



M624

622MHz Voltage Controlled SAW Oscillator



DESCRIPTION

The Surface Mount Technology (SMT) Voltage Controlled SAW Oscillator (VCSO) is specifically designed for high speed SONET/SDH OC-192 and OC-768 applications.

This SMT VCSO is SAW-based and offers excellent phase noise performance and spectral purity, while requiring a low supply voltage (+3.3Vdc).

An extremely linear tuning range makes the SMT VCSO especially suited for Phase-Locked Loop (PLL) applications, which are extensively used in timing circuits and clock and data recovery in fiber-linked data systems.

The SMT VCSO's small size and minimal power requirements make it ideal for the miniaturization applications that are emerging, without sacrificing performance.

FEATURES

- **Low Phase Noise, $\approx -109\text{dBc/Hz}$ @ 1kHz Typical**
- **Superior SAW Jitter Performance and Aging**
- **Excellent Frequency Stability**
- **Excellent Tuning Linearity**
- **Small 0.6 x 0.8 SMT Package**
- **Low Power Consumption (-0.4W)**
- **3.3V Operation**

APPLICATIONS

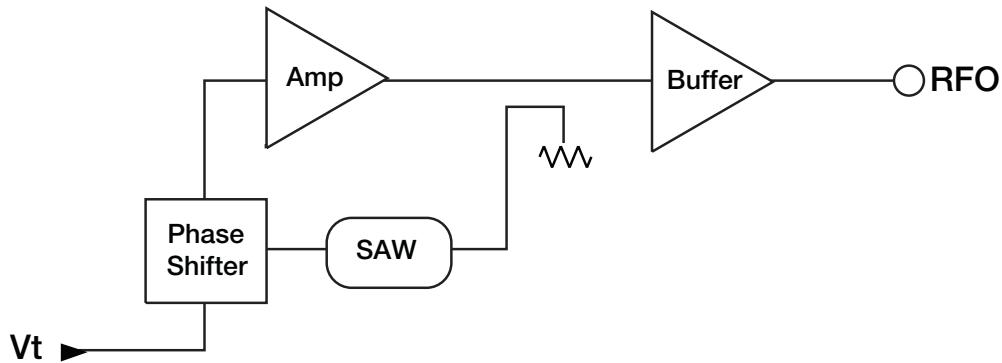
- **Telecommunications Networks**
- **Clock and Data Recovery**
- **Phase Locked Oscillators (PLO)**
- **Low Noise Frequency Sources**
- **Hand-Held Communication Oscillators**

ABSOLUTE MAX RATINGS

Operating Temperature (Case)	0°C to 70°C
Storage Temperature (Ambient)	-40°C to +125°C
Power Supply Voltage	+4Vdc
Control Voltage	0 to +4Vdc

**ELECTRICAL SPECIFICATIONS**Specifications @ $V_{CC} = +3.3$ Volts and $T_a = +25^\circ C$ unless otherwise specified.

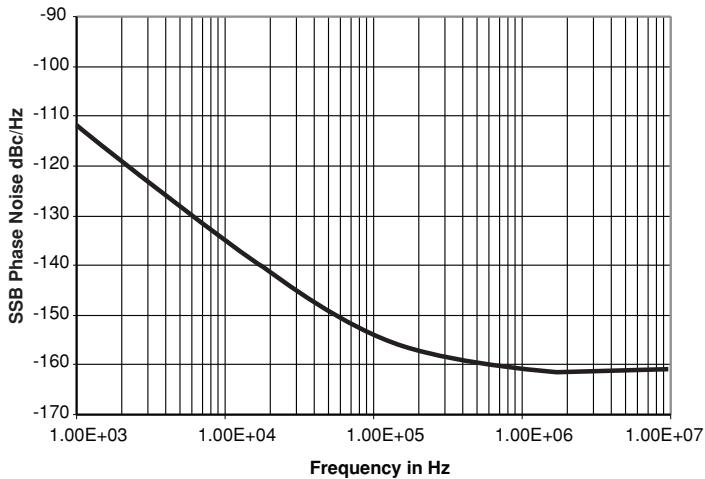
Parameter	Minimum	Typical	Maximum	Units
Center Frequency		622.08		MHz
Control Voltage @ F_C		1.5		Volts
Tuning Voltage	0		V_{CC}	Volts
Tuning Range		400		kHz
Kvco Gain		135		kHz/V
Output Power		3		dBm
Harmonic Spurious			-30	dBc
Non-harmonic Spurious			-60	dBc
SSB Phase Noise 1kHz		-109		dBc/Hz
10kHz		-132		dBc/Hz
100kHz		-154		dBc/Hz
1MHz		-161		dBc/Hz
10MHz		-161		dBc/Hz
Power Supply Voltage	3.135	3.3	3.465	Vdc
Power Supply Current		65	90	mA
Operating Temperature Range	0		70	°C

BLOCK DIAGRAM

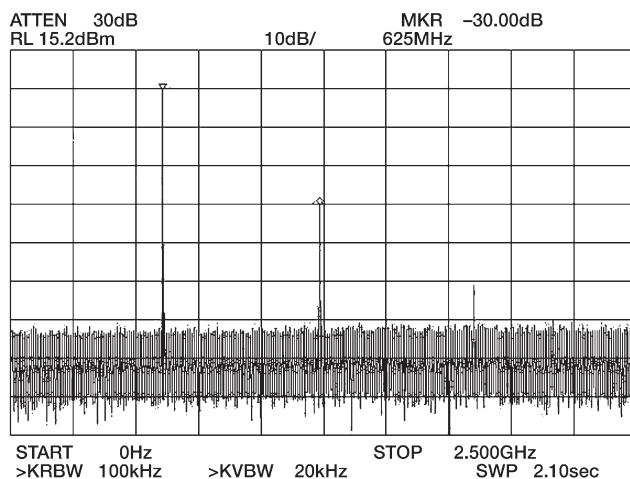


TYPICAL DATA

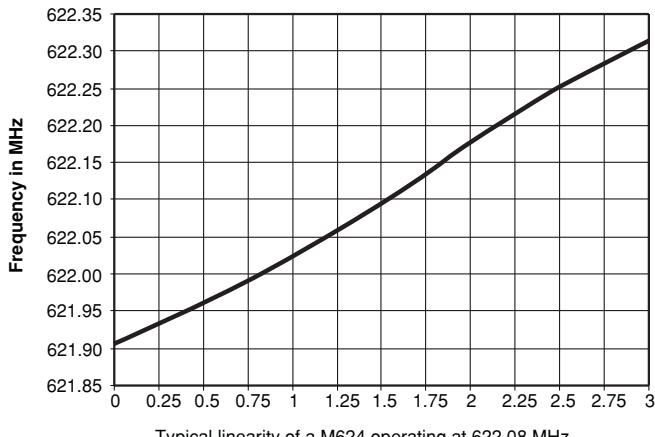
Phase Noise



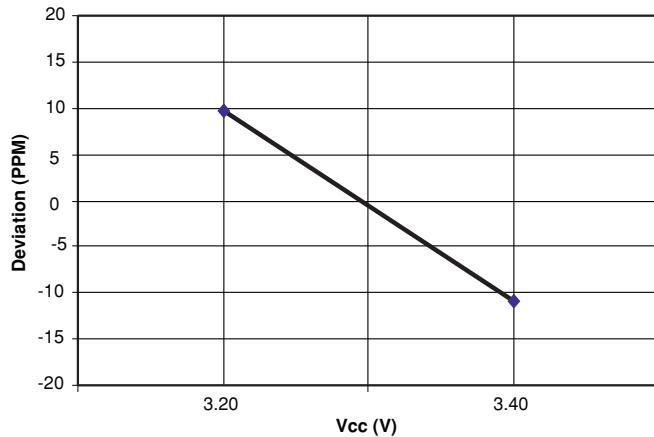
Harmonics



Typical Linearity

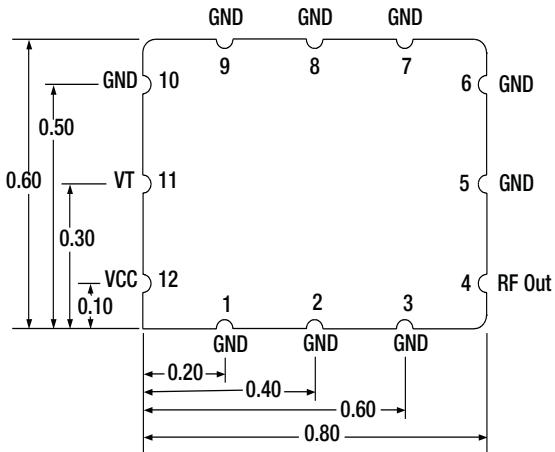


Typical Frequency Pushing





PIN CONFIGURATION



Dimensions are in inches.

PIN#	SYMBOL	FUNCTION
1, 2, 3, 5, 6, 7, 8, 9, 10	GND	Case and Electrical Ground
4	RFOUT	VCSO Output
11	Vt	VCSO Tuning Voltage
12	VCC	Power Supply Voltage (3.3V \pm 5%)

ORDERING INFORMATION

Part Number **M624 - 622.0800**
Series
Frequency in MHz

ICS reserves the right to make changes in the device data identified in this publication without further notice. ICS advises its customers to obtain the latest version of all device data to verify that any information being relied upon by the customer is current and accurate.

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