

Package: Module, 22.86 mm x 22.86 mm x 13.97 mm

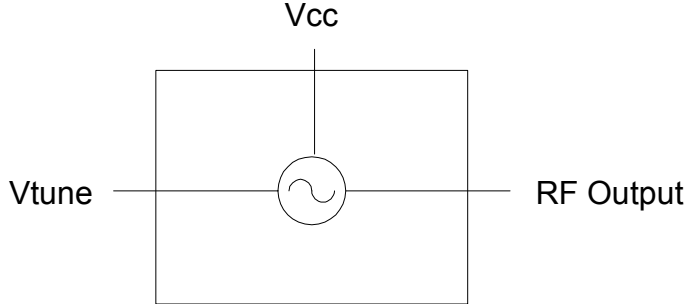


**Features**

- 4490MHz to 4510MHz VCO
- 5V Operation
- +1.5dBm Typical Output Power
- -98dBc/Hz at 10kHz
- -120dBc/Hz at 100kHz

**Applications**

- Instrumentation
- Aerospace
- Test Equipment
- Plug and Play



Functional Block Diagram

**Product Description**

RFMD's VCO-4500S/STC is a hybrid assembled voltage controlled oscillator integrated into a connectorized module. The VCO-4500 features an integrated resonator and tuning varactors. The part features excellent performance over temperature.

**Ordering Information**

VCO-4500S/STC High Reliability Military and Space 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 type="checkbox"/> InGaP HBT   | <input type="checkbox"/> SiGe HBT    | <input checked="" type="checkbox"/> Si BJT | <input type="checkbox"/> LDMOS     |

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## Absolute Maximum Ratings

Parameter	Rating	Unit
Supply Voltage ( $V_{CC}$ )	6.8	V
$V_{TUNE}$	0 to 8.0	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.

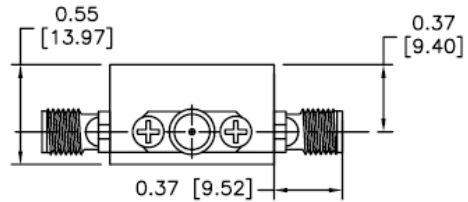
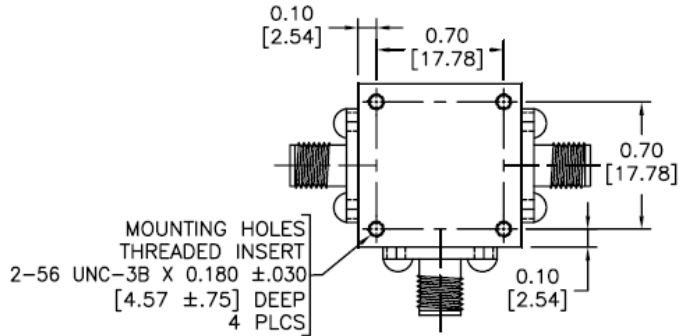
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Parameter	Specification			Unit	Condition
	Min.	Typ.	Max.		
<b>Frequency</b>					
Frequency Range	4490		4510	MHz	100% Production Tested
Tuning Voltage					
4490MHz	0	1.8		$V_{DC}$	100% Production Tested
4510MHz		3.3	5	$V_{DC}$	100% Production Tested
Tuning Sensitivity	10.5	14	17.5	MHz/V	100% Production Tested
Output Power	-1.0	1.5	4.0	dBm	100% Production Tested
Output Phase Noise					
10kHz		-98	-92	dBc/Hz	100% Production Tested
100kHz		-120	-116	dBc/Hz	100% Production Tested
Power Supply	4.75	5	5.25	V	100% Production Tested
Supply Current		18	21	mA	100% Production Tested
Harmonic Suppression					
2nd Harmonic		-25	-10	dBc	100% Production Tested
3rd Harmonic		-30	-10	dBc	100% Production Tested
Spurious (Non-Harmonic)			-80	dBc	
Frequency Pushing		0.25	2	MHz p-p	4.75V to 5.25V
Frequency Pulling		4	6	MHz p-p	12dB RL
Output Impedance		50		$\Omega$	
3dB Modulation Bandwidth	20000	30000		kHz	$Z_G = 50\Omega$
Tune Port Capacitance		22		pF	

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

**Pin Out and Package Drawing**



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

