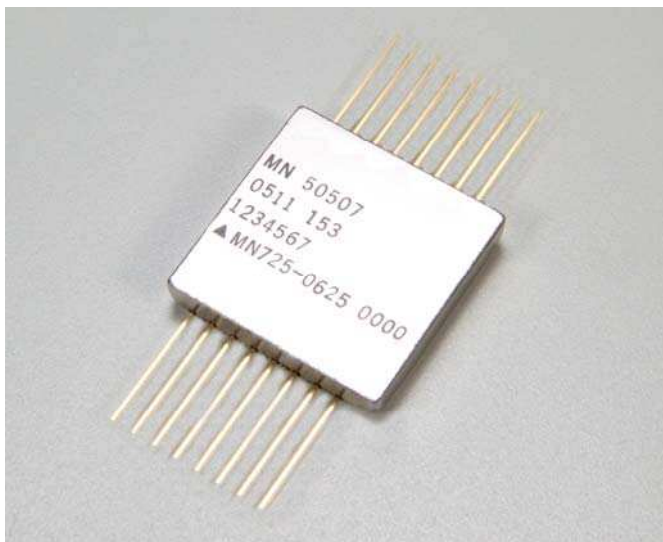


MN725-0625.0000

Voltage Controlled SAW Oscillator



DESCRIPTION

The MN725-0625.0000 Voltage Controlled SAW Oscillator (VCSO) is a member of Spectrum Microwave's 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 VCSOs ideal for phase locked applications.

The design is based upon a fundamental VCSO 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 100°C operating range
- Rugged design for military applications

APPLICATIONS

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

ABSOLUTE MAX RATINGS

Operating Temperature: -55°C to 100°C

Storage Temperature: -55°C to 125°C

Power Supply Voltage: 13 V

Tuning Voltage: -2 to +6 V



MN725-0625.0000

Product Data Sheet

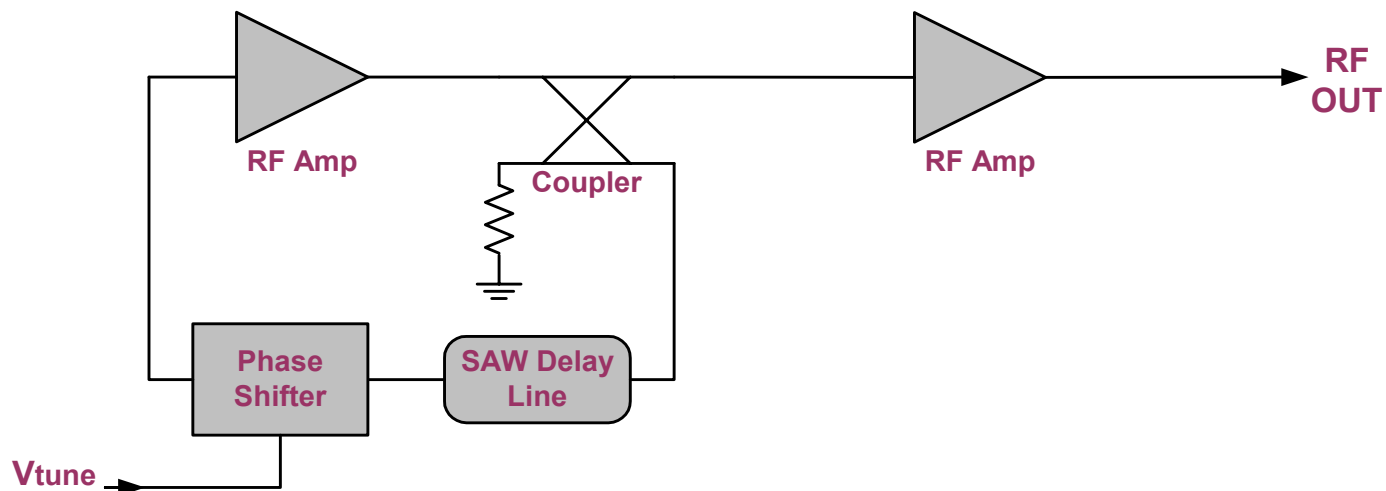
Revision 032510

SPECIFICATIONS

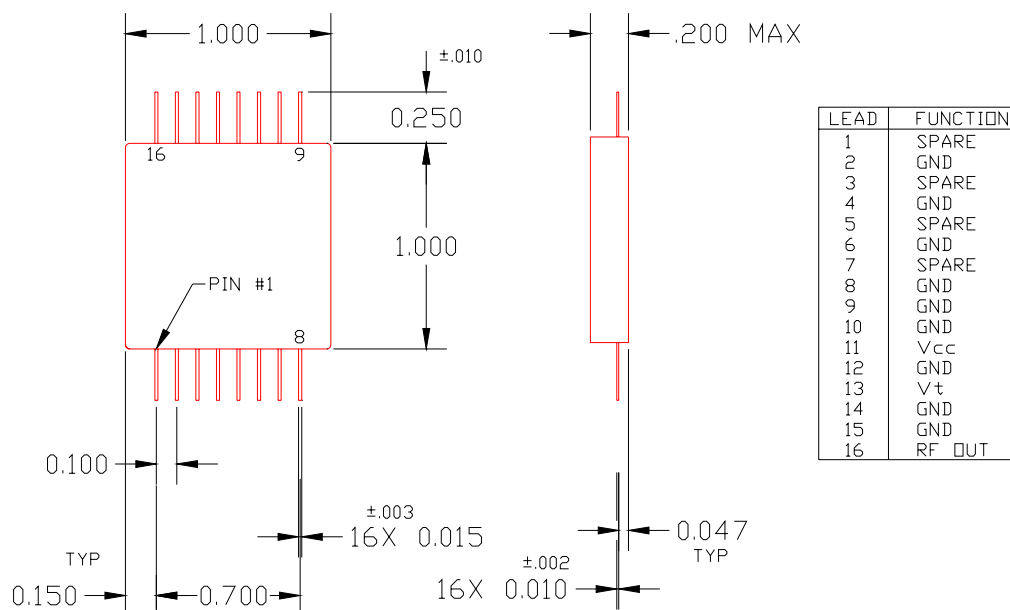
Specifications apply at $V_{cc} = 8.0\text{ V}$ and $T_{case} = 25^{\circ}\text{C}$ unless otherwise specified.

Parameter	Minimum	Typical	Maximum	Units	Notes
Center Frequency Range		625		MHz	Other frequencies available (375 MHz to 750 MHz)
Tuning Range		700		ppm	$V_{tune} = 0.0\text{V to } 5.0\text{V}$
K_{vco}		140		ppm/V	
Tuning Linearity	-5		5	%	Deviation from best linear fit
Output Power	8	10	12	dBm	$-55^{\circ}\text{C to } 100^{\circ}\text{C}$
Harmonic Spurious			-30	dBc	
Non-harmonic Spurious			-60	dBc	
SSB Phase Noise					
$\Delta f = 1\text{ kHz}$		-109		dBc/Hz	
$\Delta f = 10\text{ kHz}$		-132		dBc/Hz	
$\Delta f = 100\text{ kHz}$		-152		dBc/Hz	
$\Delta f = 1\text{ MHz}$		-160		dBc/Hz	
$\Delta f = 10\text{ MHz}$		-160		dBc/Hz	
V_{cc}	7.6	8	8.4	Volts	Consult Factory for other available V_{cc}
I_{cc}		90	120	mA	
Operating Temperature	-55		100	$^{\circ}\text{C}$	Case temperature

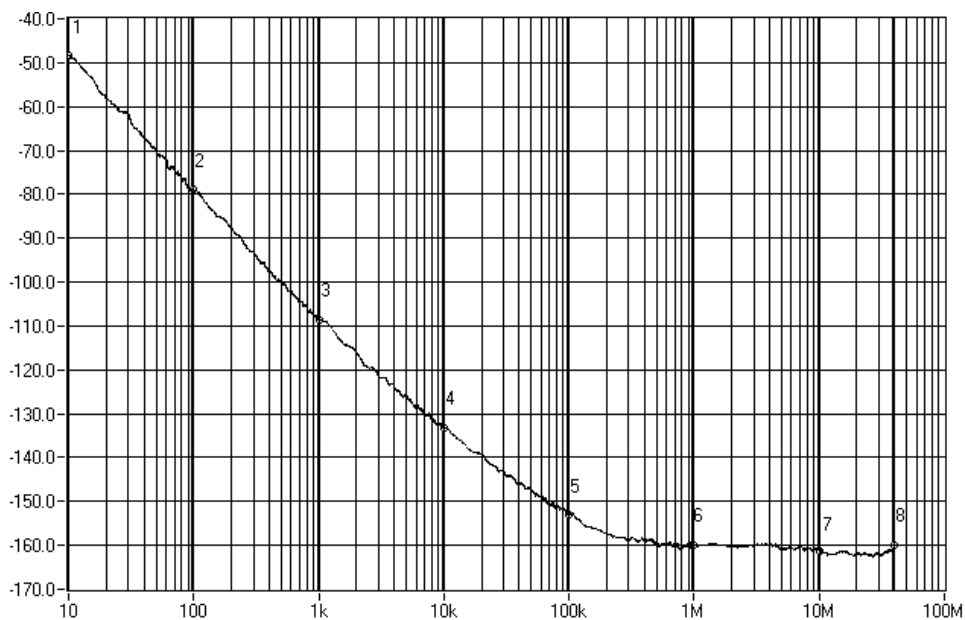
BLOCK DIAGRAM



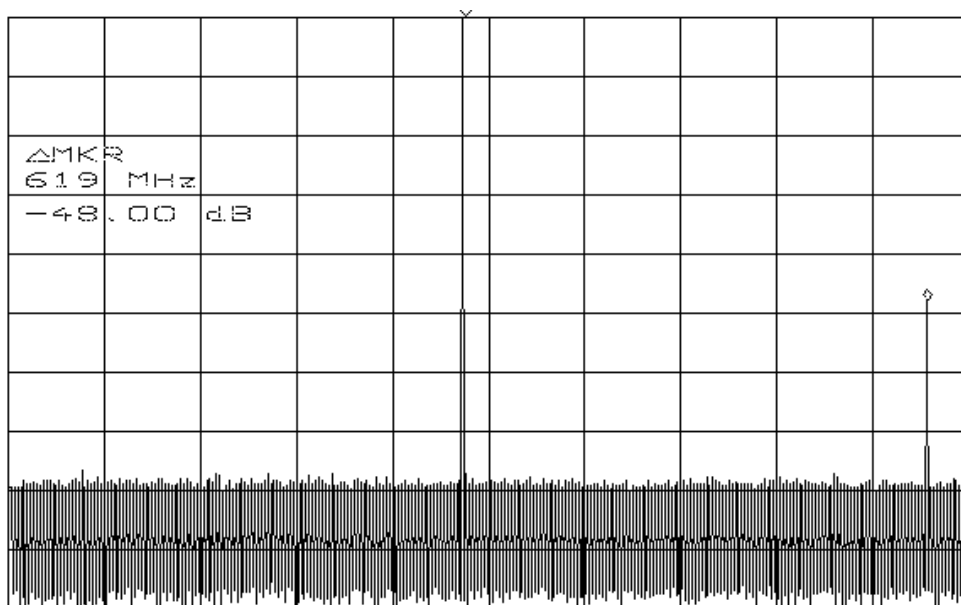
OUTLINE DRAWING



PHASE NOISE and SPURIOUS DATA



Typical MN725-0625.0000 SSB Phase Noise



MN725-0625.0000 Output Spectrum from 1 MHz to 1.3 GHz