

# RVX5032M

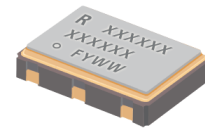


## SMD Voltage Controlled Crystal Oscillator

Ultra Low Noise VCXO in 5.0 x 3.2 mm Surface Mount Package.

### Product description

The RVX5032M is a very high performance VCXO delivering ultra low close-in phase noise for RF/Analog applications and ultra low RMS phase jitter optimised for high speed serial data and digital applications.



### Applications

- Communications
- Base stations
- DSL/ADSL
- SONET/SDH
- WiMAX/W-LAN
- Ethernet
- Wi-Fi

### Features

- Excellent close-in phase noise performance
- Ultra Low Jitter 0.05 to 0.3 ps integrated 12 kHz to 20 MHz
- LVCMOS, LVPECL, or LVDS options
- Wide frequency range

### Specifications

#### 1.0 SPECIFICATION REFERENCES

Line	Parameter	Description
1.1	Model Description	RVX5032M VCXO
1.2	Reference Number	
1.3	Rakon Part Number	

#### 2.0 FREQUENCY CHARACTERISTICS

Line	Parameter	Test Condition	Value	Unit
2.1	Frequency		1 to 800	MHz
2.2	Operating Temperature Range		-40 to 85	°C
2.3	Frequency Stability	Including Temperature range, Supply variation, Load variation and 15 years aging at 25°C	±35 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 ±5%	3.3	V
3.2	Supply Current	For LVCMOS	1 to 40	mA
3.3	Supply Current	For LVPECL	40 to 120	mA
3.4	Supply Current	For LVDS	30 to 80	mA

#### 4.0 CONTROL VOLTAGE (VCO)

Line	Parameter	Test Condition	Value	Unit
4.1	Absolute Pull Range (APR)		±50 min	ppm
4.2	Total Pull Range	Frequency shift from minimum to maximum control voltage	100 to 250	ppm
4.3	Control Voltage	Nominal 1.65V	0 to 3.3	V
4.4	Linearity	Control voltage 0.3 to 3V	10 max	%
4.5	Slope	Positive only		
4.6	Modulation BW	Control voltage 0.3 to 3V	15 min	kHz
4.7	Input Impedance		0.1 to 10	MΩ

#### 5.0 OUTPUT CHARACTERISTICS - CMOS (UP TO 200 MHz)

Line	Parameter	Test Condition	Value	Unit
5.1	Output Voltage (Vol)	15pF load	10 max	%VDD
5.2	Output Voltage (Voh)	15pF load	90 min	%VDD
5.3	Duty Cycle	@ 50% VDD	45 to 55	%
5.4	Rise Time/Fall Time	90%/10%	3 max	ns
5.5	RMS Phase Jitter	Typical integrated 12kHz to 20MHz	0.05 to 0.3	ps

#### 6.0 OUTPUT CHARACTERISTICS - LVPECL ONLY

Line	Parameter	Test Condition	Value	Unit
6.1	Output Voltage (Vol)	50Ω nominal load. (VDD - 1.6V) max.		
6.2	Output Voltage (Voh)	50Ω nominal load. (VDD - 1.03V) min.		
6.3	Duty Cycle	@ VDD-1.3V	45 to 55	%
6.4	Rise Time/ Fall Time	80%/20%	0.6 max	ns
6.5	RMS Phase Jitter	Typical integrated 12kHz to 20MHz	0.05 to 0.3	ps

#### 7.0 OUTPUT CHARACTERISTICS - LVDS ONLY

Line	Parameter	Test Condition	Value	Unit
7.1	Differential Output: Voltage Swing (Vod)		350	mV
7.2	Duty Cycle	Measured at 1.25 V	45 to 55	%
7.3	Rise Time/Fall Time	RL = 100 Ω / CL = 10 pF	0.6 max	ns
7.4	RMS Phase Jitter	Typical integrated 12kHz to 20MHz	0.05 to 0.3	ps

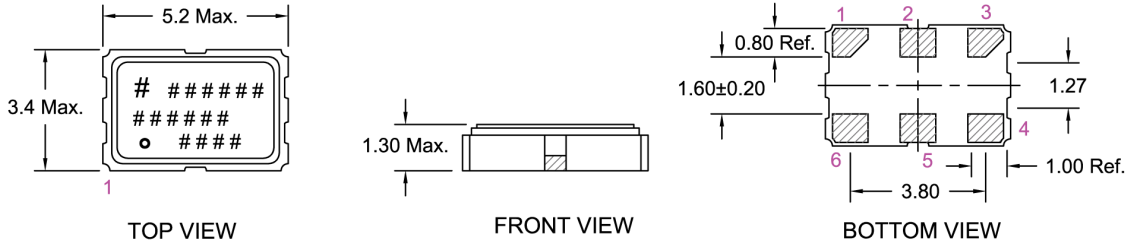
#### 8.0 SSB PHASE NOISE

Line	Parameter	Test Condition	Value	Unit
8.1	SSB Phase Noise power density @ 10 Hz offset	Typical value for a 77.76 MHz VCXO @ 25 °C	-73	dBc/Hz
8.2	SSB Phase Noise power density @ 100 Hz offset	Typical value for a 77.76 MHz VCXO @ 25 °C	-100	dBc/Hz
8.3	SSB Phase Noise power density @ 1 kHz offset	Typical value for a 77.76 MHz VCXO @ 25 °C	-128	dBc/Hz
8.4	SSB Phase Noise power density @ 10 kHz offset	Typical value for a 77.76 MHz VCXO @ 25 °C	-137	dBc/Hz
8.5	SSB Phase Noise power density @ 100 kHz offset	Typical value for a 77.76 MHz VCXO @ 25 °C	-148	dBc/Hz

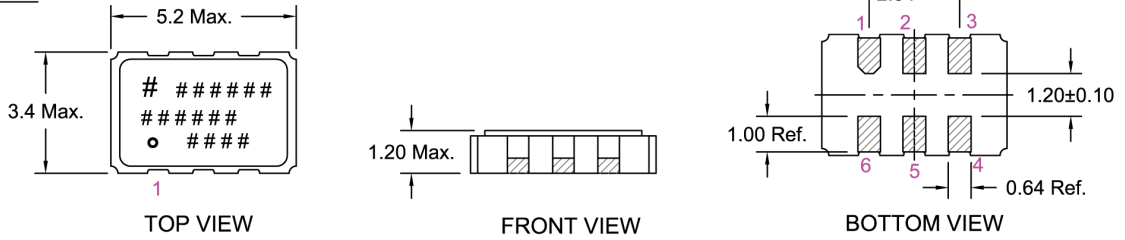


# Drawing Name: XO/VCXO 5032 6-Pin Model Drawing

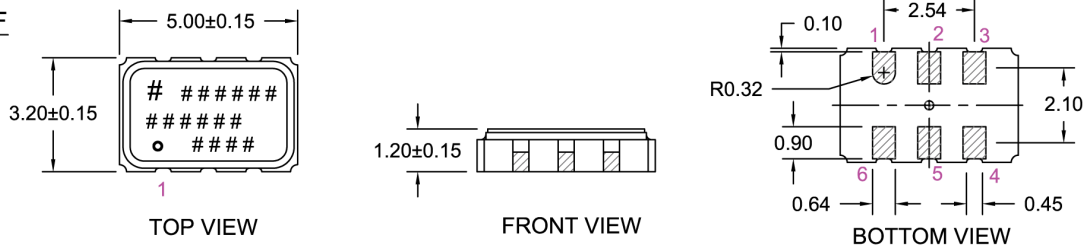
## PACKAGE G65



## PACKAGE GV5

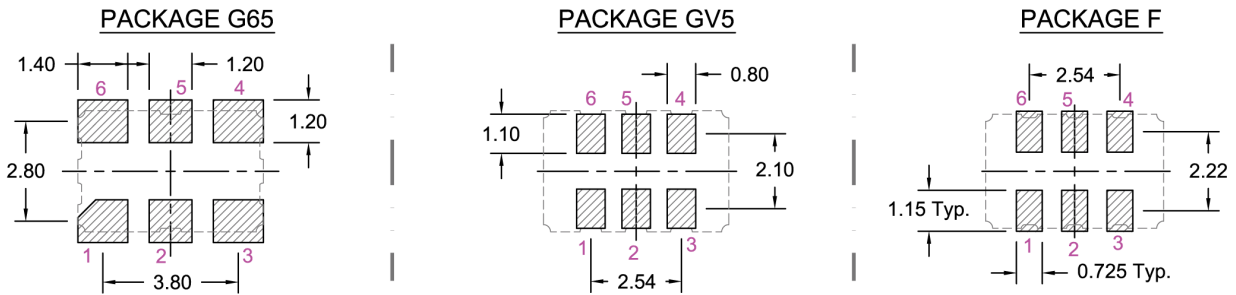


## PACKAGE F



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

## RECOMMENDED PAD LAYOUT - Top View



TITLE: XO/VCXO 5032 6-PIN MODEL

RELATED DRAWINGS:

FILENAME: CAT026

REVISION: C

DATE: 01-May-12

SCALE: 5 : 1

Millimetres

TOLERANCES:

XX =

X.X = ±0.15

X.XX = ±0.10

X.XXX =

X° =

Hole =

**rakon**

© 2009 Rakon Limited