

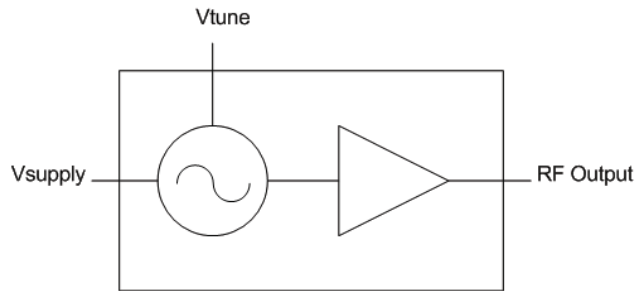


Features

- 8GHz to 12GHz VCO
- 5V Operation, 55mA
- +4.0dBm Typical Output Power
- -66dBc/Hz at 10kHz
- -93dBc/Hz at 100kHz

Applications

- Military - Radar, Communications, ECM/IED
- Satcomm - Communication Modems
- Test Instrumentation
- Industrial/Medical Equipment



Functional Block Diagram

Product Description

RFMD's RFVC1800C wideband Voltage Controlled Oscillator is an InGaP HBT MMIC with integrated VCO core and RF output buffer. The part operates from a single +5V supply for circuit bias and 0V to +13V for frequency control. The RFVC1800C offers low phase noise and low power consumption.

Ordering Information

RFVC1800C Connectorized VCO

Optimum Technology Matching® Applied

- | | | | |
|---|--------------------------------------|-------------------------------------|------------------------------------|
| <input type="checkbox"/> GaAs HBT | <input type="checkbox"/> SiGe BiCMOS | <input type="checkbox"/> GaAs pHEMT | <input type="checkbox"/> GaN HEMT |
| <input type="checkbox"/> GaAs MESFET | <input type="checkbox"/> Si BiCMOS | <input type="checkbox"/> Si CMOS | <input type="checkbox"/> BiFET HBT |
| <input checked="" type="checkbox"/> InGaP HBT | <input type="checkbox"/> SiGe HBT | <input type="checkbox"/> Si BJT | <input type="checkbox"/> LDMOS |

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Absolute Maximum Ratings

Parameter	Rating	Unit
Supply Voltage (V_{CC})	5.5	V
V_{TUNE}	0 to +15	V
Storage Temperature	-55 to +125	°C
Operating Temperature	-40 to +85	°C
ESD Rating – Human Body Model (HBM)	Class1A	



Caution! ESD sensitive device.

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.

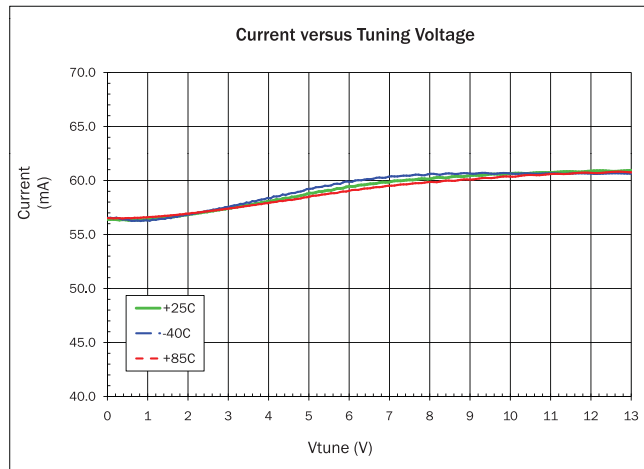
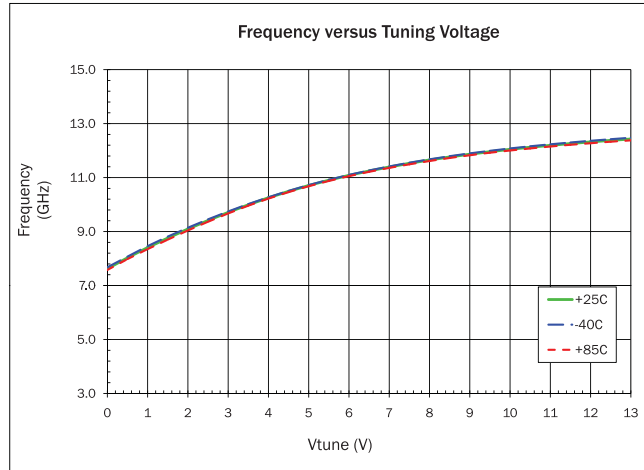
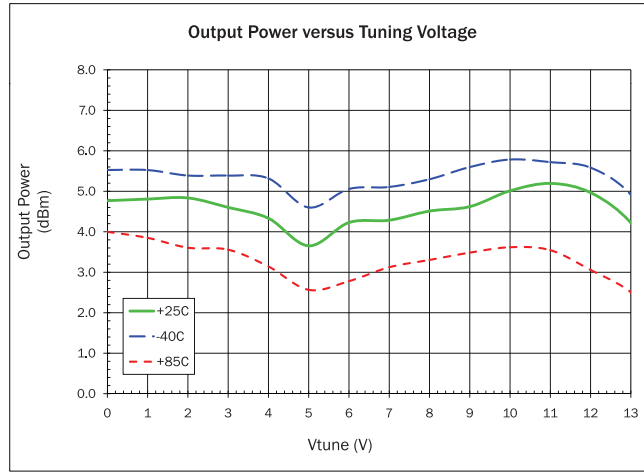
RoHS status based on EUDirective2002/95/EC (at time of this document revision).

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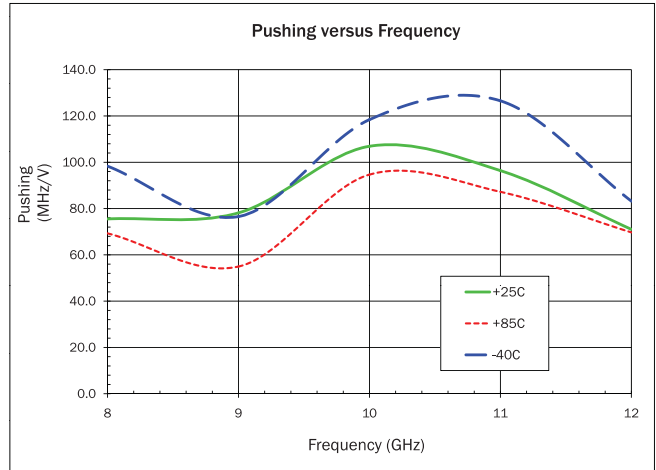
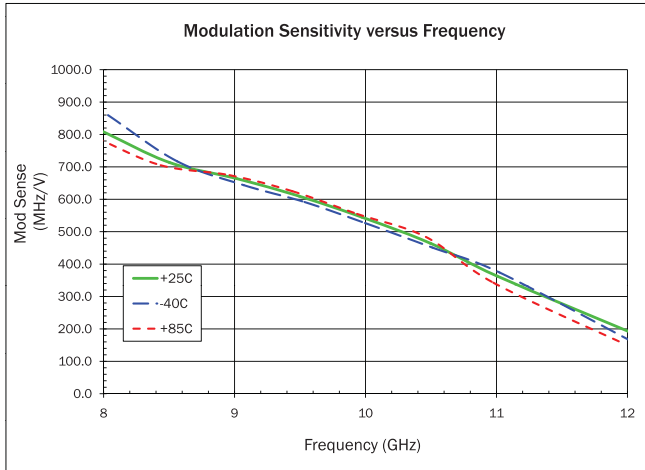
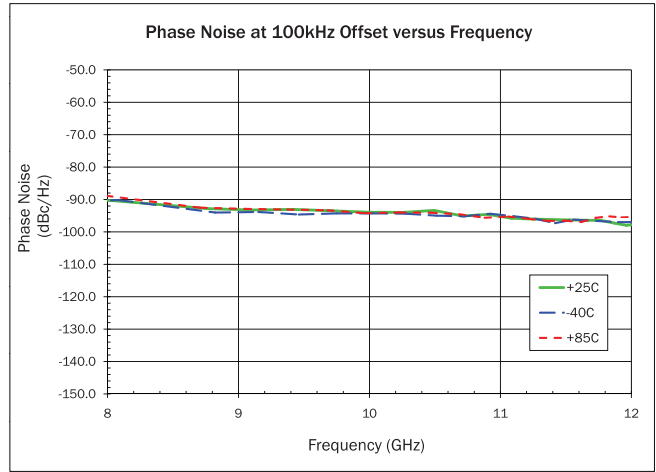
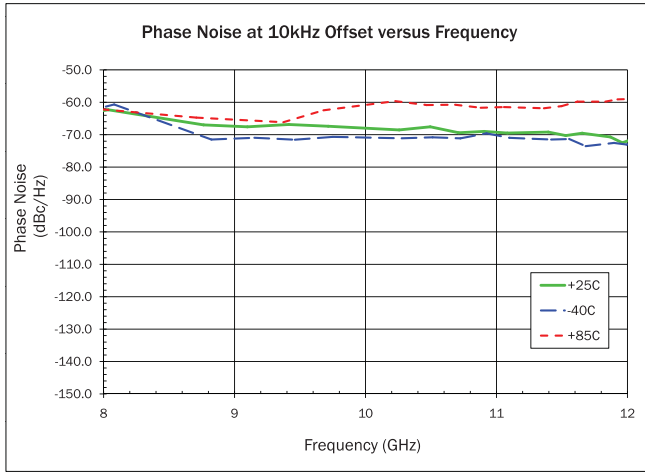
Parameter	Specification			Unit	Condition
	Min.	Typ.	Max.		
Overall					
Frequency Range	8		12	GHz	
Supply Voltage (V_S)	4.75	5.00	5.25	V	Recommended operating range
Supply Current	40	55	70	mA	
Tuning Voltage (V_{TUNE})	0		13	V	
Tuning Sensitivity		565		MHz/V	
Output Power	2	4		dBm	
Output Phase Noise at 10kHz		-66		dBc/Hz	
Output Phase Noise at 100kHz		-93		dBc/Hz	
2nd Harmonic		-20		dBc	
Frequency Pushing		90		MHz/V	
Frequency Pulling (2:1 VSWR)		2.1		MHz pp	
RF Output Return Loss		-7.5		dB	
Frequency Drift Rate		-0.7		MHz/°C	
V_{TUNE} Port Input Capacitance		9		pF	

Test Conditions: $V_S=5V$, Freq=8GHz to 12GHz, $T=25^\circ C$ unless noted otherwise.

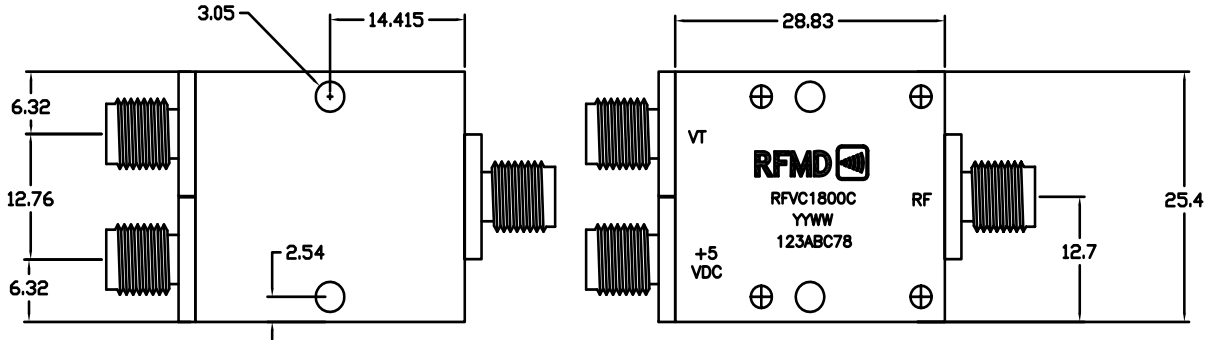
RFVC1800C Thermal Performance versus Tuning Voltage



RFVC1800C Thermal Performance versus Frequency

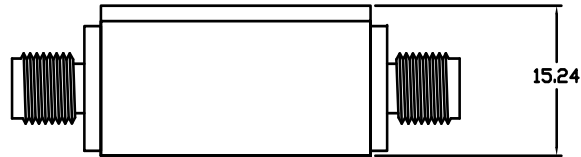


Pin Out and Package Drawing (mm)



Bottom View

Top View



Side View

Date Code - YYWW (Year and Week)

Trace Code - 123ABC78