

T3490, T3492

XO - 50 MHz to 165 MHz

5 x 7mm SMD, HCMOS, 3.3V

Features

- Jitter less than 5ps rms
- Very fast rise time
- Start up times less than 5 ms
- Stability choice of ± 50 ppm (T3492) or ± 100 ppm (T3490)
- Guaranteed start-up with ramping DC Supply
- 45/55 symmetry is standard
- Very low power when tristated.



RoHS Status



Applications

- Gigabet Ethernet and Fibre Channel. Common frequencies are: 53.125, 62.5, 75.0, 106.25, 125, 155.52 and 156.25 MHz.

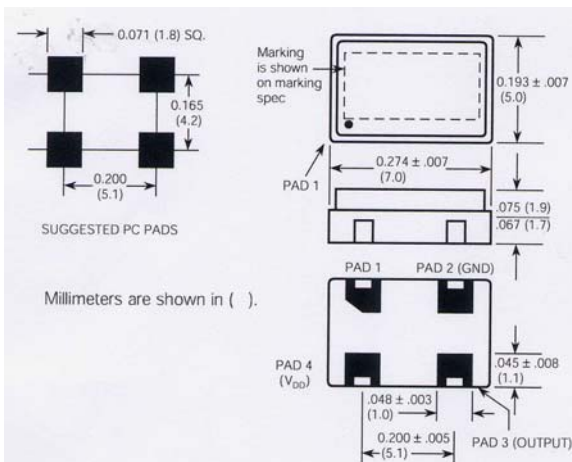


Fig. 2. "T" Package

CONNECTIONS

	Tristate Models
PAD 1	Floating or 1 : Oscillator runs Ground or 0 : Disable or Tristate
PAD 2	Ground and Case
PAD 3	Output
PAD 4	+3.3V, V _{DD}

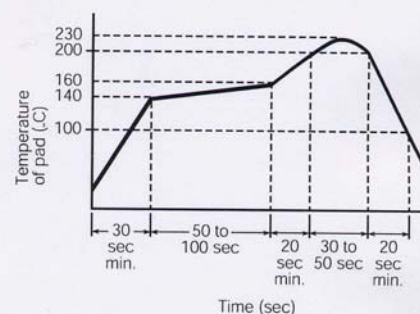


Fig. 1. Recommended Reflow Soldering Profile

For Non-RoHS Compliant Parts

For RoHS Compliant Parts: 260C for 10s max

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ELECTRICAL SPECIFICATIONS

Frequency Range 50 to 165 MHz

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

Maximum Load 30 pf

	MIN.	TYP	MAX	UNITS
Input Voltage, V_{DD}	3.0	3.3	3.6	volts

Input Current	35			mA
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Output Levels

"0" Level, sinking 16 ma

"1" Level, sourcing 8 ma

$V_{DD}-0.4$	0.4			volts
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Rise Time, NL to 30 pf

0.4V to ($V_{DD}-0.4$)V

2.0			ns
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Fall Time, NL to pf

($V_{DD}-0.4$)V to 0.4V

2.0			ns
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Aging

First year

After first year

3			ppm/yr
1			

Symmetry

CMOS, @ 50% V_{DD}

48/52	45/55	percent
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Jitter, all voltage, temperature and load to 15 pf

pos. edge to pos. edge, rms

pos. edge to pos. edge, pk-pk

3	5	ps
16	25	ps

Input Requirements for Pin 1.:

"1": On - Pin 1 may float or 2.4V min., sourcing 400 microAmp

"0": Disable or Tristate - Pin 1 requires 0.4V, sinking 400 microAmp

ENVIRONMENTAL SPECIFICATIONS

Temperature

Operating 0° to 70°C

Storage -55° to +125°C

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

Leak - MIL STD 883, Method 1014, condition A1

Case - Hermetically sealed package

Pads - 60 microinch of gold over nickel

Marking - Epoxy ink or laser engraved

Resistance to Solvents - MIL STD 202, Method 215

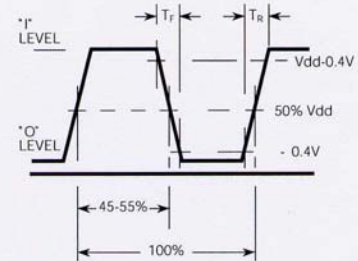


Fig. 3. Timing

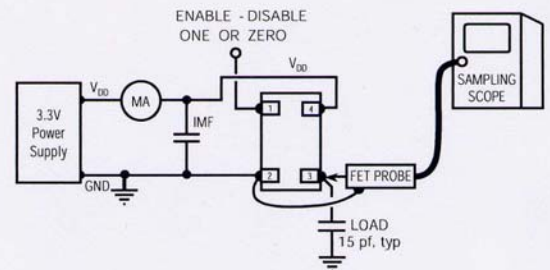


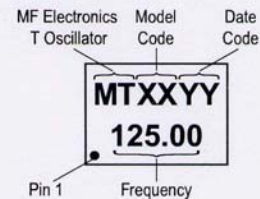
Fig. 4. Test Circuit

MODEL	Frequency Stability	Marking Letter ID*
T3490	±100 ppm	FA
T3492	± 50 ppm	FC

* See Marking Specification

MARKING SPECIFICATION

The format for the marking is:



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TYPICAL WAVEFORMS

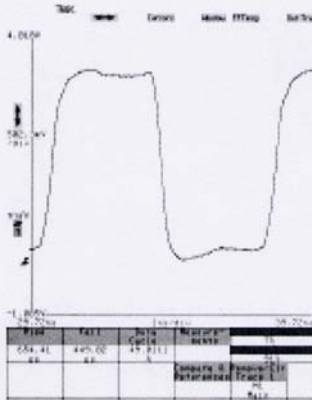


Fig. 5. T3492-125 M without load. Rise time is 0.654 ns. Fall time is 0.449 ns. Duty cycle is 49.0%. Readings taken at 3.3V.

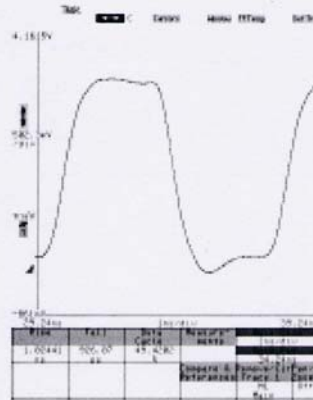


Fig. 6. T3492-125 M with 15 pf load. Rise time is 1.02 ns. Fall time is 0.96 ns. Duty cycle is 48.7%. Readings taken at 3.3V.

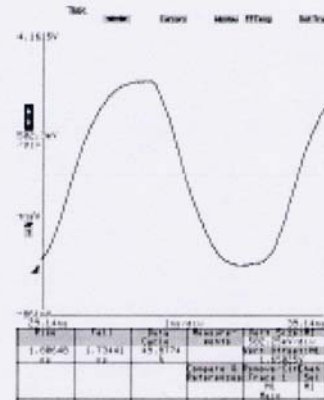


Fig. 7. T3492-125 M with 30 pf load. Rise time is 1.80 ns. Fall time is 1.73 ns. Duty cycle is 49.8%. Readings taken at 3.3V.

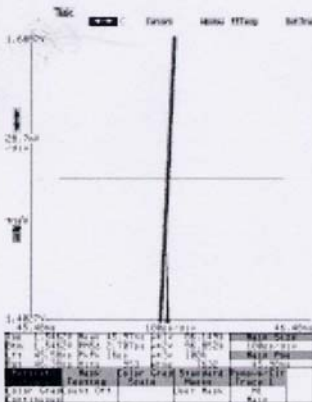


Fig. 8. T3492-125 M showing jitter, with no load. RMS jitter is 2.7 ps and peak-to-peak jitter is 16 ns. Readings taken with Tek 11801B oscilloscope with SD22 Sampling Head.

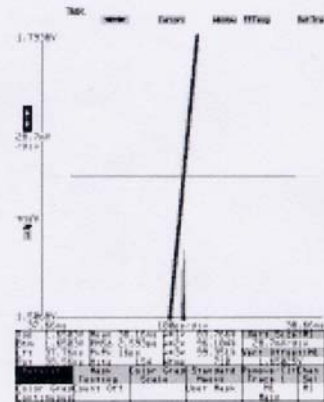


Fig. 9. T3492-125 M showing jitter, with 15 pf load. RMS jitter is 3.0 ps and peak-to-peak jitter is 16 ns. Readings taken with Tek 11801B oscilloscope with SD22 Sampling Head.

HOW TO ORDER

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

T 3492 - 125M

T is SMD
T package

3492
is model
type

125 M
frequency
in MHz