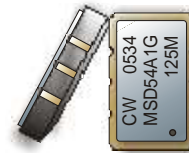


CRYSTAL CONTROLLED OSCILLATORS

3.3V SURFACE MOUNT HCMOS CLOCK OSCILLATOR



MSD54A1G MSD51A1G
MSD52A1G MSD53A1G

ABSOLUTE MAXIMUM RATINGS

TABLE 1.0

| PARAMETER | UNITS | MINIMUM | NOMINAL | MAXIMUM | UNITS | NOTE |
|---------------------|-------|---------|---------|---------|-------|------|
| Storage Temperature | | -55 | - | 125 | °C | |
| Supply Voltage | (Vcc) | -0.5 | - | 7 | Vdc | |

MODEL SPECIFICATIONS:

TABLE 2.0

MODEL MSD54A1G

| PARAMETER | UNITS | MINIMUM | NOMINAL | MAXIMUM | UNITS | NOTE |
|----------------------|-------|---------|---------|---------|-------|------|
| Frequency Range | (Fo) | 1.8 | - | 156.25 | MHz | |
| Frequency Tolerance: | | -20 | - | 20 | ppm | 1 |

MODEL MSD51A1G

| PARAMETER | UNITS | MINIMUM | NOMINAL | MAXIMUM | UNITS | NOTE |
|----------------------|-------|---------|---------|---------|-------|------|
| Frequency Range | (Fo) | 1.8 | - | 156.25 | MHz | |
| Frequency Tolerance: | | -25 | - | 25 | ppm | 1 |

MODEL MSD52A1G

| PARAMETER | UNITS | MINIMUM | NOMINAL | MAXIMUM | UNITS | NOTE |
|----------------------|-------|---------|---------|---------|-------|------|
| Frequency Range | (Fo) | 1.8 | - | 156.25 | MHz | |
| Frequency Tolerance: | | -50 | - | 50 | ppm | 1 |

MODEL MSD53A1G

| PARAMETER | UNITS | MINIMUM | NOMINAL | MAXIMUM | UNITS | NOTE |
|----------------------|-------|---------|---------|---------|-------|------|
| Frequency Range | (Fo) | 1.8 | - | 156.25 | MHz | |
| Frequency Tolerance: | | -100 | - | 100 | ppm | 1 |

OPERATING SPECIFICATIONS

TABLE 3.0

| PARAMETER | UNITS | MINIMUM | NOMINAL | MAXIMUM | UNITS | NOTE |
|----------------------------------|-------|---------|---------|---------|--------|------|
| Operating Temperature Range | | 0 | - | 70 | °C | |
| Supply Voltage | (Vcc) | 2.97 | 3.3 | 3.63 | Vdc | |
| Supply Current | (Icc) | - | - | 50 | mA | |
| Jitter (BW=10Hz to 20MHz) | | - | - | 5 | ps rms | |
| Jitter (BW=12kHz to 20MHz) | | - | - | 1 | ps rms | |
| SSB Phase Noise at 10Hz offset | | - | -60 | - | dBc/Hz | |
| SSB Phase Noise at 100Hz offset | | - | -90 | - | dBc/Hz | |
| SSB Phase Noise at 1KHz offset | | - | -125 | - | dBc/Hz | |
| SSB Phase Noise at 10KHz offset | | - | -135 | - | dBc/Hz | |
| SSB Phase Noise at 100KHz offset | | - | -140 | - | dBc/Hz | |

INPUT CHARACTERISTICS

TABLE 4.0

| PARAMETER | UNITS | MINIMUM | NOMINAL | MAXIMUM | UNITS | NOTE |
|---------------------------------------|-------|---------|---------|---------|-------|------|
| Tri-state Enable Voltage (Table 7.0) | (Vih) | ≥70%Vcc | - | - | Vdc | 2 |
| Tri-state Disable Voltage (Table 7.0) | (Vil) | - | - | ≤30%Vcc | Vdc | 2 |

HCMOS OUTPUT CHARACTERISTICS

TABLE 5.0

| PARAMETER | UNITS | MINIMUM | NOMINAL | MAXIMUM | UNITS | NOTE |
|-----------------------------|-------|------------|---------|------------|-------|------|
| LOAD | | - | - | 15 | pF | |
| Voltage (High) | (Voh) | ≥ 0.9(Vcc) | - | - | Vdc | |
| (Low) | (Vol) | - | - | ≤ 0.1(Vcc) | Vdc | |
| Current (High) | (Ioh) | -8 | - | - | mA | |
| (Low) | (Iol) | - | - | 8 | mA | |
| Duty Cycle at 50% of Vcc | | 45 | 50 | 55 | % | |
| Rise / Fall Time 10% to 90% | | - | 0.5 | 3 | nS | |

PACKAGE CHARACTERISTICS

TABLE 6.0

| | |
|---------|--|
| Package | Hermetically sealed, leadless ceramic package with gold plated terminations. |
|---------|--|

DESCRIPTION

The Connor Winfield MSD5xA1G - Series are hermetically sealed surface mount 3.3V Crystal Controlled Oscillators (XO) HCMOS / TTL Compatible. The MSD5xA1G - Series are RoHS compliant and are designed for applications requiring low jitter and tight frequency stability.

FEATURES

3.3V OPERATION
LOW JITTER <1pS RMS
FREQUENCY TOLERANCE:
MSD54A1G +/-20ppm
MSD51A1G +/-25ppm
MSD52A1G +/-50ppm
MSD53A1G +/-100ppm
TEMPERATURE RANGE: 0 TO 70°C
TRI-STATE ENABLE / DISABLE
FUNCTION
LEADLESS SURFACE MOUNT
PACKAGE
TAPE AND REEL PACKAGING
ROHS COMPLIANT / LEAD FREE

ORDERING INFORMATION

MSD54A1G - 125 MHz

HCMOS
CLOCK
SERIES

CENTER
FREQUENCY

Specifications subject to change without notice.

CRYSTAL CONTROLLED OSCILLATORS

Note:

- 1) Inclusive of calibration, frequency vs. temperature stability, supply voltage change, load change, shock and vibration, 20 years aging.
- 2) Oscillator output is enabled with no connection on pad 1

Enable / Disable Function

TABLE 7.0

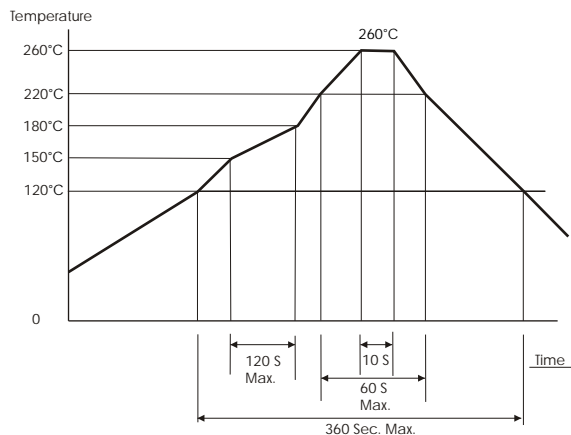
| Enable / Disable Function (Pad 1) | Output |
|-----------------------------------|--------------------------|
| High or Open | Enable |
| Low | Disable (High Impedance) |

Pin Connections

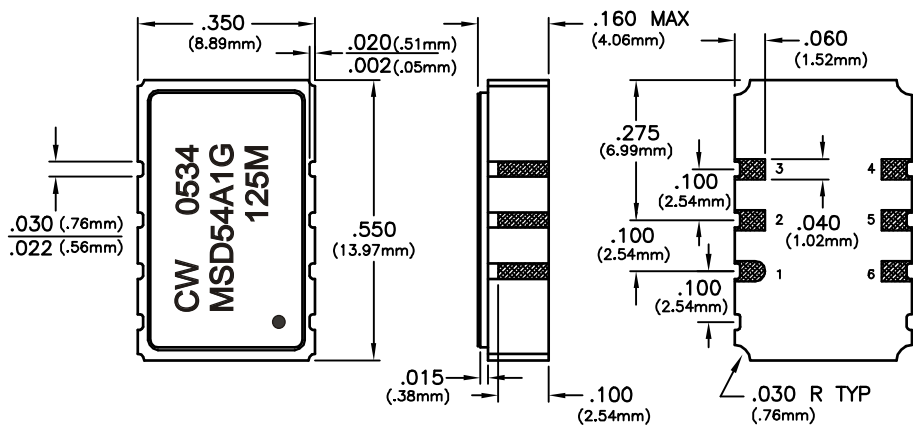
TABLE 8.0

| Pin | Connection |
|-----|------------------|
| 1 | Enable / Disable |
| 2 | N/C |
| 3 | Ground |
| 4 | Output |
| 5 | N/C |
| 6 | Vcc |

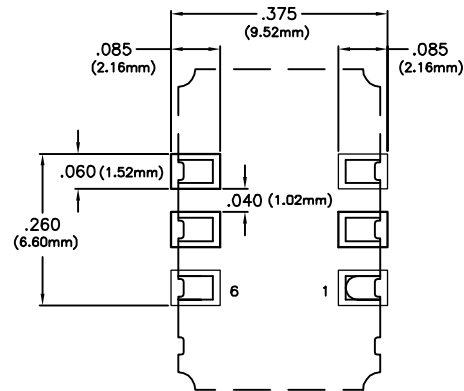
Solder Profile



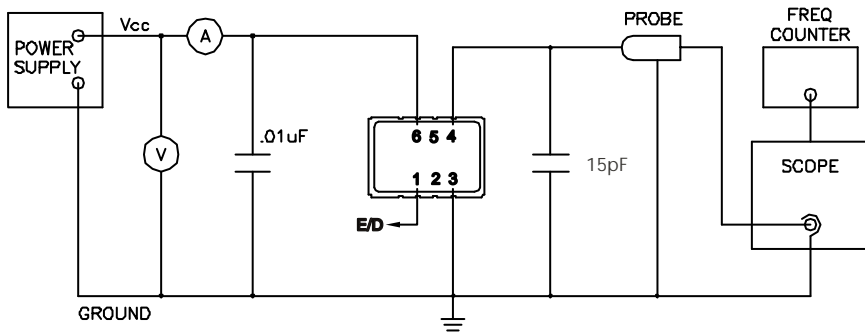
Package Outline and Dimensions



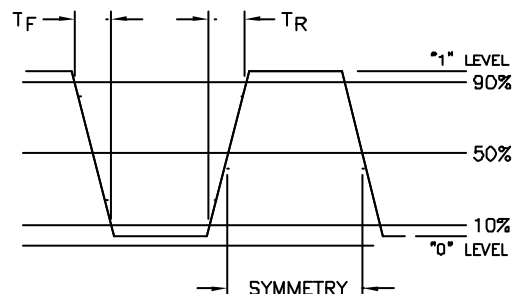
Suggested Pad



Test Circuit



Output Waveform



Specifications subject to change without notice.