

### Features

- Frequency up to 12.0 GHz
- Micro-strip Line Topologic
- Low Phase Noise
- Custom options available

### Applications

- Telecommunications
- High Performance Radio
- Base Stations
- Instrumentation

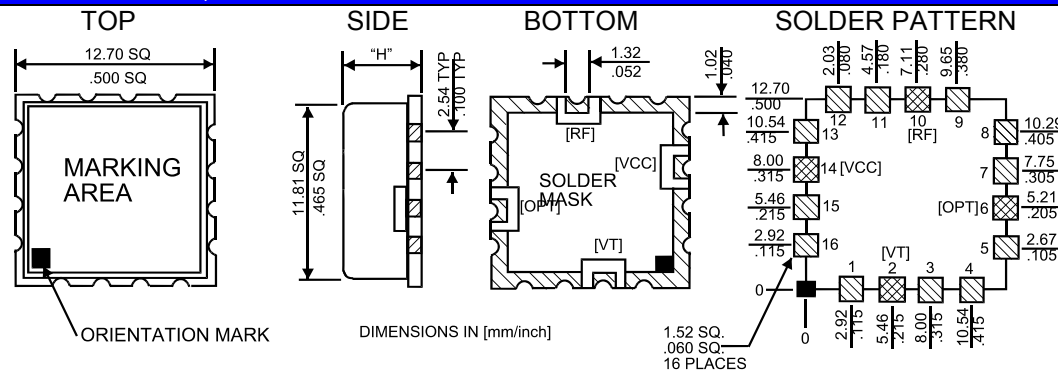
### Description

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

Raltron's RQR-FREQ-HF 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
Frequency Range	Currently available in RQR-package	fo	6000		12000	MHz
Tuning Voltage		Vt		0~5	0~15	V
Supply Voltage	Typical Voltage 5V, Stationary up to 12V	Vcc		5	12	V
Supply Current	Dependent on Frequency and Output Power	Icc		150		mA
Output Power	Output Power Tolerance is typ. ±5dBm	Pout	-10	-5	0	dBm
Harmonic Suppression	Dependent on Tuning Range and Freq	a(2fo)		-10		dBc
Sub-harmonic Suppression	Dependent on Tuning Range and Freq	a(fo/2)		-20		dBc
Pushing	Dependent on Freq, Tuning R.	df/dVcc		3.0		MHz/V
Pulling	Dependent on Freq, Output Power and Circuit.	df/dZL		2.5		MHz

### General Specification

- Load Impedance is 50 Ω.
- Operating temperature range is typically 0°C...+85°C.
- The package is non-hermetic. Substrate is glass-reinforced laminate; the cover is folded nickel-silver.
- Bypass-capacitors (ceramic) from Vcc to Ground are recommended: 1nF||50pF.
- Customized specifications may deviate from this General Specification.
- Phase-noise performance depends on the individual specification. Phase Noise is strongly dependent on (a) frequency (b) supply voltage and (c) tuning range.
- The phase noise graph (to right) shows the characteristic of a typical RQRA-6500-HF VCO.
- The sample was measured at 5V supply and have -2dBm output power.

Ultra-Low Phase Noise-VCO 6500 MHz ±1%

### Phase Noise

