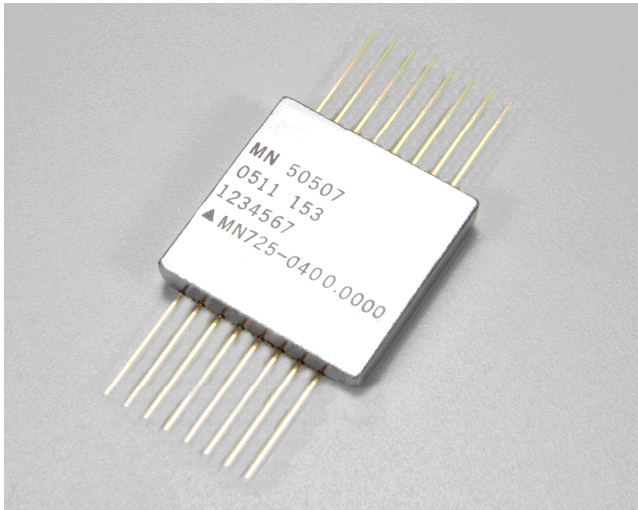


MN725-0400.0000

Voltage Controlled SAW Oscillator



DESCRIPTION

The MN725-0400.0000 Voltage Controlled SAW Oscillator (VCISO) is a member of Spectrum Microwave MN725 series of high performance low noise SAW oscillators designed for the military applications.

The hermetic kovar package and rugged hybrid construction provide low vibration sensitivity and performance over a wide operating temperature range.

The highly repeatable and linear tuning range makes the MN725 family of VCISOs ideal for phase locked applications.

The design is based upon a fundamental VCISO in the 375 MHz to 750 MHz frequency range.

FEATURES

- Low phase Noise
 - -109 dBc/Hz at 1 kHz
- Low vibrations sensitivity
 - 2×10^{-9} per g
- Hermetic Kovar package
 - 1.0" x 1.0" x .2" SMT
- -55°C to 85°C operating range
- Rugged design for military applications

APPLICATIONS

- Phase Lock Loops
- Local Oscillators
- Low Noise Clocks
- Clock recovery

ABSOLUTE MAXIMUM RATINGS

Operating Temperature: -55°C to 100°C
Storage Temperature: -55°C to 125°C
Power Supply Voltage: 13V
Tuning Voltage: -2V to +6 V



MN725-0400.0000

Product Data Sheet

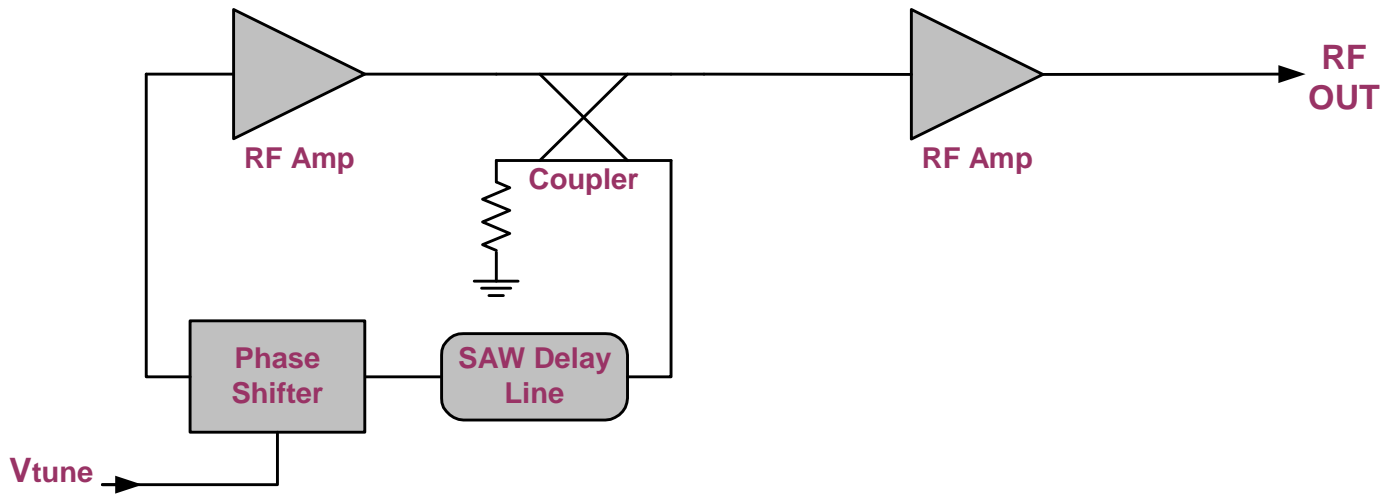
Revision 022210

SPECIFICATIONS

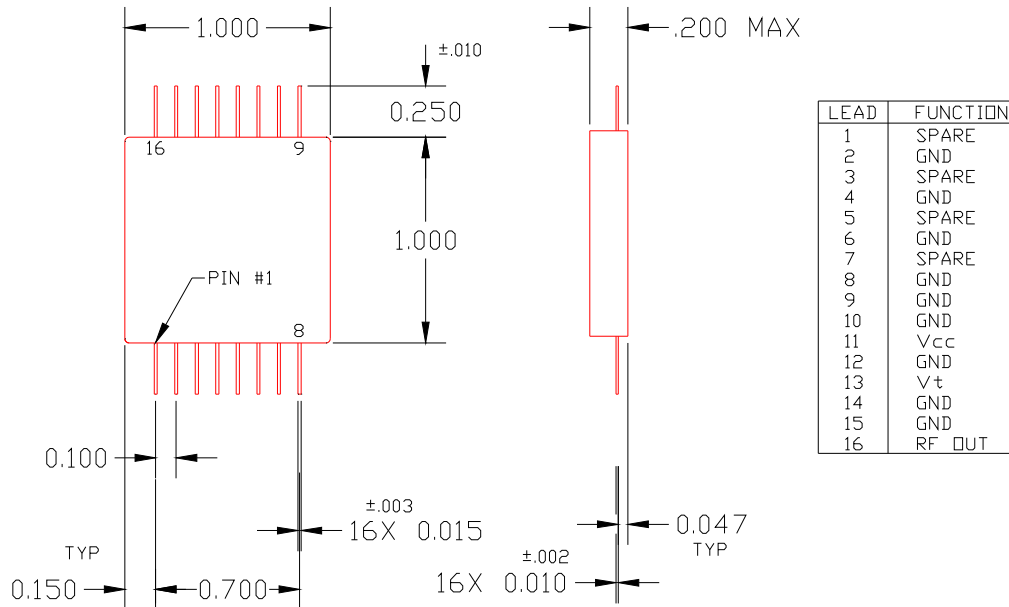
Specifications apply at $V_{cc} = 8.0V$ and $T_{case} = 25^{\circ}C$ unless other wise specified

Parameter	Minimum	Typical	Maximum	Units	Notes
Center Frequency Range		400		MHz	Other frequencies available (375 MHz to 750 MHz)
Tuning Range		700		ppm	$V_{tune} = 0.0V$ to $5.0V$
Kvco		140		ppm/V	
Tuning Linearity	-5		5	%	Deviation from best linear fit
Output Power	8.0	10.0	12.0	dBm	$-55^{\circ}C$ to $85^{\circ}C$
Harmonic Spurious			-30	dBc	
Non-harmonic Spurious			-60	dBc	
SSB Phase Noise					
	$\Delta f = 1$ kHz	-109		dBc/Hz	
	$\Delta f = 10$ kHz	-132		dBc/Hz	
	$\Delta f = 100$ kHz	-152		dBc/Hz	
	$\Delta f = 1$ MHz	-160		dBc/Hz	
	$\Delta f = 10$ MHz	-160		dBc/Hz	
Vcc	7.6	8	8.4	Volts	Consult Factory for other available Vcc
Icc		90	120	mA	
Operating Temperature	-55		85	$^{\circ}C$	Case temperature

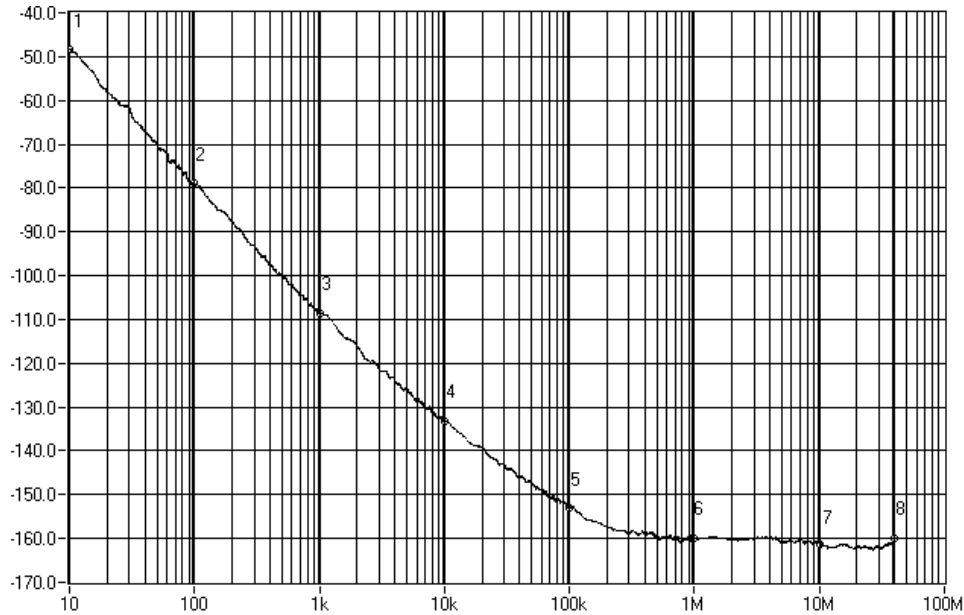
BLOCK DIAGRAM



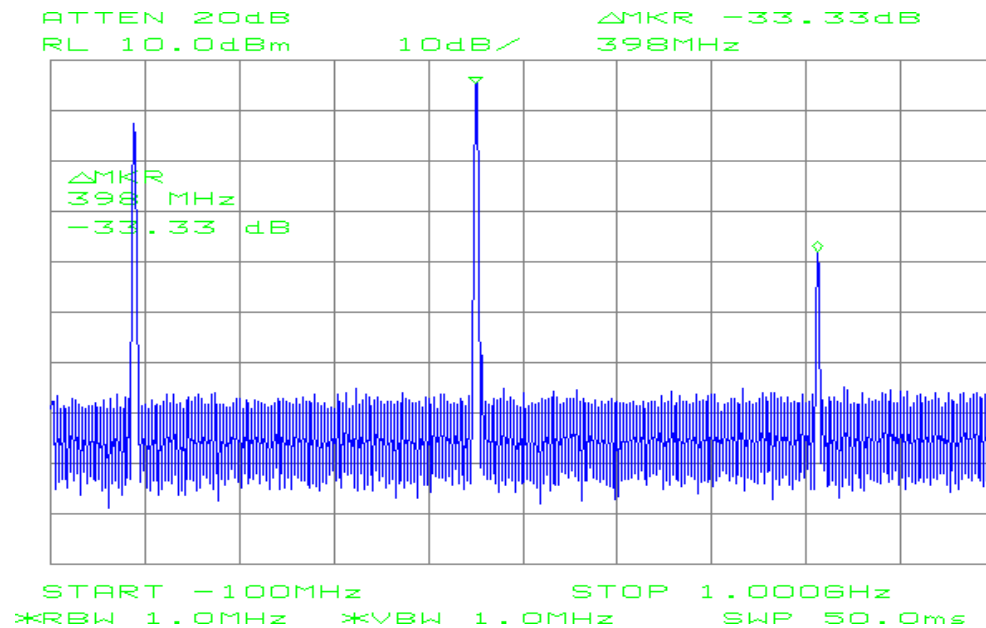
OUTLINE DRAWING



PHASE NOISE AND SPURIOUS DATA



Typical MN725-0400.0000 SSB Phase Noise



MN725-0400.0000 Output Spectrum from 1 MHz to 1.0 GHz