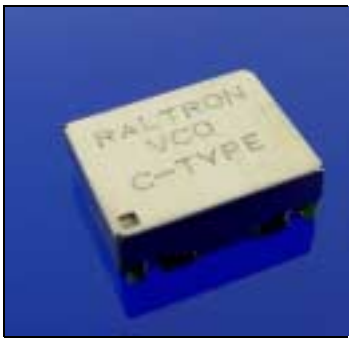
Voltage Controlled Oscillator - VCO
RQC-Series

Features

- Frequency up to 2 GHz
- Low Phase Noise
- Modulation Input available

Applications

- Base Stations
- Analog and Digital Radio
- Instrumentation

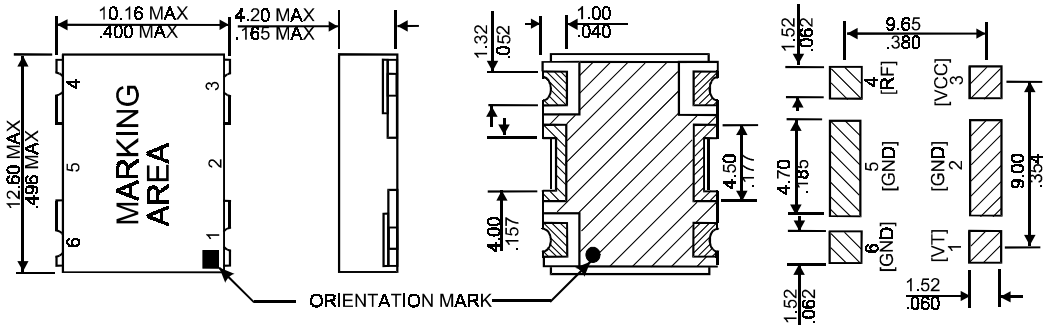


Description

The RQC-type is a general purpose VCO. Components are selected for high-Q and tight tolerances.
Raltron's RQC-series is developed and manufactured in its ISO9000 certified facility in Miami. RF-simulation (CAE), automated test-equipment (Agilent VCO/PLL-Analyzer) and statistical process control (SPC) are integral part of R&D and manufacturing – which ensure minimal process variances and a high degree of repeatability.

Mechanical Specification

TOP SIDE BOTTOM SOLDER PATTERN



COMMENTS

Pad / Functions:
[1] Tuning Voltage
[3] Supply Voltage
[4] RF-Output
[2,5] Ground
[6] Modulation or Gnd

Height "H" (max):
4.20mm / .165"

Outline Tolerances:
±0.20mm / .008"

Electrical Specification

PARAMETER	COMMENTS, EXAMPLES	SYMBOL	MIN	TYP	MAX	UNIT
Max Frequency	Currently available in RQR-package	fo			2000	MHz
Tuning Ratio	Ratio of upper-to-lower freq (2 = "Octave-VCO")	f-up : f-low		1.1	1.5	-
Tuning Voltage	Battery operated 2V, Stationary: 5V or higher	Vt	0~2	0~5	0~25	V
Supply Voltage	Battery operated 3.3V to 5V, Stationary up to 12V	Vcc	3.3	5	12	V
Supply Current	Dependent on Frequency and Output Power	Icc	10	20	30	mA
Output Power	Output Power Tolerance is typ. ±3dB (min. ±1dB)	Pout	-3	+3	+10	dBm
Harmonic Suppression	Dependent on Tuning Range and Freq	a(2fo)		-20		dBc
Pushing	Dependent on Freq, Tuning R., typ 0.1%~0.5% fo	df/dVcc		1		MHz/V
Pulling	Dependent on Freq, Output Power and Circuit.	df/dZL		3		MHz

General Specification

1. Load Impedance is 50 Ohms.
2. Operating temperature range is typically –40°C…+85°C.
3. The package is non-hermetic. Substrate is glass-reinforced laminate, cover is folded nickel-silver.
4. Bypass-capacitors (ceramic) from Vcc to Ground are recommended: 1nF||100pF.
5. Customized specifications may deviate from this General Specification.
6. Phase-noise performance depends on the individual specification. Phase Noise is strongly dependent on (a) frequency (b) supply voltage and (c) tuning range.
7. The phase noise graph (to right) shows the characteristic of 2 typical RQC-VCOs. Samples are measured at 5V supply and have 3dBm output power and ±1% tuning range.

Phase Noise