

### Features

- Frequency up to 5.5 GHz
- Coaxial Resonator Oscillator
- Low Phase Noise
- Custom options available

### Applications

- Telecommunications
- High Performance Radio
- Base Stations
- Instrumentation

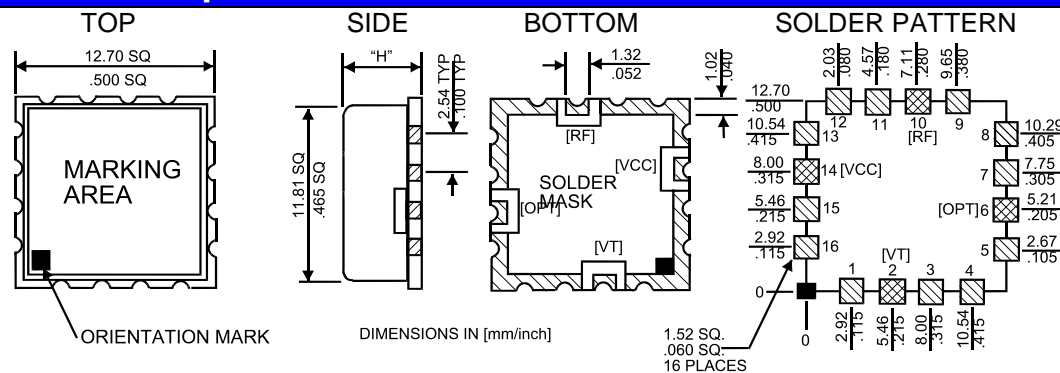
### Description

The RQR-FREQ-LPH type is a VCO designed to meet the requirements for a variety of applications. The unit main characteristics are Ultra-Low Noise, Narrow Band and Linear Tuning. Components are selected for high-Q and tight tolerances.

Raltron's RQR-FREQ-LPH 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 ensures minimal process variances and a high degree of repeatability.



### Mechanical Specification



**Pad / Functions:**  
 [ 2 ] Tuning Voltage  
 [ 6 ] Optional  
 [10] RF-Output  
 [14] Supply Voltage  
 other pads: Ground

**Height "H" (max):**  
 Standard: 6.0 / .24"

**Outline Tolerances:**  
 ±0.20mm / .008"

### Electrical Specification

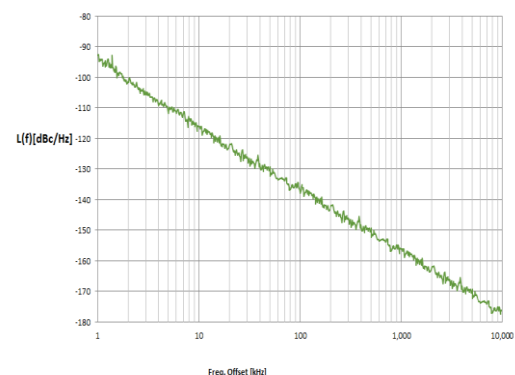
PARAMETER	COMMENTS, EXAMPLES	SYMBOL	MIN	TYP	MAX	UNIT
Max Frequency	Currently available in RQR-package	fo			5500	MHz
Tuning Voltage		Vt		0~5	0~20	V
Supply Voltage	Typical Voltage 8V, Stationary up to 12V	Vcc	5	8	12	V
Supply Current	Dependent on Frequency and Output Power	Icc	10	30	45	mA
Output Power	Tolerance is typ. ±3dBm (min. ±1dBm)	Pout	-3	0	+3	dBm
Harmonic Suppression	Dependent on Tuning Range and Freq	a(2fo)		-15		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		1		MHz

### General Specification

1. Load Impedance is 50 Ohms.
2. Operating temperature range is typically 0°C...+85°C.
3. The package is non-hermetic. Substrate is glass-reinforced laminate; the 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 a typical RQRA-2500-LPH VCO.
8. The sample was measured at 8V supply and have 1dBm output power.

### Phase Noise

SSB Phase Noise (see Note 7)



Ultra-Low Phase Noise-VCO 2500 MHz ±1%