



Thru-Hole/Gull Wing

Commercial: 0° to 70°C FIXED FREQUENCY, 1 KHz to 125 MHz TRISTATE, 32.768 KHz to 125 MHz

FEATURES

- Frequency from 1 KHz to 125 MHz
- Choice of Thru-hole packages DIL Full Size ("M") Half Size DIL ("H") Gull Wing SMD
- · Tristate option available
- · Very low power when tristated
- · Start up time less than 5 ms
- Stability options from ±100 ppm to ±20 ppm
- · Guaranteed start-up with ramping DC Supply
- 45/55 symmetry is standard
- Internal bypass capacitor delivers superior waveform characteristics
- · Output jitter from positive edge to positive edge is 50 ps RMS max

TYPICAL APPLICATIONS

 Any thru-hole PCB that requires a standard HCMOS/TTL 3.3V clock, including microprocessors and microcontrollers.

FULL SIZE D.I.L. M package M1380, M1381,

M1380, M1381, H138 M1382, M1388, H138 M1389 H138 M3390, M3391, H339

M3390, M3391, M3392, M3398, M3399 HALF SIZE D.I.L. H package H1380, H1381, H1382, H1388, H1389 H3390, H3391, H3392, H3398,

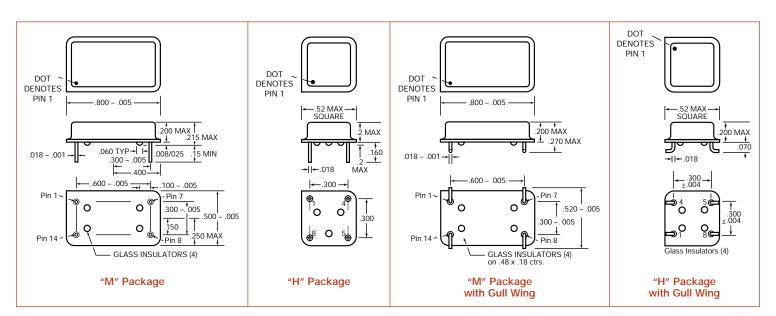
H3399

Description

Our thru-hole fixed frequency 3.3 volt oscillators embody 25 years of design and manufacturing know-how. They are available in full size and half size package, all hermetically sealed with welded stainless steel cover. These 3.3V oscillators are intended for new designs that take advantage of their low dissipation and reduced temperature rise. They cover 0°C to 70°C operation and provide frequency selection from 1 KHz to 125 MHz and have excellent long-term reliability, plus superior startup, loading and waveshape characteristics.

CONNECTIONS — All models

	FULL SIZE	HALF SIZE	M1380 s H1380 s	M3390 s, H3390 s Tristate	
PIN	1	1	NOT USED	Floating or 1 : Oscillator runs Ground or 0 : Disable or Tristate	
PIN	7	4	Ground and Case		
PIN	8	5	Output		
PIN	14	8	+3.3V, V _{DD}		





CRYSTAL OSCILLATORS HCMOS/TTL 3.3V

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FULL SIZE D.I.L. HALF SIZE D.I.L. M package H package M1380, M1381, H1380, H1381, M1382, M1388, H1382, H1388, H1389 M1389 M3390, M3391, H3390, H3391, M3392, M3398, H3392, H3398, M3399 H3399

ELECTRICAL SPECIFICATIONS

Frequency Range

Fixed Output 1KHz to 125 MHz Tristate 32.768 KHz to 125 MHz

Frequency Stability Includes calibration at 25°C, operating temperature, change of input voltage, change of load, shock and

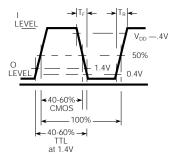
vibration.

violatioiii				
Input Voltage, V _{DD}	MIN 3.0	TYP 3.3	MAX 3.6	UNITS volts
Input Current				
1 KHz to 10 MHz		8	14	mA
10.1 to 25 MHz		15	20	mA
25.1 to 50 MHz		20	30	mA
50.1 to 75 MHz		25	35	mA
75.1 to 125 MHz		30	40	mA
Output Levels				
"0" Level, sinking 16 mA			0.4	volts
"1" Level, sourcing 8 mA	V _{DD} 4		0.5	volts
Rise and Fall Times				
CMOS, 15 pf,				
20 to 80% (<60 MHz)		3.0	4	ns
CMOS, 30 pf,				
20 to 80% (<60 MHz)		4.0	5	ns
CMOS, 50 pf,				
20 to 80% (<60 MHz)		6.0	8	ns
CMOS, 15 pf,				
20 to 80% (>60 MHz)		2.0	2.5	ns
CMOS, 30 pf,				
20 to 80% (>60 MHz)		3.0	4.5	ns
Symmetry				
CMOS, @ 50% V _{DD}		48/52	45/55	percent
Jitter				
from positive edge to positive	/e edge		50	ps RMS
Aging				
First year		3		ppm
After first year		1		ppm/yr

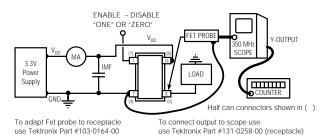
Input Requirements for Pin 1.:

"1": On - Pin 1 may float or 2.4V min., sourcing 400 microAmp "0": Tristate - Pin 1 requires 0.4V, sinking 400 microAmp

Fixed		Frequency
Output	Tristate	Stability
1380	3390	±100 ppm
1381	3391	±25 ppm
1382	3392	±50 ppm
1388	3398	±20 ppm
1389	3399	±32 ppm



WAVEFORMS



ALL OSCILLATORS HAVE INTERNAL BYPASS CAPACITORS

TEST CIRCUIT

ENVIRONMENTAL SPECIFICATIONS

Temperature

Operating 0° to 70° C Storage -55° to +125°C

Temperature Cycle - Not to exceed ±5 ppm change when exposed to 2 hours maximum at each temperature from 0 to 120°C, with 25°C reference

Shock - 1000 Gs, 0.35 ms, 1/2 sine wave, 3 shocks in each plane Vibration - 10-2000 Hz of .06" d.a. or 20 Gs, 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 X 10⁻⁸ atmos, cc/sec of helium

Pins - Kovar, nickel plated with 60/40 solder coat

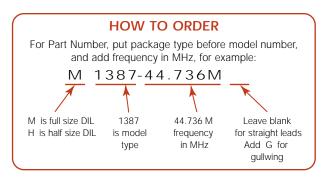
Bend Test – Will withstand two bends of 90° from reference

Header - Steel, with nickel plate

Case - Stainless steel, type 304

Marking - Permanent black epoxy ink or laser marked

Resistance to Solvents - MIL STD 202, Method 215



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