

Package: Module, 3 Connectors,
22.86mmx22.86mmx13.97mm

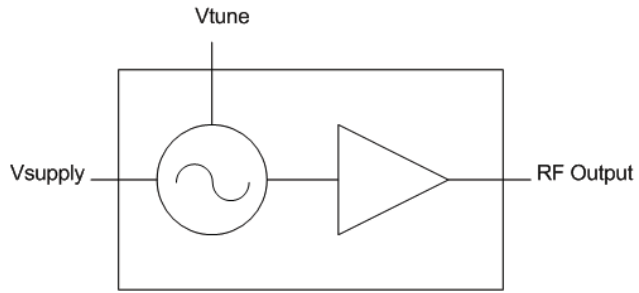


Features

- 5GHz to 10GHz VCO
- 5V Operation, 52 mA
- +3.0dBm Typical Output Power
- -72dBc/Hz @ 10kHz
- -96dBc/Hz @ 100kHz

Applications

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



Functional Block Diagram

Product Description

RFMD's RFVC1801C 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 +18V V_{TUNE} for frequency control. The RFVC1801C offers low phase noise and low power consumption.

Ordering Information

RFVC1801C 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 |

RF MICRO DEVICES®, RFMD®, Optimum Technology Matching®, Enabling Wireless Connectivity™, PowerStar®, POLARIS™ TOTAL RADIO™ and UltimateBlue™ are trademarks of RFMD, LLC. BLUETOOTH is a trademark owned by Bluetooth SIG, Inc., U.S.A. and licensed for use by RFMD. All other trade names, trademarks and registered trademarks are the property of their respective owners. ©2006, RF Micro Devices, Inc.

Absolute Maximum Ratings

Parameter	Rating	Unit
Supply Voltage (V_{CC})	5.5	V
V_{TUNE}	0 to +20	V
Storage Temperature	-55 to +125	°C
Operating Temperature	-40 to +85	°C
ESD Rating – Human Body Model (HBM)	Class0	



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.

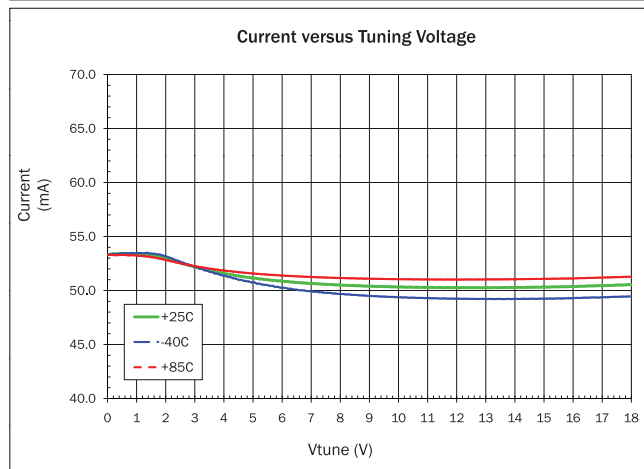
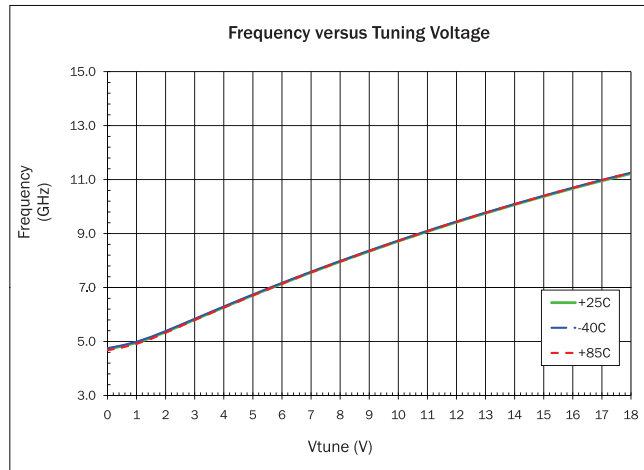
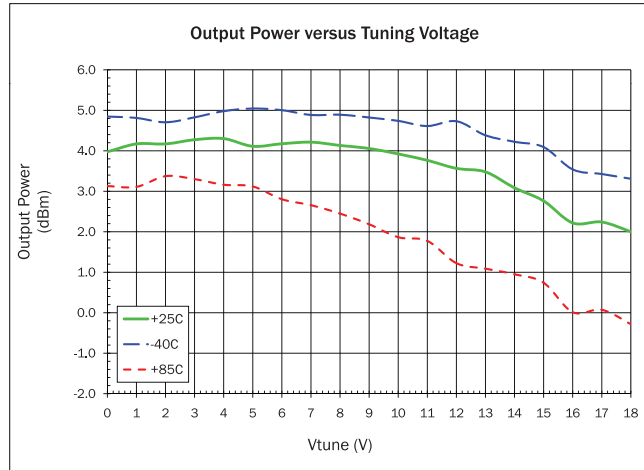
RoHS status based on EUDirective2002/95/EC (at time of this document revision).

The information in this publication is believed to be accurate and reliable. However, no responsibility is assumed by RF Micro Devices, Inc. ("RFMD") for its use, nor for any infringement of patents, or other rights of third parties, resulting from its use. No license is granted by implication or otherwise under any patent or patent rights of RFMD. RFMD reserves the right to change component circuitry, recommended application circuitry and specifications at any time without prior notice.

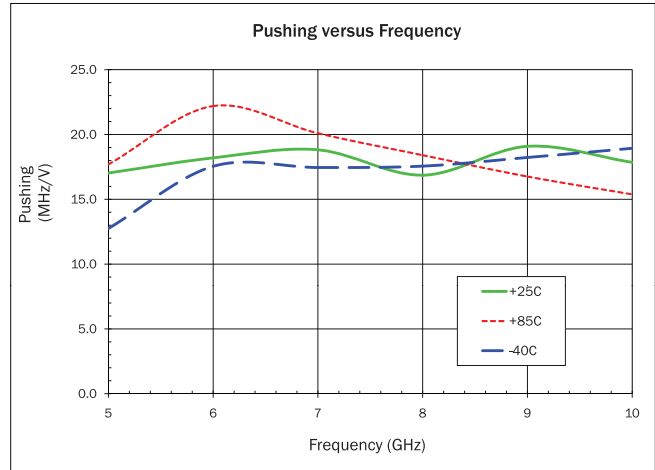
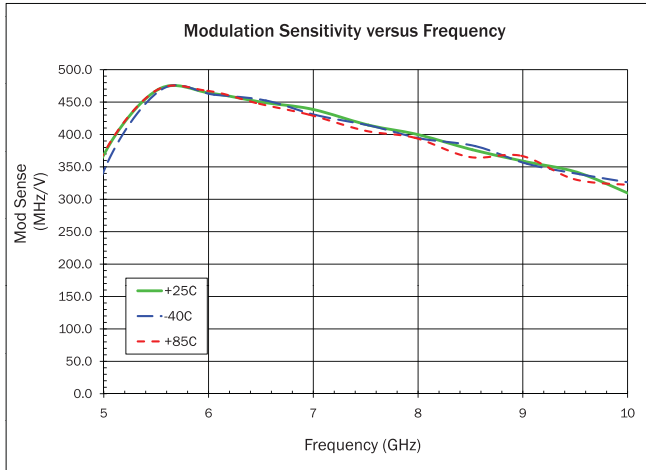
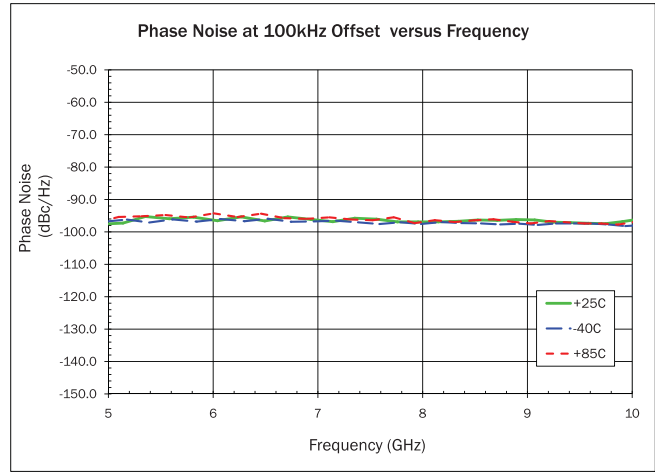
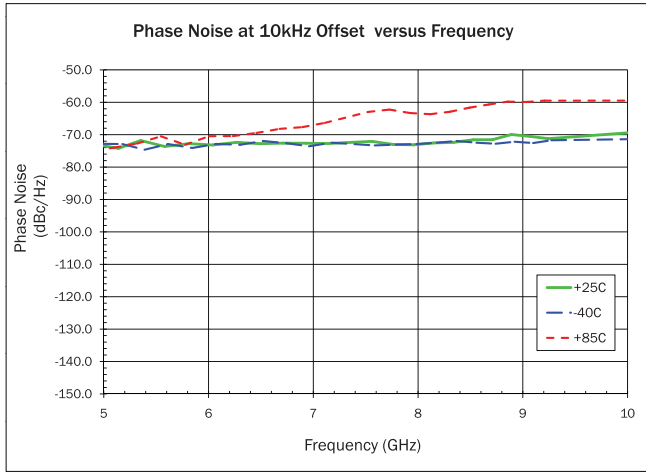
Parameter	Specification			Unit	Condition
	Min.	Typ.	Max.		
Frequency					
Frequency Range	5.0		10.0	GHz	
Supply Voltage (V_S)	4.75	5.00	5.25	V	Recommended operating range.
Supply Current	40	52	70	mA	
Tuning Voltage (V_{TUNE})	0		18	V	
Tuning Sensitivity		390		MHz/V	
Output Power		3		dBm	
Output Phase Noise at 10kHz		-72		dBc/Hz	
Output Phase Noise at 100kHz		-96		dBc/Hz	
2nd Harmonic		-20		dBc	
Frequency Pushing		18		MHz/V	
Frequency Pulling (2:1 VSWR)		5		MHz pp	
RF Output Return Loss		-10		dB	
Frequency Drift Rate		-0.7		MHz/°C	
V_{TUNE} port input capacitance		7		pF	

Test Conditions: $V_S=5V$, Freq=5GHz to 10GHz, T=25 °C unless noted otherwise

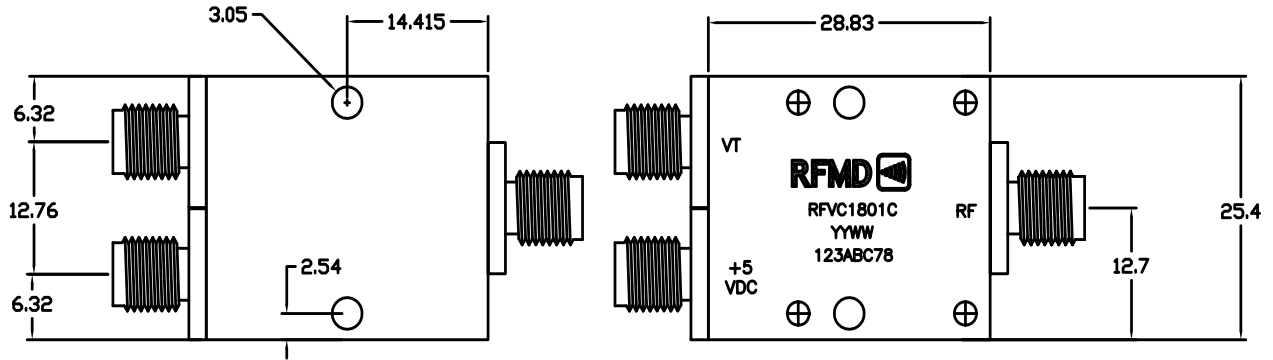
RFVC1801C Thermal Performance versus Tuning Voltage



RFVC1801C Thermal Performance versus Frequency

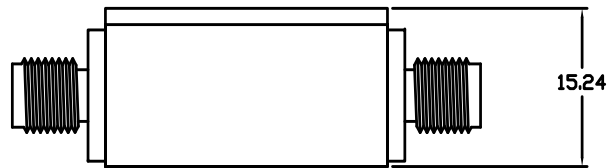


Pin Out and Package Drawing (mm)



Bottom View

Top View



Side View

Date Code - YYWW (Year and Week)

Trace Code - 123ABC78