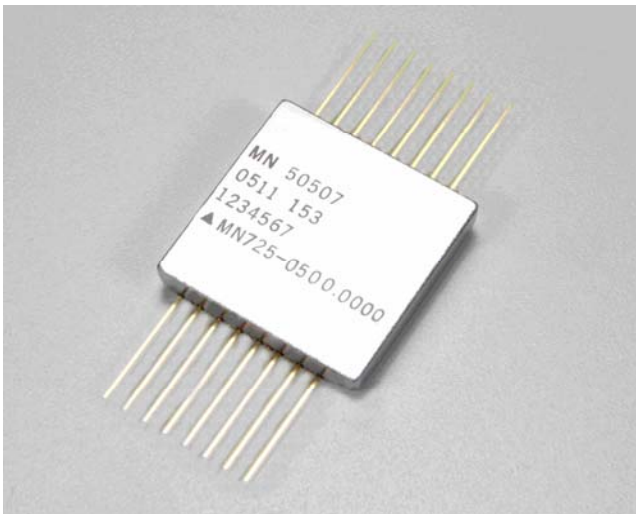


## **MN725-0500.0000**

### **Voltage Controlled SAW Oscillator**



#### **DESCRIPTION**

The MN725-0500.0000 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
  - $2 \times 10^{-9}$  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: 13 V  
Tuning Voltage: -2V to +6 V



**MN725-0500.0000**

**Product Data Sheet**

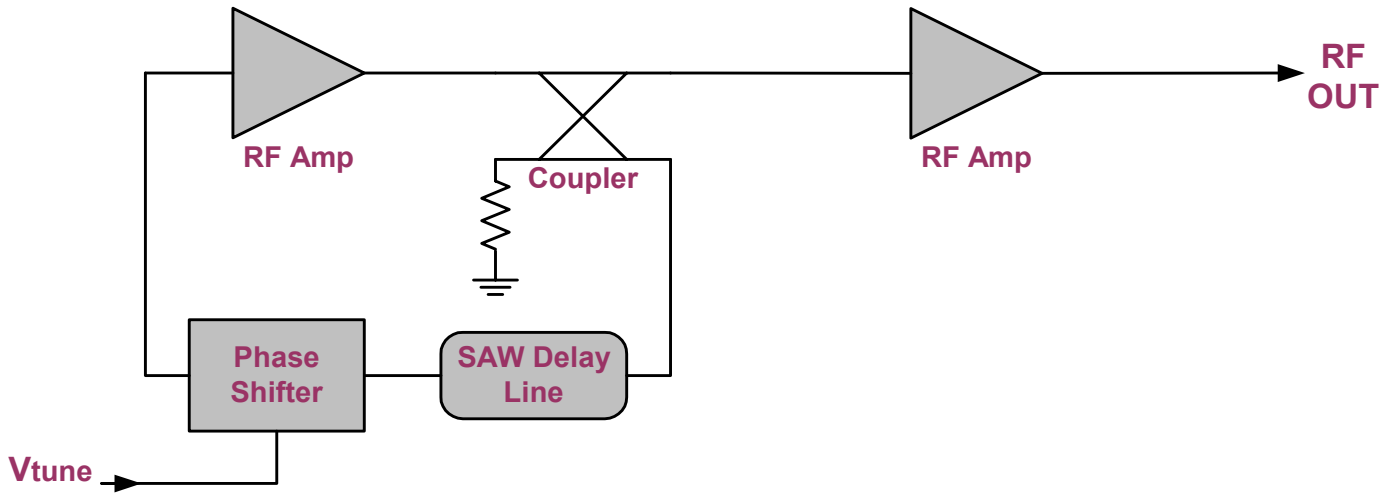
**Revision 032510**

**SPECIFICATIONS**

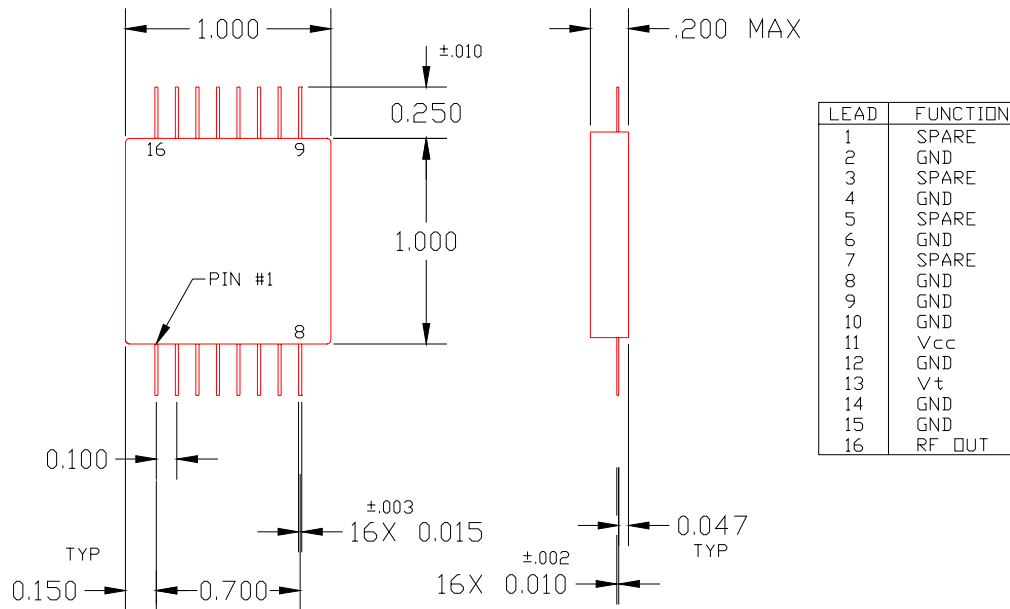
Specifications apply at Vcc = 8.0 V and Tcase = 25°C unless otherwise specified.

Parameter	Minimum	Typical	Maximum	Units	Notes
Center Frequency Range		500		MHz	Other frequencies available (375 MHz to 750 MHz)
Tuning Range		700		ppm	Vtune = 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°C to 85°C
Harmonic Spurious			-30	dBc	
Non-harmonic Spurious			-60	dBc	
SSB Phase Noise					
Δf = 1 kHz		-109		dBc/Hz	
Δf = 10 kHz		-132		dBc/Hz	
Δf = 100 kHz		-152		dBc/Hz	
Δf = 1 MHz		-160		dBc/Hz	
Δf = 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	°C	Case temperature

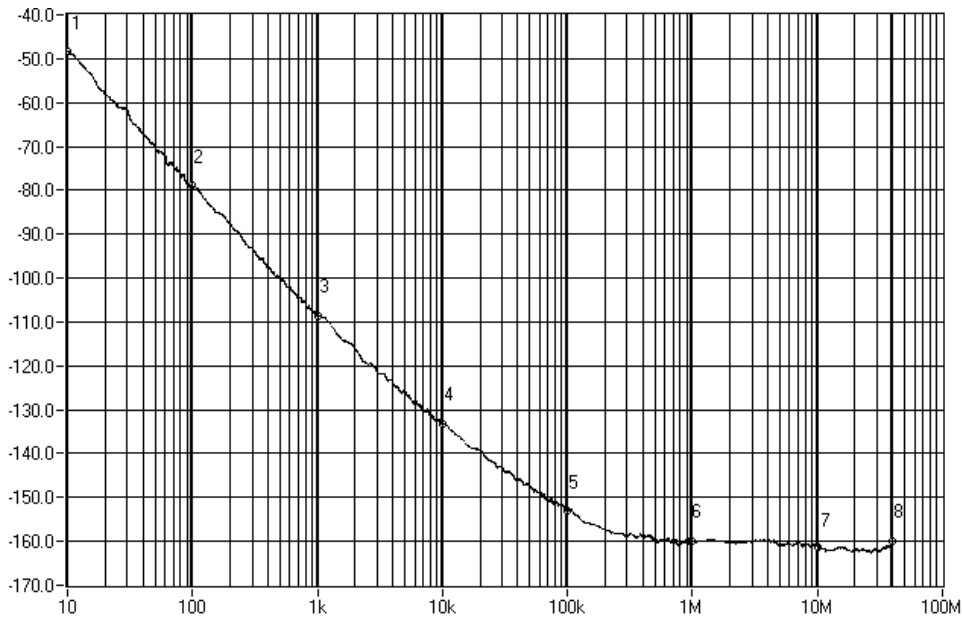
**BLOCK DIAGRAM**



**OUTLINE DRAWING**



**PHASE NOISE**



**Typical MN725-0500.0000 SSB Phase Noise**