

IT3200C

The IT3200C employs an analogue ASIC for the oscillator and a high order temperature compensation circuit in a 3.2 x 2.5 mm size package. This SMD Temperature Compensated Crystal Oscillators provides voltage control option with a wide frequency ranges available from 10 MHz to 40 MHz. It is built using rakon's proprietary processes specifically targeted at high performance GNSS applications.

Features

- Frequency slope and perturbation specifications can be customized to the application requirement
- Excellent phase noise performance
- Standard temperature stability choices are ± 0.5 , ± 1.0 , ± 1.5 and ± 2.5 ppm over temperature from -40 to 85°C

Applications

- GNSS
- Smartphone
- PND
- Consumer
- Communications
- Wi-Fi

3.2 x 2.5 mm



Standard Specifications

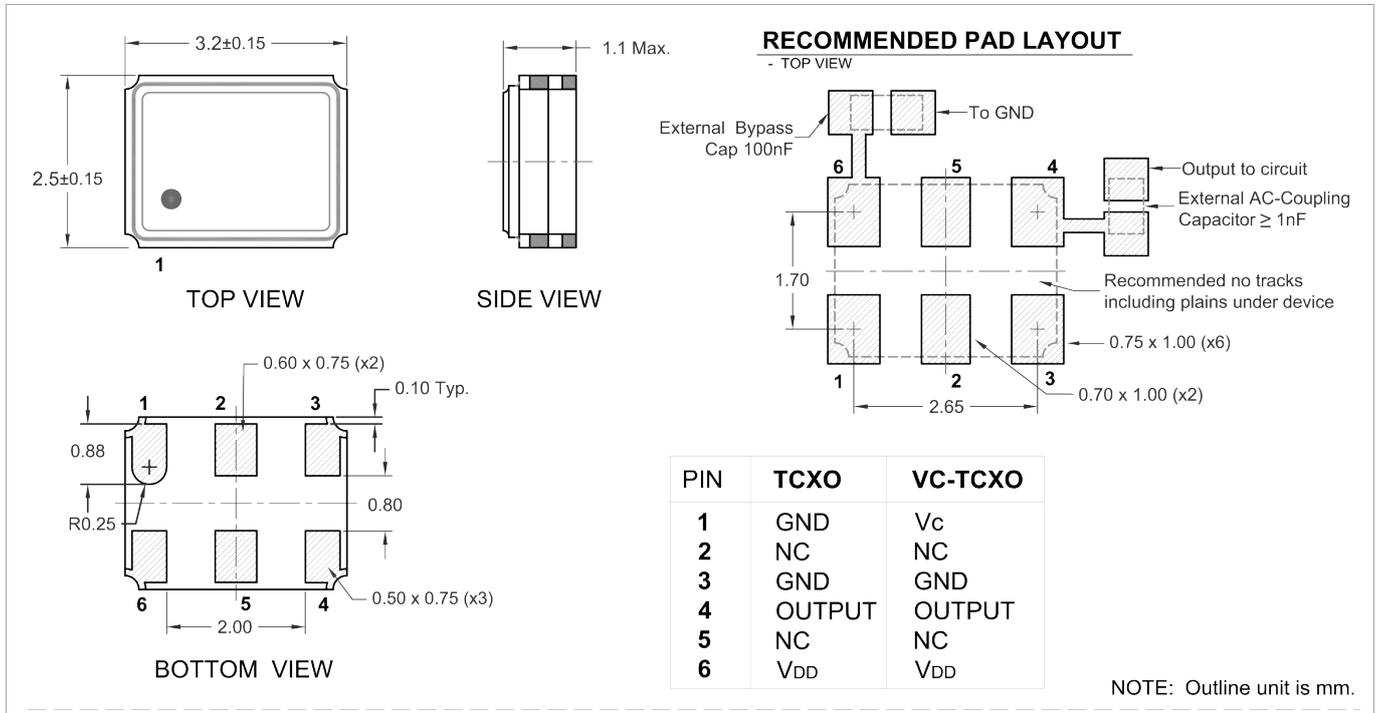
Parameter	Min.	Typ.	Max.	Unit	Test Condition / Description
Nominal frequency		10 – 40		MHz	
Frequency calibration			± 1	ppm	Offset from nominal frequency measured at 25°C $\pm 2^{\circ}\text{C}$
Reflow shift			± 1	ppm	Two consecutive reflows as per attached profile after 1 hour recovery at 25°C
Operating temperature range	-40		85	$^{\circ}\text{C}$	The operating temperature range over which the frequency stability is measured
Frequency stability over temperature			± 0.5 – ± 2.5	ppm	Referenced to the midpoint between minimum and maximum frequency value over the specified temperature range ¹ Control voltage set to midpoint of V_c
Frequency slope			± 0.05 to ± 1	ppm/ $^{\circ}\text{C}$	Minimum of one frequency reading every 2°C over the operating temperature range ²
Static temperature hysteresis			0.6	ppm	Frequency change after reciprocal temperature ramped over the operating range. Frequency measured before and after at 25°C
Sensitivity to supply voltage variations			± 0.1	ppm	V_{DD} varied $\pm 5\%$ at 25°C
Sensitivity to load variations			± 0.1	ppm	$\pm 10\%$ load change at 25°C ²
Long term stability			± 2	ppm	Frequency drift over 1 year at 25°C
Supply voltage (V_{DD})		2.4 – 3.7		V	With a tolerance of $\pm 5\%$
Supply current			2	mA	At maximum V_{DD} ²
Output voltage level	0.8			V	At minimum V_{DD} , specified for load stated in oscillator output section at 25°C ²
Output waveform					DC coupled clipped sinewave ³

¹ Parts should be shielded from drafts causing unexpected thermal gradients. Temperature changes due to ambient air currents on the oscillator can lead to short term frequency drift.

² Specified for load stated in oscillator output section at 25°C .

³ External AC-Coupling capacitor required. 1 nF or greater recommended.

Model Outline and Recommended Pad Layout



Test Circuit

