

VCO-107S/STC

HIGH RELIABILITY MILITARY AND SPACE VCO

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

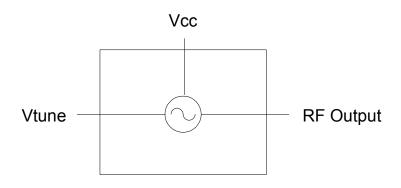


Features

- 500 MHz to 1000 MHz VCO
- 15V Operation
- +13.5dBm Typical Output Power
- -92dBc/Hz at 10kHz
- -117 dBc/Hz at 100 kHz
- -140dBc/Hz at 1000kHz

Applications

- Instrumentation
- Aerospace
- Test Equipment
- Plug and Play



Functional Block Diagram

Product Description

RFMD's VCO-107S/STC is a hybrid assembled voltage controlled oscillator integrated into a connectorized module. The VCO-107 features an integrated resonator and tuning varactors. The part features excellent performance over temperature.

Ordering Information

VCO-107S/STC High Reliability Military and Space VCO

Optimum Technology Matching® Applied

☐ GaAs HBT	☐ SiGe BiCMOS	☐ GaAs pHEMT	☐ GaN HEMT
☐ GaAs MESFET	☐ Si BiCMOS	□ si cmos	☐ BiFET HBT
☐ InGaP HBT	☐ SiGe HBT	▼ Si BJT	☐ LDMOS

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VCO-107S/STC



Absolute Maximum Ratings

Parameter	Rating	Unit
Supply Voltage (V _{CC})	17	V
V _{TUNE}	0 to 22	V
Storage Temperature	-65 to 150	°C
Operating Temperature	-55 to 100	°C
ESD JESD22 - A114 Human Body Model (HBM)		V



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 EUDirective 2002/95/EC (at time of this document revision).

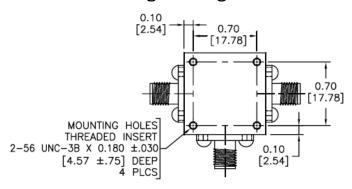
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Parameter	Min.	Min. Typ. Max.		Unit	Condition	
Frequency						
Frequency Range	500		1000	MHz	100% Production Tested	
Tuning Voltage						
500MHz	0	1.8		V _{DC}	100% Production Tested	
1000 MHz		17.1	20	V _{DC}	100% Production Tested	
Tuning Sensitivity						
500MHz	24	31.3	39	MHz/V	100% Production Tested	
625MHz	23	30.6	38	MHz/V	100% Production Tested	
750MHz	34	45.6	57	MHz/V	100% Production Tested	
875MHz	28	37.2	47	MHz/V	100% Production Tested	
1000MHz	13	17.8	22	MHz/V	100% Production Tested	
Output Power	10	13.5	16	dBm	100% Production Tested	
Output Phase Noise						
10 kHz		-92	-86	dBc/Hz	100% Production Tested	
100 kHz		-117	-111	dBc/Hz	100% Production Tested	
1000 kHz		-140	-134	dBc/Hz	100% Production Tested	
Power Supply	14.75	15	15.25	V	100% Production Tested	
Supply Current		15.4	18	mA	100% Production Tested	
Harmonic Suppression						
2nd Harmonic		-13	-10	dBc	100% Production Tested	
3rd Harmonic		-13	-10	dBc	100% Production Tested	
Spurious (Non-Harmonic)			-80	dBc		
Frequency Pushing		10	14	MHz p-p	14.75V to 15.25V	
Frequency Pulling		12	20	MHz p-p	20dB RL	
Output Impedance		50		Ω		
3dB Modulation Bandwidth	15000	20000		kHz	$Z_G = 50\Omega$	
Tune Port Impedance (DC)		50		kΩ		



Pin	Function	Description
1	VTUNE	Tuning voltage.
2	VCC	Supply voltage.
3	RF Output	VCO RF output.

Pin Out and Package Drawing



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PINOUT	FUNCTION		
PIN	vco	MIXER	POWER DIVIDER
1	TUNING VOLTAGE	RF PORT	OUT 2
2	SUPPLY VOLTAGE	X PORT	IN
3	RF OUTPUT	LO PORT	OUT 1

