

**SMD Temperature Compensated Crystal Oscillator**

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

**Product description**

The I(V)T2200J 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)T2200J's high stability, low power consumption, small footprint and powerful compensation method makes it a TCXO ideally suited for demanding GPS mobile applications.

**Applications**

- Consumer
- Communications
- GPS
- Feature phone

**Features**

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

**Specifications****1.0 SPECIFICATION REFERENCES**

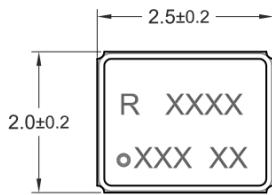
Line	Parameter	Description
1.1	Model description	IT2200J / IVT2200J / IT2200JP
1.2	RoHS compliant	Yes
1.3	Reference number	
1.4	Rakon part number	

**2.0 FREQUENCY CHARACTERISTICS**

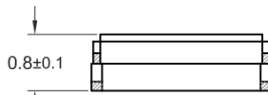
Line	Parameter	Test Condition	Value	Unit
2.1	Frequency		10 to 52	MHz
2.2	Frequency calibration	Offset from nominal frequency measured at $25^{\circ}\text{C} \pm 2^{\circ}\text{C}$	$\pm 1$ max	ppm
2.3	Reflow shift	Two consecutive reflows as per attached profile after 1 hour recovery at $25^{\circ}\text{C}$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

# Drawing Name: I(V)T2200J Model Outline

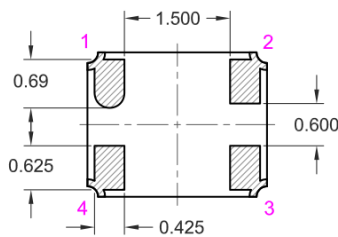
## MODEL OUTLINE



TOP VIEW



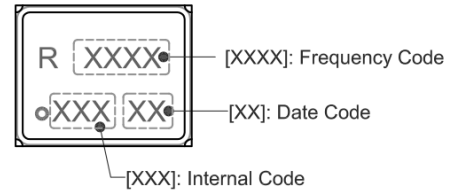
FRONT VIEW



BOTTOM VIEW

## LID MARKING \*

\* Marking information is detailed in the specification.

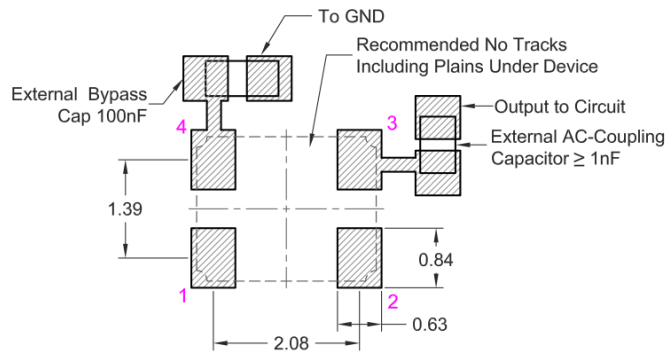


## PIN CONNECTIONS

Pin	IT22..J	IVT22..J	IT22..JP
1	NC / GND	VCO	Enable / Disable**
2	GND	GND	GND
3	OUTPUT	OUTPUT	OUTPUT
4	VDD	VDD	VDD

\*\* Connect to VDD or floating to enable TCXO.

## RECOMMENDED PAD LAYOUT - TOP VIEW



TITLE: I(V)T2200J MODEL

RELATED DRAWINGS:

FILENAME: CAT676

REVISION: D

DATE: 28-Aug-14

SCALE: 10 : 1

Millimetres

TOLERANCES:

XX =

X.X =

X.XX = ±0.10

X.XXX = ±0.05

X\* =

Hole =

**rakon**

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