# **RFVC6406**



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Octave Bandwidth Voltage Controlled Oscillator 2000MHz to 4000MHz

The RFVC6406 is an octave bandwidth Voltage Controlled Oscillator (VCO) designed for high performance transceiver applications.



Functional Block Diagram



Package: 16-pin, 12.7mm x 12.7mm x 4.57mm

#### **Features**

- Octave Bandwidth 2000MHz to 4000MHz
- -112dBc/Hz Typical at 100kHz Offset
- POUT 11dBm Typical
- 5V Supply
- 45mA Current Consumption

#### **Applications**

- Test and Measurement Instrumentation
- Wideband Radios for Military and Commercial Applications

#### **Ordering Information**

RFVC6406

Call us at 1.480.756.6070





#### **Absolute Maximum Ratings**

Parameter	Rating	Unit
Supply Voltage (V <sub>cc</sub> )	5.0	V
Control Voltage	0 to 16	V
DC Voltage on RFOUT	25	V
Operating Temperature Range	-40 to +85	°C
Storage Temperature Range	-55 to +125	°C
ESD Rating - Human Body Model (HBM)	TBD	
Moisture Sensitivity Level	MSL1	



<mark>∕</mark> rfmd⋙ RFMD Green: RoHS status based on EU Directive 2011/65/EU (at time of this

Caution! ESD sensitive device.

document revision), halogen free per IEC 61249-2-21, < 1000ppm each of antimony trioxide in polymeric materials and red phosphorus as a flame retardant, and <2% antimony in solder.

Exceeding any one or a combination of the Absolute Maximum Rating conditions may cause permanent damage to the device. Extended application of Absolute Maximum Rating conditions to the device may reduce device reliability. Specified typical performance or functional operation of the device under Absolute Maximum Rating conditions is not implied.

#### **Nominal Operating Parameters**

Parameter	Specification		1 Junit	Oradition	
	Min	Тур	Max	Unit	Condition
General Performance					Specifications: -40°C to 85°C
Frequency	2000		4000	MHz	
Tuning Voltage	0.5		16	V	
Tuning Sensitivity		150		MHz/V	
Output Power	8	11	13	dBm	
2 <sup>nd</sup> Harmonic		-15		dBc	
SBB Phase Noise at 1kHz Offset		-60	-55	dBc/Hz	
SBB Phase Noise at 10kHz Offset		-90	-85	dBc/Hz	
SBB Phase Noise at 100kHz Offset		-112	-105	dBc/Hz	
SBB Phase Noise at 1MHz Offset		-132	-120	dBc/Hz	
Power Supply		5		V	
Supply Current		45	50	mA	
Frequency Pushing (3.15V to 3.45V)		4		MHz/V	
Frequency Pushing (12dB RL)		2		MHz, p-p	
Tuning Port Capacitance		18		pF	
Output Impedance		50		Ω	
Modulation BW		1000		kHz	

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#### Typical Performance Board Performance: $V_{CC} = 5V$ unless otherwise noted

**PROPOSED** 











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-100

2000

2500

3000

Frequency (MHz)



-40°C

-25°C

4000

3500

#### 100 kHz Phase Noise Offset versus Frequency 10kHz Phase Noise Offset versus Frequency -100 -80 윤 -105 -85 10kHz Phase Noise Offset (dBc/Hz) -85°C dBc/ Offset Voise -110 -90 Phase -74 -115 -40°C -04 -25°C -85°C

4000

#### Typical Performance Board Performance: V<sub>CC</sub> = 5V unless otherwise noted

**PROPOSED** 

#### **Typical Performance Board Performance** V<sub>CC</sub> = 5V, Frequency 2000MHz

3500



-120 L 2000

2500

3000

Frequency (MHz)

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## **Typical Performance Board Performance** $V_{CC}$ = 5V, Frequency 2500MHz

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#### Typical Performance Board Performance V<sub>CC</sub> = 5V, Frequency 3000MHz



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### **Typical Performance Board Performance** $V_{CC} = 5V$ , Frequency 3500MHz

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#### Typical Performance Board Performance V<sub>CC</sub> = 5V, Frequency 4000MHz



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#### Package Outline Drawing 12.7mm x 12.7mm Laminate Module



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#### **Recommended Land Pattern** Dimensions in millimeters

**PROPOSED** 

