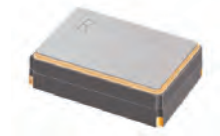


Low cost SMD Temperature Compensated Crystal Oscillator for indoor wireless infrastructure applications e.g femtocells

The RFPT400 is a high stability SMD TCVCXO designed and specified specifically to meet the short-term stability requirements for indoor wireless infra-structure products, e.g femtocells.

Product description

The RFPT400 is a high stability SMD TCVCXO designed and specified specifically to meet the short-term stability requirements for indoor wireless infra-structure products at a fraction of the cost of oven-stabilised oscillators. Using Rakon's advanced fourth-order analogue frequency compensation system 'Pluto™', the TCVCXO achieves unrivalled control of frequency variation with respect to temperature over the critical indoor temperature range. The stability of the RFPT400 allows a local area Base Station (BS) to achieve the frequency accuracy requirements of ETSI TS 125 104 without the need for minute-by-minute monitoring and adjustment. The BS's reliance on external sources of frequency compensation is reduced to an approximately once-per-week rate with a corresponding significant reduction in network load and infrastructure cost.



Applications

- Femtocell
- Base stations

Features

- 0°C~70°C, stability ≤ ±100pb

Specifications

1.0 SPECIFICATION REFERENCES

Line	Parameter	Description
1.1	Model description	RFPT400
1.2	RoHS compliant	Yes. Part numbers with suffix 'LF'
1.3	Package size available	5.0mm x 3.2mm

2.0 FREQUENCY CHARACTERISTICS

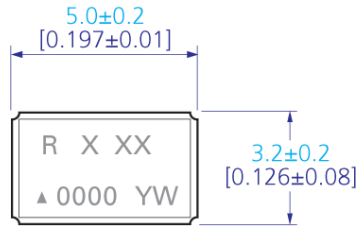
Line	Parameter	Test Condition	Value	Unit
2.1	Frequency range	Frequency range available	10 to 30	MHz
2.2	Frequency calibration	Frequency offset at 25°C, sixty minutes after reflow	±2 max	ppm
2.3	Frequency stability over temperature	Over 0°C ~ 70°C (dF/dT ≤ 1°C/min) at fixed supply voltage and load	±0.08 to 0.25	ppm
2.4	Temperature range	Operating temperature range over which temperature stability is measured	0 to 70	°C
2.5	Supply voltage stability	±2% variation in supply voltage at 25°C	±10 max	ppb
2.6	Load sensitivity	±2% variation in magnitude from 10kΩ//10pF	±5 max	ppb
2.7	Long term stability	Ageing rate following reflow after day 1. (Typical)	±10 max	ppb/day
2.8	Long term stability	Ageing rate following reflow after day 7. (Typical)	±3 max	ppb/day
2.9	Long term stability	Ageing rate following reflow after day 30. (Typical)	±1 max	ppb/day
2.10	Long term stability	Long term stability after 1 year	±1000 max	ppb
2.11	Long term stability	Long term stability after 5 years	±1500 max	ppb

3.0 POWER SUPPLY

Line	Parameter	Test Condition	Value	Unit
3.1	Supply voltage	Typical:	3.3	V
3.2	Current	load 10kΩ//10pF	3 max	mA

Drawing Name: RFPT400 Model Drawing

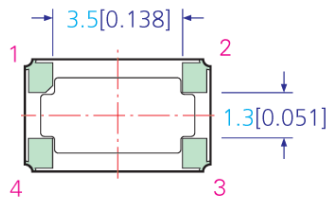
MODEL DRAWING



TOP VIEW



SIDE VIEW

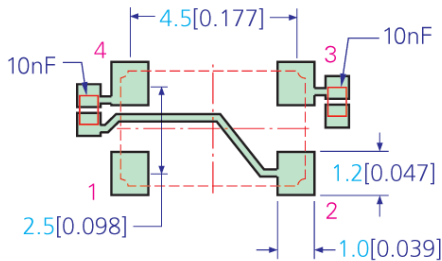


BOTTOM VIEW

NOTE:

- 1) Pin connections are detailed in the specification.
- 2) For correct operation a 10nF supply de-coupling capacitor should be placed next to the device, as shown above. If an AC coupled output is required a 10nF should be placed in series with output pad 3.

RECOMMENDED PAD LAYOUT - TOP VIEW



TITLE: RFPT400 MODEL OUTLINE DRAWING

FILENAME: RFPT400_MD

RELATED DRAWINGS:

REVISION: A

DATE: 22-Jul-10

SCALE: 5 : 1

Millimeters [inch]

Tolerance:

XX = ±0.5

X.X = ±0.2

X.XX = ±0.10

X.XXX = ±0.05

X° = ±1.0°

Hole = ±0.10

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