COTS – Extended Temperature
Crystal Oscillators – 5.0V Thru-Hole

Valpey Fisher Corporation
Uncompromised Precision

Features

- Extremely wide operating temperature range – up to +200°C
- 20KHz to 150MHz Frequency range
- Stability options of ±75ppm to ±500ppm
- Tristate and non-tristate options

RoHS Status

RoHS 5/6

Applications

- Thru-hole PCB applications that require an HCMOS/TTL 5V clock and that might be exposed to extremely harsh environmental conditions.
- Down-hole applications

Electrical Specifications

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Frequency Range	F		0.02		150	MHz	
Frequency Stability	ΔF/F	Includes calibration at 25°C, operating temperature, change of input voltage, change of load, shock and vibration	±75		±500	ppm	See Chart
Operating Temperature	T		-55°		+200°	°C	See Chart
Aging		First Year After First Year		3 1		ppm ppm/yr	
Supply Voltage	Vcc		4.5	5.0	5.5	V	
Supply Current					40	mA	
Jitter		from positive edge to positive edge			50		ps RMS
Output		All units, full temperature range Loads 3 TLL loads, or 10 LSTTL loads, or 15pF CMOS					
Symmetry*		TTL and LSTTL @ 1.4V CMOS, @ 50% V_{DD}			40/60 40/60	%	
Rise and Fall Times		TTL and LSTTL from 0.4 to 2.4V CMOS, 15 pf, from 0.4 to (V_{DD} -0.4) V CMOS, 30 pf, from 0.4 to (V_{DD} -0.4) V			10 10 20	ns	

*Superior symmetry available on all models.

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Model Selection Table

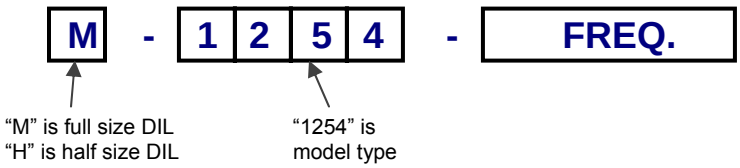
NON-TRISTATE	TRISTATE	Frequency Stability	Operating Temperature
Model	Model		
1254	3254	±180 ppm	0° to +175°C
1256	3256	±75 ppm	-55° to +85°C
1258	3258	±100 ppm	-40° to +85°C
4001	4301	±500 ppm	-55° to +200°C
4002	4302	±500 ppm	0° to 200°C
4003	4303	±250 ppm	-55° to +200°C
4004	4304	±250 ppm	0° to +200°C
4005	4305	±250 ppm	-55° to +175°C
4006	4306	±250 ppm	0° to +175°C
4007	4307	±200 ppm	-55° to +175°C
4008	4308	±200 ppm	0° to +175°C
4009	4309	±100 ppm	-55° to +125°C

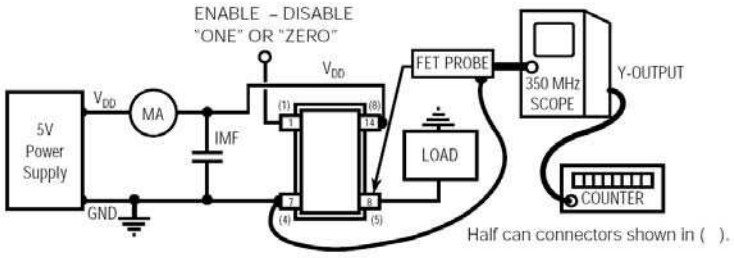
*Consult factory for better stability

Environmental and Mechanical Conditions

Parameter	Specification
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
Leak	MIL STD 883, Method 1014, condition A1
Pins	Alloy 52, nickel plated with 60/40 solder coat, or 7 microinch gold over nickel
Bend Test	Will withstand two bends of 90° from reference
Header	Steel, with nickel plate, or 7 microinch gold over nickel
Case	Stainless steel, type 304
Marking	Epoxy ink or laser engraved
Resistance to Solvents	MIL STD 202, Method 215

HOW TO ORDER





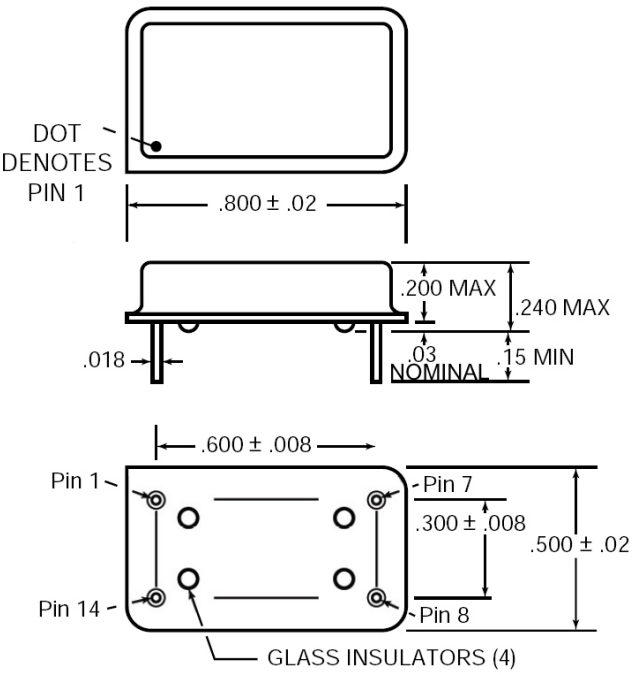
ALL OSCILLATORS HAVE INTERNAL BYPASS CAPACITORS

TEST CIRCUIT

Connections

Pin		Non-Tristate Models	Tristate Models
Full Size	Half Size		
1	1	NOT USED	Floating or 1 : Oscillator runs Ground or 0 : Disable or Tristate
7	4	Ground and Case	
8	5	Output	
14	8	+5.0V, V_{DD}	

"M" Package



"H" Package