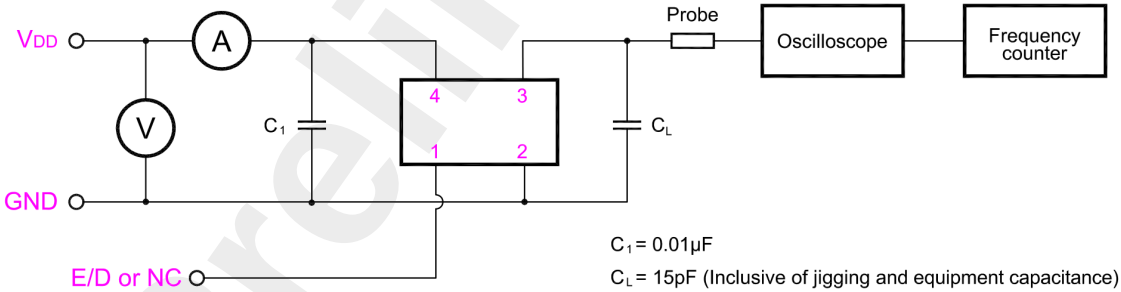
© 2013 Rakon Limited

Preliminary

Drawing Name: XO 4 Pin Series Test Circuit

Preliminary

CMOS/LVCMOS TEST CIRCUIT



C_1 = 0.01µF

C_L = 15pF (Inclusive of jigging and equipment capacitance)

NOTE:

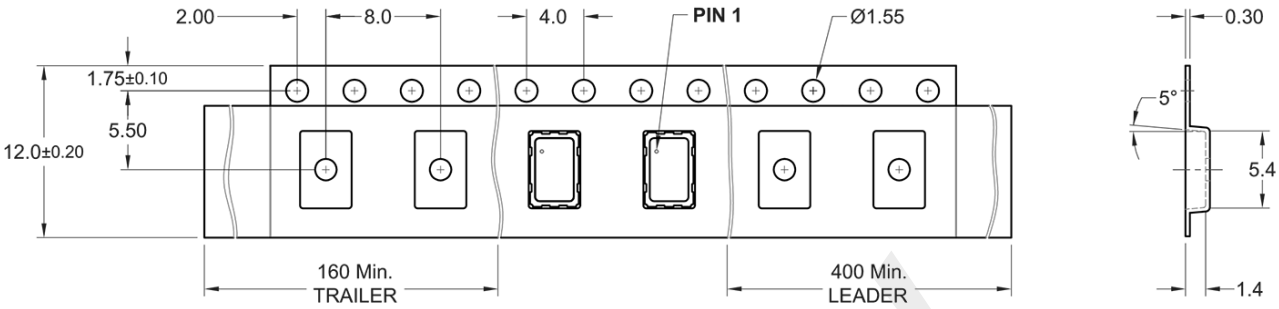
THIS SERIES HAS NO BY PASS CAPACITOR. WE RECOMMEND OUR CUSTOMER USE CAPACITOR 0.01µF BETWEEN V_{DD} AND GND.

TITLE: XO 4 PIN TEST CIRCUIT	FILENAME: CAT616
RELATED DRAWINGS:	REVISION: C
	DATE: 03 May-12
	SCALE: NTS
	Millimetres

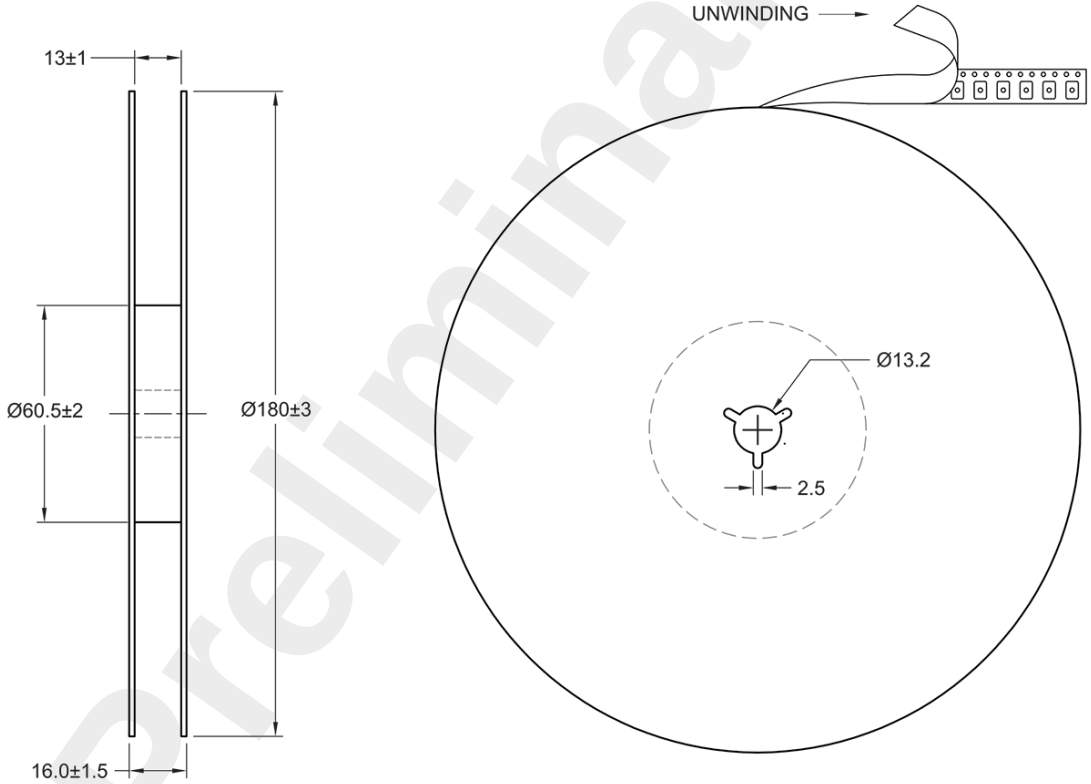
© 2012 Rakon Limited

Drawing Name: XO/VCXO 5032 G Tape & Reel

TAPE DETAIL (SCALE 2 : 1)



REEL DETAIL (SCALE 1 : 2.5)

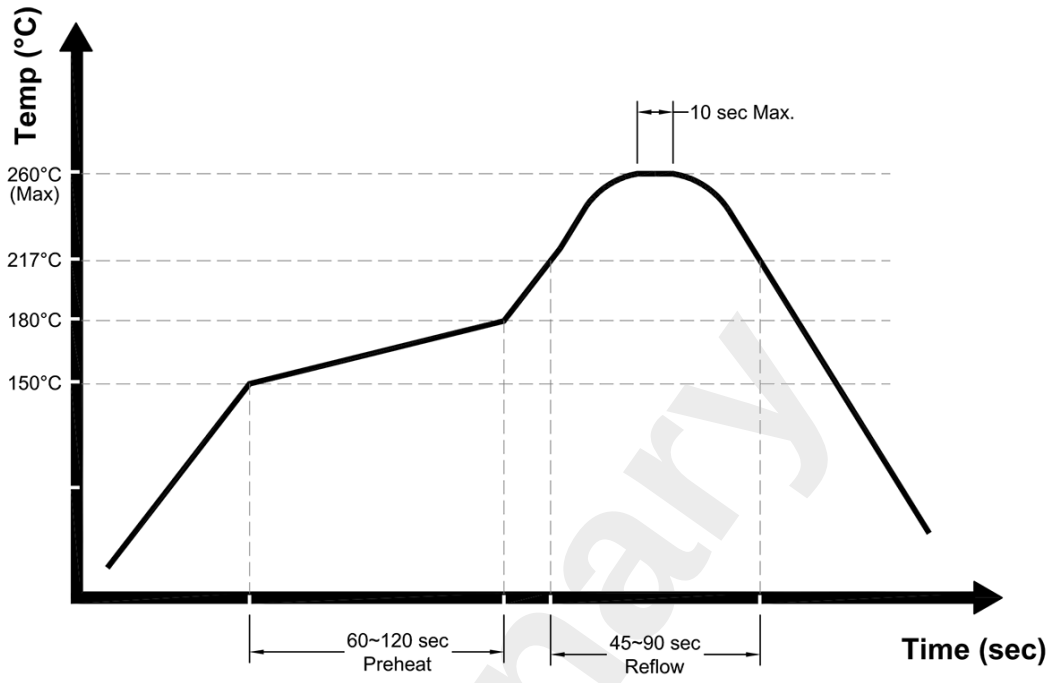


Preliminary

TITLE: XO / VCXO 5032 TAPE & REEL	FILENAME: CAT687	TOLERANCES:
RELATED DRAWINGS:	REVISION: B	XX =
	DATE: 24-Jun-13	X.X = ±0.1
	SCALE: 2 : 1	X.XX = ±0.05
	Millimetres	X.XXX =
		X° =
		Hole =

© 2013 Rakon Limited

Drawing Name: RXO G Reflow Profile



TITLE: Pb-FREE SERIES OSCILLATORS REFLOW (Package G)	FILENAME: CAT618
RELATED DRAWINGS:	REVISION: B
	DATE: 24-Jan-12
	SCALE: NTS
	Millimetres

© 2012 Rakon Limited

Preliminary