



### Features and Benefits

Ultra-low noise at -165dBc / Hz @ 100 KHz  
 Less than ±200 ppb over -40°C to +70°C  
 Low 150 mA steady state current consumption  
 +12V supply

### Typical Applications

Microwave communication systems  
 Test and measurement systems  
 Instrument and clock reference  
 Radar systems

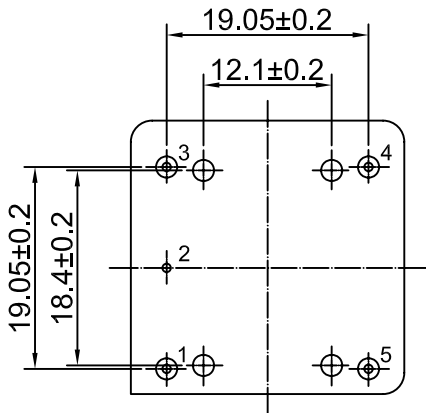
### Description

OCXO2525L-100MHz-F-V offers ultra-low noise and high frequency stability with low power consumption all in one simple package.

### Mechanical Drawing & Pin Connections

Drawing No: MD13022-2

Bottom View

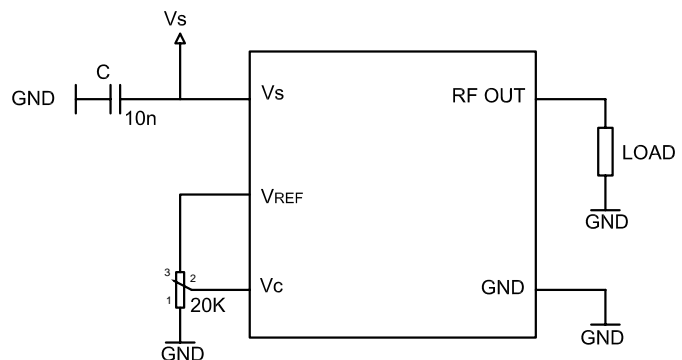
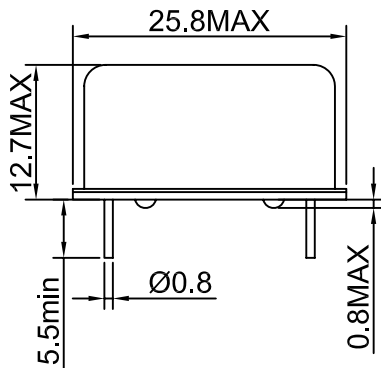


Pin Connections:

PIN #	Symbol	CONNECTION
1	RF OUT	RF Output
2	GND	Ground, case
3	Vc	Control Voltage(EFC)
4	VREF	Reference Voltage
5	Vs	Supply Voltage

Unit in mm  
 1mm = 0.0394 inches

Side View





## Specifications

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Frequency Range			80		125	MHz	
Standard Frequencies	F <sub>N</sub>		100.000 / 120.000			MHz	
Warm-up Time		$\Delta f_{\text{final}} / f_0 < \pm 0.1 \text{ ppm}$		3	5	min	
<b>RF Output</b>							
Output Waveform			Sine Wave				
Load	R <sub>L</sub>	$\pm 5\%$	50			$\Omega$	
Output Level			+7			dBm	Note 2
Harmonics					-30	dBc	
Spurious					-90	dBc	
G-Sensitivity		Per axis			1.0	ppb/g	
<b>Power Supply</b>							
Reference Voltage VREF Output				10.0		V	Note 3
Supply Voltage	V <sub>S</sub>		11.4	12.0	12.6	V	Note 3
Current Consumption		Steady state @ +25°C			150	mA	Note 4
		During warm-up			350		
<b>Frequency Adjustment Range</b>							
Electronic Frequency Control (EFC)			$\pm 1$	$\pm 2$		ppm	
EFC Voltage	V <sub>C</sub>		0	VREF/2	VREF	V	
EFC Slope		$\Delta f / \Delta V_C$	Positive				
EFC Input Impedance			100			k $\Omega$	
<b>Frequency Stability</b>							
Initial Tolerance @ +25°C		V <sub>C</sub> @ VREF / 2			$\pm 300$	ppb	
Vs. Operating Temperature Range		Over -40°C to +70°C			< $\pm 200$	ppb	
Vs Supply Voltage Variation (pushing)		V <sub>S</sub> $\pm 5\%$			$\pm 10$	ppb	
Vs Load Change (pulling)		R <sub>L</sub> $\pm 5\%$			$\pm 5$	ppb	
Long Term Aging per day		After 30 days of continuous operation		$\pm 1$	$\pm 2$	ppb	
Long Term Aging first year				$\pm 100$	$\pm 200$		
Phase Noise		@ 100 Hz			<-120	dBc/Hz	
		@ 1 KHz			<-150		
		@ 10 KHz			<-160		
		@ 100 KHz			<-165		
<b>Environmental Conditions</b>							
Operating temperature range		-40°C to +70°C					
Storage temperature range		-55°C to +125°C					
Enclosure (see drawing) (LxWxH)		25.8 x 25.8 x 12.7 mm max. IEC 60679-3 CO43					
Weight		20 g max.					

Note 1: Terminology and test conditions are according to IEC60679-1 and MIL-PRF-55310, unless otherwise stated

Note 2: Other output level on request

Note 3: Other supply and reference voltage available on request

Note 4: Maybe higher for wide operating temperature range

## Absolute Maximum Ratings

Parameter	Sym	Min.	Max.	Unit	Condition
Supply Voltage	V <sub>S</sub>	-0.5	V <sub>S</sub> + 10%	V	V <sub>S</sub> to GND
Control Voltage	V <sub>C</sub>	-0.5	15	V	V <sub>C</sub> to GND

## Handling and Testing

Parameter	Procedure	Condition
Electrostatic Discharge (ESD)		
THD devices	IEC60749-26	HBM 2000V
SMD devices	IEC60749-27	MM 200V
Washable	Yes	
RoHS-Compliant	Yes	



### Environment Conditions

Test	IEC 60068 Part...	IEC 60679-1 Clause	MIL-STD-202G Method	MIL-STD-810F Method	MIL-PRF-55310D Clause	Test Conditions (IEC)
Sealing Tests (if applicable)	2-17	5.6.2	112E		3.6.1.2	Gross leak; Test Qc, Fine leak; Test Qk
Solderability Resistance to soldering heat	2-20 2-58	5.6.3	208H 210F		3.6.52 3.6.48	Test Ta method 1 Test Td <sub>1</sub> method 2 Test Td <sub>2</sub> method 2
Shock	2-27	5.6.8	213B	516.4	3.6.40	Test Ea, 3 x per axis, 100 g. 6ms half-sine pulse
Vibration sinusoidal	2-6	5.6.7.1	201A 204D	516.4-4	3.6.38.1 3.6.38.2	Test Fc, 30 min per axis, 1 oct/min 10 Hz – 55 Hz 0, 75mm, 55 Hz – 2 kHz, 10 g
Vibration random	2-64	5.6.7.3	214A	514.5	3.6.38.3 3.6.38.4	Test Fdb
Endurance tests - Aging - Extended aging		5.7.1 5.7.2	108A		4.8.35	30 days @ +85°C, OCXO @ +25°C 1000 h, 2000 h, 8000 h @ +85°C