

## Low Power - Low Frequency SMD Oscillator

- Low current consumption, low frequency from 30kHz
- Low profile, miniature SMD package
- Full military testing available
- Testing to MIL-PRF-55310 available

#### DESCRIPTION

LSM series oscillators are precision surface mount oscillators with a frequency range from 30kHz to 200kHz. The part comprises of a hermetically sealed crystal with a hybrid circuit sealed in a ceramic package with a Kovar lid. Full MIL testing is available.

### **SPECIFICATION**

Frequency Range****:		30kHz to 200kHz (32.768kHz)			
Supply Voltage*:		3.3 or 5.0 Volts ±10%			
Calibration Tole	erance**				
C	ode A:	±0.001% (±10ppm)			
C	ode B:	±0.0025%			
Code C:		±0.01%			
Frequency Stability***					
0	° to +50°C:	±0.0025% typical (±25ppm) ±0.004% maximum (±40ppm)			
-20	° to +40°C:	±0.007% typical (±70ppm) ±0.01% maximum (±100ppm			
Voltage Coefficient					
C C		±1ppm/V typical			
		±3ppm/V maximum			
Ageing:		±1ppm/year typical			
		±3ppm/year maximum			
Shock:		1000g, 1ms, ½ sine, ±3ppm max.			
Vibration:		10g rms, 10-2000Hz, ±3ppm max.			
Frequency Change					
vs. Output Load	l Change:	±1ppm maximum			
Operating Temperature:		-10° to +70°C Commercial			
		-40° to +85°C Industrial			
		-55° to +125°C Military			
Output Voltage	· · · · · · · · · · · · · · · · · · ·				
	HIGH:	4.8V minimum, 4.95V typical			
	LOW:	0.2V maximum, 0.05V typical			
Rise/Fall Times:		12ns typical			
Symmetry:		40/60% maximum, 45/55% typical			
Supply Current					
	5.0V supply:	15 μA max., 8.3 μA typical			
	3.3V supply:	10 μA max., 5.5 μA typical			
Packaging:		Tray pack (standard)			
		16mm tape, 17.8cm or 33cm reels			

#### ENABLE/DISABLE, POWER DOWN, NOT CONNECTED

Option	Specifying Code	Pad 1*	Pad 3
Power Down	Р	LOW HIGH	High Z Frequency output
Enable/Disable	т	LOW HIGH	High Z Frequency output
Not Connected	Blank	NC	Frequency output

\* Normally HIGH (internal pull-up resistor)

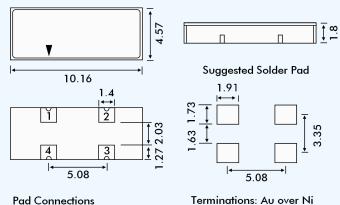
### **ENABLE/DISABLE vs. POWER DOWN**

- P Power Down: When Pad 1 is LOW the oscillator stops running T - Enable/Disable: When Pad 1 is LOW the internal oscillator continues to run but the output (Pad 3) is in a high impedance (Z) state. Power Down: Disabled current consumption low,
- recovery delayed. Enable/Disable: Disabled current consumption lower than normal, Recovery immediate.



# COMPLIANT 2002 / 95 /EC

#### **OUTLINE & DIMENSIONS**

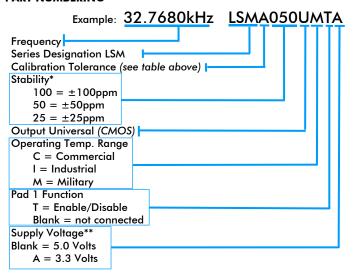


- 1. Not connected or enable/disable
- 2. Ground
- 3. Output
- 4. Supply Voltage

Notes:

Contact factory for lower supply voltages \*\* Tighter tolerances avialable \*\*\* Does not include calibration tolerance. Positive variations are small compared to negative variations. \*\*\*\* Contact factory for frequencies other than 32.7680kHz

## PART NUMBERING



For other stability requirements enter figure required.

For other supply voltage enter required voltage.