RFPT200

The CHARON is a SPI controlled high accuracy TCXO with embedded timer and alarm function.

The Charon is a high stability 7x5 SMD Digitally Controlled Temperature Controlled Crystal Oscillator (DCTCXO) designed and specified to bring together the highest stability TCXO performance with digital frequency control, separate low frequency output, timer and alarm functionality.

Product description

Serial Peripheral Interface (SPI) controlled high accuracy TCXO with embedded timer and alarm function. Using Rakon's advanced Pluto™ analogue frequency compensation system, the DCTCXO achieves unrivalled frequency stability. A custom ASIC, Charon (Pluto's moon) has been designed to closely interface with the Pluto™ ASIC to provide the extra enhanced functionality in a miniature 7x5 SMD package. In addition to market leading stability the Charon device features integrated timing and control functions. A low frequency timing pulse is derived from a programmable division ratio of the high stability oscillator. This drives the onboard 32 bit timer, which coupled to a 32 bit programmable comparator and alarm circuitry, enables a system to enter a low power standby mode and be woken at a precise time in the future. All digital control is via a standard 4-wire SPI interface.

Applications

- Military
- Other

Features

- 32 bit timer
- 32 bit comparator with alarm output
- Low frequency timing pulse
- Digital frequency adjustment
- Low power standby mode

Specifications

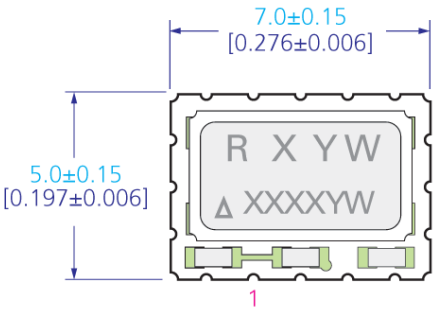
1.0 SPECIFICATION REFERENCES

Line	Parameter	Description
1.1	Model description	RFPT200 'Charon'
1.2	RoHS compliant	Available on request
1.3	Package size available	7.0 mm x 5.0 mm x 2.8 mm

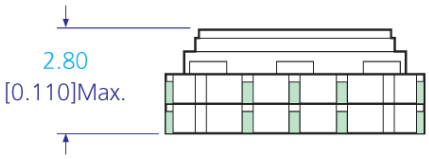
2.0 FREQUENCY CHARACTERISTICS

Line	Parameter	Test Condition	Value	Unit
2.1	Frequency range	Frequency range available depends on output type (Note 1)	3 to 40	MHz
2.2	Frequency calibration	At 25°C at mid-range of DAC, reference nominal frequency	±0.5 to 1	ppm
2.3	Frequency stability over temperature	Reference to (Fmax+Fmin)/2. Max ±0.15 ppm only available over -20°C to 70°C (Note 2)	±0.15 to 2	ppm
2.4	Temperature range	The operating temperature range over which the frequency stability is measured (Note 3)	-55 to 95	°C
2.5	Stability vs. supply voltage changes	±5% variation in supply voltage. Nominal value ±0.1 ppm	±0.05 to 0.2	ppm
2.6	Stability vs. load changes	±10% variation in load. Nominal value ±0.1 ppm	±0.05 to 0.2	ppm
2.7	Long term stability	At 25°C, first year. Nominal value ±1 ppm	±0.5 to 2	ppm
2.8	Long term stability	At 25°C, 10 years predicted, including first year. Nominal value ±3 ppm	±2 to 5	ppm
2.9	Drift due to reflow soldering	At 25°C, at mid-range of DAC, 24 hours after reflow.	±0.5 to 1	ppm

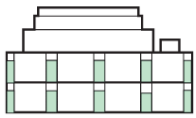
Drawing Name: RFPT200 Model Drawing



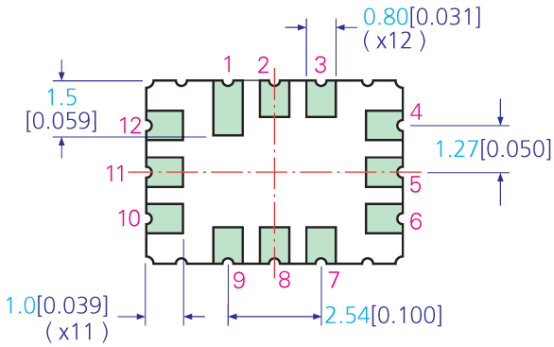
TOP VIEW



SIDE VIEW



END VIEW



BOTTOM VIEW

NOTE: Pin connections are detailed in the specification

TITLE: RFPT200 MODEL OUTLINE DRAWING	
FILENAME: RFPT200_MD	REVISION: A
RELATED DRAWINGS:	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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