IT2200K

rakon

SMD Temperature Compensated Crystal Oscillators

SMD TCXO using analogue ASIC for compensation and an optional Enable/Disable pin for efficient power management.

Product description

The I(V)T2200K employs an analogue ASIC for the oscillator and a high order temperature compensation circuit in a 2.5 x 2.0 mm size package. The device can be placed in power down mode through a single input pin. During standard operation, power consumption is minimized by operating down to a supply voltage of 1.8V. The I(V)T2200K's high stability, low power consumption, small footprint and powerful compensation method makes it a TCXO ideally suited for demanding GPS mobile applications.

Applications

- GPS
- Smartphone
- PND
- Consumer
- Communications
- Wi-Fi
- WiMAX/W-LAN

Features

- Frequency slope and perturbation specifications can be customized to the application requirement
- Excellent phase noise performance
- Standard temperature stability choices are ±0.5ppm, ±1ppm, ±1.5ppm and ±2.5ppm over wide temperature ranges

Specifications

1.0 SPECIFICATION REFERENCES

Line	Parameter	Description
1.1	Model description	IT2200K / IVT2200K / IT2200KP
1.2	RoHS compliant	Yes
1.3	Reference number	
1.4	Rakon part number	

2.0 FREQUENCY CHARACTERISTICS

Line	Parameter	Test Condition	Value	Unit
2.1	Frequency		10 to 52	MHz
2.2	Frequency calibration	Offset from nominal frequency measured at 25°C±2°C	±1 max	ppm
2.3	Reflow shift	Two consecutive reflows as per attached profile after 1 hour recovery at 25°C	±1 max	ppm
2.4	Temperature range	The operating temperature range over which the frequency stability is measured	-40 to 85	°C
2.5	Frequency stability over temperature	Referenced to the midpoint between minimum and maximum frequency value over the specified temperature range. Control voltage set to midpoint of control voltage (Note 1)	±0.5 to 2.5	ppm
2.6	Frequency slope	Minimum of 1 frequency reading every 2°C over the operating temperature range (Note 1)	0.1 to 1	ppm/°C
2.7	Static temperature hysteresis	Frequency change after reciprocal temperature ramped over the operating range. Frequency measured before and after at 25°C	0.6 max	ppm
2.8	Sensitivity to supply voltage variations	Supply voltage varied ±5% at 25°C	±0.1 max	ppm
2.9	Sensitivity to load variations	±10% load change at 25°C (Note 2)	±0.2 max	ppm
2.10	Long term stability	Frequency drift over 1 year at 25°C	±1 max	ppm

MODEL OUTLINE

2.5±0.2

2.0±0.2

R XXXX — Frequency Marking See Marking Note

○XXX XX — Date Code

1 — Internal Use Only

TOP VIEW

0.80±0.10

FRONT VIEW

1.925

1 2 3

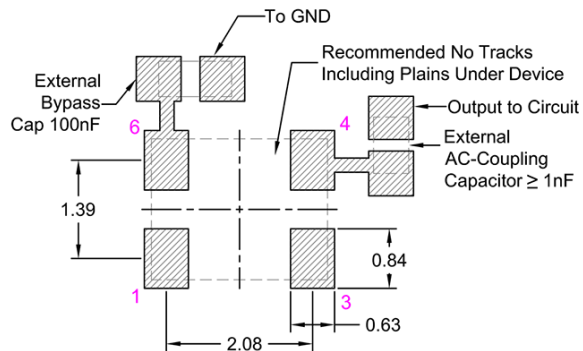0.688

1.225

0.625

6 5 4

0.425

BOTTOM VIEW
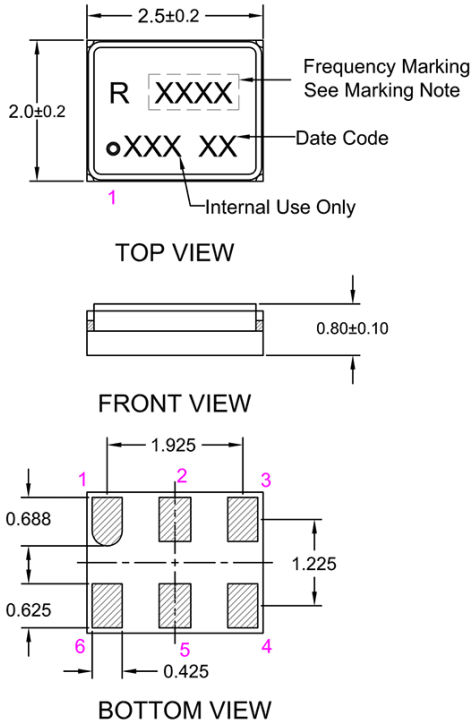
MARKING NOTE

[XXXX] = Frequency in MHz.
e.g.: 8A00 = 8.00MHz, 19A2 = 19.2MHz, 100A = 100MHz
    (A = IT/IVT2200K)

PIN CONNECTIONS

Pin	6 PAD		
	IT22..K	IVT22..K	IT22..KP
1	NC / GND	VCO	Enable / Disable*
2	NC / GND	NC / GND	NC / GND
3	GND	GND	GND
4	OUTPUT	OUTPUT	OUTPUT
5	NC / GND	NC / GND	NC / GND
6	VCC	VCC	VCC

NOTE: * Connect to VCC or floating to enable TCXO

RECOMMENDED 4 PAD LAYOUT - TOP VIEW

To GND

External Bypass Cap 100nF

Recommended No Tracks Including Plains Under Device

Output to Circuit

External AC-Coupling Capacitor ≥ 1nF

6 4

1.39

1 3

0.84

2.08

0.63

TITLE: I(V)T2200K MODEL

RELATED DRAWINGS:

FILENAME: CAT762

REVISION: B

DATE: 18-Jul-13

SCALE: 10 : 1

Millimetres

TOLERANCES:
XX   =
X.X   = ±0.2
X.XX   = ±0.10
X.XXX = ±0.05
X°   =
Hole   =

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