

Features

- 20kHz to 100MHz frequency range
- 5x7 SMD form factor
- Hermetically sealed for rugged environmental conditions
- Extremely wide operating temperature range accommodates harsh environments
- Crystals are processed with tight angle control to assure best frequency-temperature characteristics
- Units are vacuum baked before sealing at 145°C for 16 hours to eliminate moisture traces and pre-age units for superior stability
- Tristate feature optional



RoHS Status



Applications

- Applications that require an HCMOS clock and might be exposed to extremely harsh environmental conditions.
- Military/Avionics
- Engine Control
- Down-hole Drilling Equipment
- Industrial Process Control
- Geophysical Services

Description

The **Model 680** series is a set of small sized, light weight, and rugged HCMOS extended temperature/COTS crystal clock oscillators with 5.0, 3.3, 2.5, or 1.8 supply voltage for operations under stringent environments. They are used in applications that take advantage of their extended temperature range and tight temperature stability. They combine excellent long-term reliability, loading characteristics, and superior start-up performance.

Electrical Specifications

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Frequency Range	F	1.8V 2.5V 3.3V, 5.0V	4 1 0.02		50	MHz	Low jitter
		3.3V, 5.0V	>50		100		
Frequency Stability	$\Delta F/F$	Overall condition including calibration, temperature voltage and load variation	± 35		± 125	ppm	See "How to Order"
Operating Temperature	T		-55		+200	°C	See "How to Order"
Aging		First Year After First Year		3 1		ppm ppm/yr	+80°C
Supply Voltage	V _{CC}		1.71 2.375 3.135 4.5	1.8 2.5 3.3 5.0	1.89 2.625 3.465 5.5	V	See "How to Order"
Output		All units, full range 15pF CMOS					

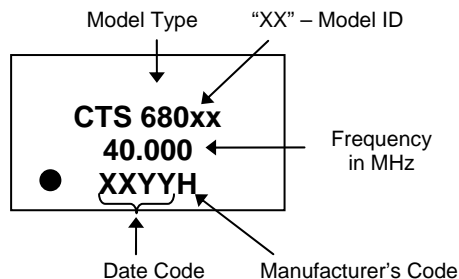
Environmental and Mechanical Conditions

Parameter	Condition
Shock	1000 Gs, 0.35 ms, ½ sine wave, 3 shocks in each plane
Vibration	10-2000 Hz of 0.06" d.a. or 20 Gs, whichever is less
Humidity	Resistant to 85° R.H. at 85°C
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	Ceramic with glass hermetic seal
Pads	40 micro inch of gold over nickel
Marking	Epoxy ink or laser engraved
Resistance to Solvents	MIL STD 202, Method 215

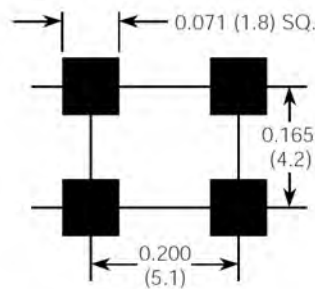
Pin Assignments

Pin	Non-Tristate Models	Tristate Models
1	NOT USED	Floating or 1 : Oscillator runs Ground or 0 : Disable or Tristate
2	Ground and Case	
3	Output	
4	V _{DD}	

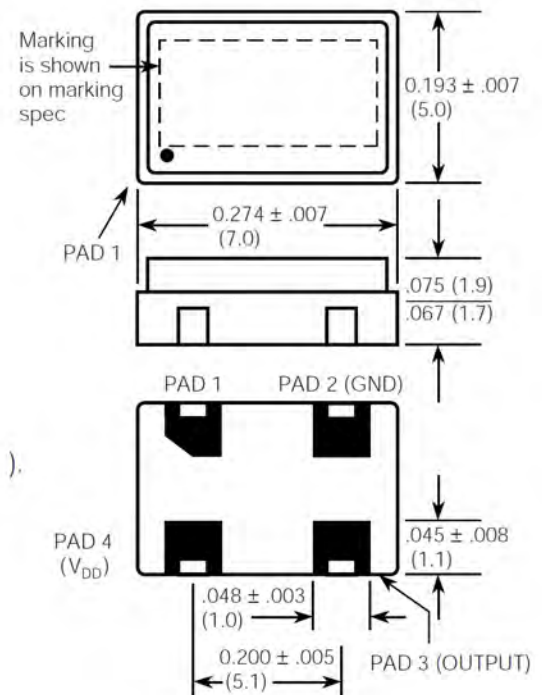
Marking Specification



Package Outline



SUGGESTED PC PADS



Millimeters are shown in ().