

**T7250, T7254, T7256, T7258, T7001 thru T7013,
T9250, T9254, T9256, T9258, T9301 thru T9313**
Extended Temperature/COTS
5X7 mm Surface Mount



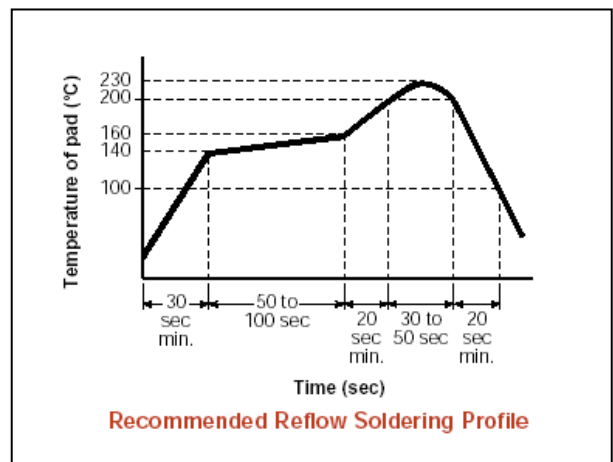
Owing to their small size, light weight, and rugged characteristics, these 3.3V HCMOS extended temperature/COTS oscillators fulfill tasks not previously feasible. They are used in applications that take advantage of their extended temperature range and high performance. Twenty six different models (with and without tristate) cover -55°C to +200°C operation and provide frequency selection from 20KHz to 100MHz. They combine excellent long-term reliability, loading characteristics, and superior startup performance.

Features

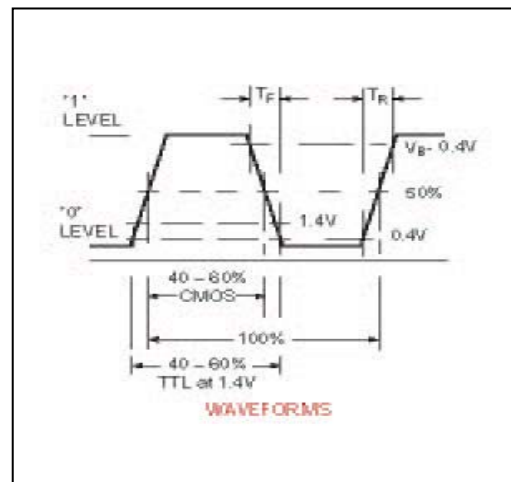
- Tiny 5X7 SMD form factor
- Hermetically sealed for rugged environmental conditions
- Extremely wide operating temperature range accommodates harsh environments
- All crystals are processed in-house with tight angle control to assure best frequency-temperature characteristics
- All units are vacuum baked before sealing at 175°C for 16 hours to eliminate moisture traces and pre-age units for superior stability
- Tristate feature optional
- Equivalent 5V parts are available in series T1254

Applications

Any electronic circuit requiring 3.3V HCMOS clocking that is exposed to very high or very low temperatures such as oil drilling or weather observation equipment



Non-Tristate Model	Tristate Model	Frequency Stability	Temperature
T7250	T9250	+/-75ppm	-40 to + 85°C
T7254	T9254	+/-50ppm	0 to + 175°C
T7256	T9256	+/-75ppm	-55 to + 85°C
T7258	T9258	+/-100ppm	-40 to + 85°C
T7001	T9301	+/-500ppm	-55 to + 200°C
T7002	T9302	+/-500ppm	0 to 200°C
T7003	T9303	+/-250ppm	-55 to + 200°C
T7004	T9304	+/-250ppm	0 to 200°C
T7005	T9305	+/-250ppm	-55 to 175°C
T7006	T9306	+/-250ppm	0 to 175°C
T7007	T9307	+/-150ppm	-55 to 175°C
T7008	T9308	+/-150ppm	0 to 175°C
T7009	T9309	+/-100ppm	-55 to 125°C
T7010	T9310	+/-50ppm	-55 to +85°C
T7011	T9311	+/-25ppm	-55 to + 85°C
T7012	T9312	+/-75ppm	-55 to +125°C
T7013	T9313	+/-50ppm	-55 to +125°C



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ELECTRICAL SPECIFICATIONS

Frequency 20 KHz to 100MHz
Frequency Stability Includes calibration at 25°C, operating temperature, change of input voltage, change of load, shock and vibration.

	MIN	TYP	MAX	UNITS
Input Voltage, V_{DD}	3.0	3.3	3.6	volts
Input Current			4.0	mA

Output
 All units, full range
 Loads 3 TLL loads, or 10LSTTL loads, or 15 pf CMOS

Rise and Fall Time
 TTL and LSTTL from 0.4 to 2.4V 8 ns
 CMOS, 15pf, from 0.4 to (V_{DD} -0.4) V 8 ns
 CMOS, 30pf, from 0.4 to (V_{DD} -0.4) V 10 ns

Symmetry
 TTL and LSTTL @ 1.4V 40/60 percent
 CMOS @50% V_{DD} 40/60 percent

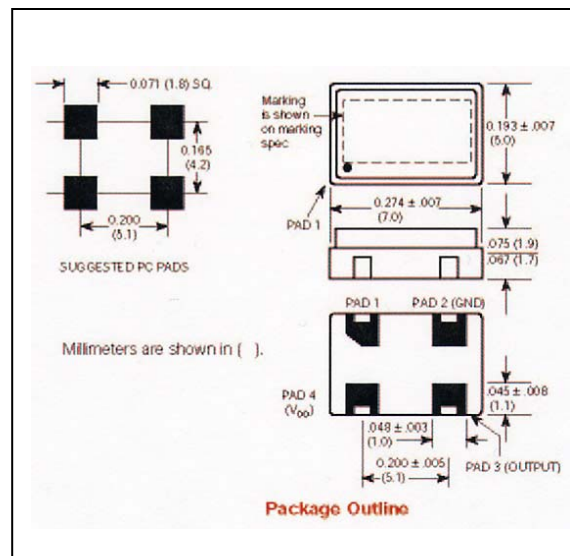
Aging
 First year 3 ppm
 After first year 1 ppm/yr

ENVIRONMENTAL SPECIFICATIONS

Shock-1000 Gs, 0.35 ms, ½ sine wave, 3 shocks in each plane
Vibration-10-2000 Hz of .06" d.a. or 20Gs, whichever is less
Humidity-Resistant to 85° R.H. at 85°C

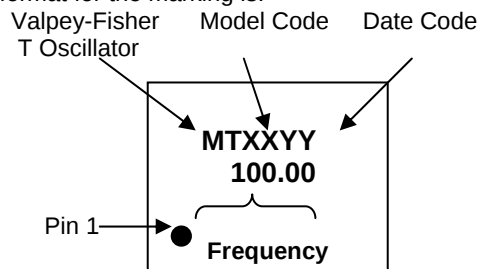
MECHANICAL SPECIFICATIONS

Gross Leak-Each unit checked in 125°C fluorocarbon
Fine Leak-Mass spectrometer leak rate less than 2×10^{-8} atm, cc/sec of helium
Case-Hermetically sealed ceramic package
Pads-60 microinch of gold over nickel
Marking-Epoxy ink or laser inscribed
Resistance to Solvents-MIL STD 202, Method 215



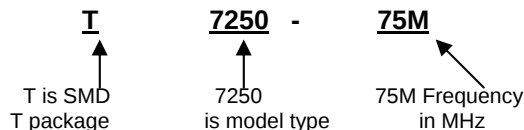
MARKING SPECIFICATION

The format for the marking is:



HOW TO ORDER

For Part Number, put package type before model number, and add frequency in MHz, for example:



Connections

Pad	Non-Tristate Models	Tristate Models
1.	Not Used	Floating or "1": Oscillator runs Ground or "0": Disable or Tristate
2.	Ground and Case	Ground and Case
3.	Output	Output
4.	+3.3 V, V_{DD}	+3.3 V, V_{DD}

Rev. 0706

