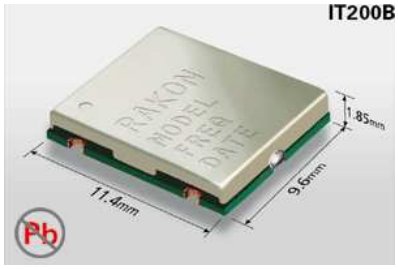
IT225B

10MHz SMD TCXO for the ZARLINK GPS chip set

The TCXO has excellent temperature stability and frequency perturbations and slope specifications that are guaranteed.

REQUEST QUOTE



Product Description

The IT225B employs an analogue IC for the oscillator and temperature compensation giving excellent temperature stability performance for low cost.

Applications include

GPS products employing the ZARLINK chip set.

Features

- Excellent frequency stability giving super fast acquisition times.
- Temperature stability typically less than ±1ppm, over -30 to 75ºC temperature range.
- No large frequency perturbations causing loss of lock problems.
- Excellent frequency slope specifications that can be customized to your application.
- The unit consumes only 1.2mA typically.

1.0 SPECIFICATION REFERENCES

1.1	**Model Description**	IT225B 10MHz	
1.2	**RoHS compliant**	Yes	+ ►

2.0 FREQUENCY CHARACTERISTICS

INSERT NEW LINE

Line	Parameter	Test Condition	Min.	Max.	Units	Modify
2.1	**Nominal Frequency**			10.0	MHz	+ ►
2.2	**Frequency calibration**	Frequency at 23ºC ±2ºC. sixty minutes after reflow		2.0	±ppm	+ ►
2.3	**Frequency stability over temperature**	Referenced to frequency reading at 25ºC. Temperature varied at maximum of 2ºC per minute		2.0	±ppm	+ ►

2.4	**Temperature range**	The operating temperature range over which the frequency stability is measured	-30.0	75.0	ºC	+ ►
2.5	**Frequency slope of perturbations**	Minimum of 1 frequency reading every 2ºC, over the operating temperature range (Note 1)		0.5	ppm/ºC	+ ►
2.6	**Static temperature hysteresis**	Frequency change after reciprocal temperature ramped over the operating range. Frequency measured before and after at 25ºC.		0.6	±ppm	+ ►
2.7	**Supply voltage stability**	Supply voltage varied ±5% at 25ºC. Frequencies above 25MHz are not able to be specified below the maximum value given. (Note 1)		0.1	±ppm	+ ►
2.8	**Load sensitivity**	±10% load change		0.2	±ppm	+ ►
2.9	**Root Allan Variance**	1 second Tau		1.0	ppb	+ ►
2.10	**Long term stability**	Frequency drift over 1 year		1.0	±ppm	+ ►
2.11	**G Sensitivity**	Gamma vector of all three axes from 30Hz to 1500Hz, typical values (Note 1)		2.0	ppb/G	+ ►

3.0 POWER SUPPLY

INSERT NEW LINE

Line	Parameter	Test Condition	Min.	Max.	Units	Modify
3.1	**Supply voltage**	Supply voltage range based on nominal 3.3V	3.14	3.46	V	+ ►
3.2	**Current**	At maximum supply voltage		1.5	mA	+ ►

4.0 OSCILLATOR OUTPUT

INSERT NEW LINE

Line	Parameter	Test Condition	Min.	Max.	Units	Modify
4.1	**Output waveform**	Clipped sinewave				+ ►
4.2	**Output voltage level**	At minimum supply voltage	0.8		V	+ ►
4.3	**Output load resistance**	Operating range	9.0	11.0	kOhm	+ ►
4.4	**Output load capacitance**	Operating range	9.0	11.0	pF	+ ►

5.0 SSB PHASE NOISE

INSERT NEW LINE

Line	Parameter		Typical	Units	Modify
5.1	**SSB phase noise power density at 1Hz offset**	Typical values at 25ºC.	-55	dBc/Hz	+ ►

5.2	**SSB phase noise power density at 10Hz offset**	Typical values at 25ºC.	-85	dBc/Hz	+
5.3	**SSB phase noise power density at 100Hz offset**	Typical values at 25ºC.	-110	dBc/Hz	+
5.4	**SSB phase noise power density at 1KHz offset**	Typical values at 25ºC.	-125	dBc/Hz	+
5.5	**SSB phase noise power density at 10KHz offset**	Typical values at 25ºC.	-140	dBc/Hz	+

6.0 ENVIRONMENTAL

INSERT NEW LINE

6.1	**Shock**	Half sinewave acceleration of 100G peak amplitude for 11ms duration, 3 cycles each plane.	+
6.2	**Random Vibration**	10G RMS 30Hz to 1500Hz duration of 6 hours.	+
6.3	**Humidity**	After 48 hours at 85ºC ±2ºC 85% relative humidity non-condensing	+
6.4	**Thermal shock test**	Exposed at -40ºC for 30 minutes then to 85ºC for 30 minutes constantly for a period of 5 days.	+
6.5	**Storage temperature**	-40 to 85ºC	+

7.0 MARKING

INSERT NEW LINE

7.1	**Type**	Engraved	+
7.2	**Line 1**	Rakon logo	+
7.3	**Line 2**	IT225B	+
7.4	**Line 3**	Frequency in MHz (to 3 decimal places or greater depending on the no. of significant digits after the decimal point)	+
7.5	**Line 4**	Date code WWYY	+

8.0 MANUFACTURING INFORMATION

INSERT NEW LINE

8.1	**Washing and reflow**	Able to withstand aqueous washing process and normal solder reflow processes.	+
8.2	**Packaging description**	Tape and reel. (1000pc max).	+

9.0 SPECIFICATION NOTES

INSERT NEW LINE

9.1	**Note 2**	The unit will operate within the minimum and maximum values specified.	+
9.2	**Note 1**	The maximum value is the specification. A minimum value, if present, indicates the tightest specification available.	+

IMAGES

CAT007E.gif	TXO & IT CLIPPED SINEWAVE TEST CIRCUIT
CAT011A.gif	200A&B TAPE & REEL DRAWING
CAT015C.gif	200 SERIES REFLOW PROFILE FOR NON RoHS COMPLIANT PRODUCTS
CAT082B.gif	IT200B MODEL DRAWING
CAT384A.gif	200A & B SERIES REFLOW PROFILE FOR RoHS COMPLIANT PRODUCTS