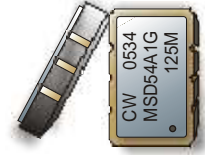


CRYSTAL CONTROLLED OSCILLATORS

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.
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**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**

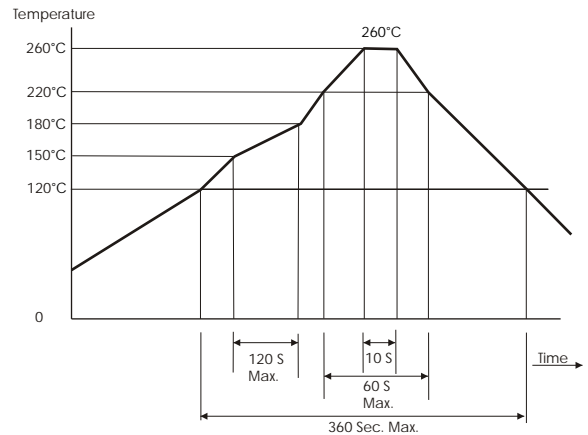
Enable / Disable Function (Pad 1)	Output
High or Open	Enable
Low	Disable (High Impedance)

**Pin Connections**

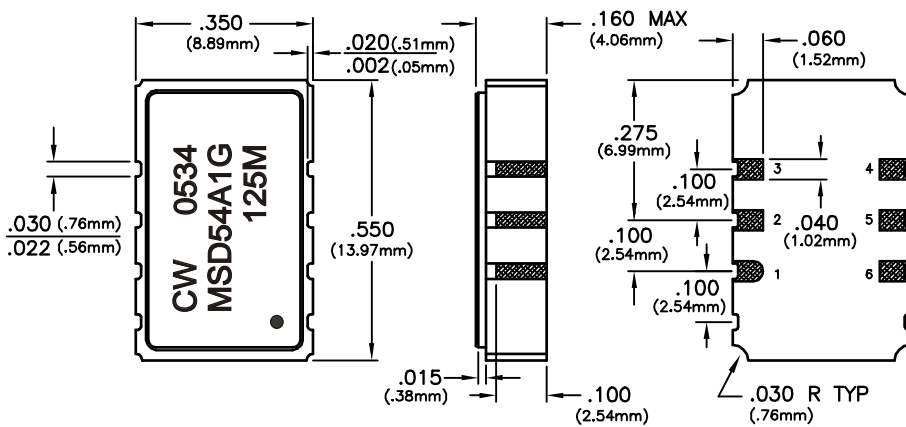
**TABLE 8.0**

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

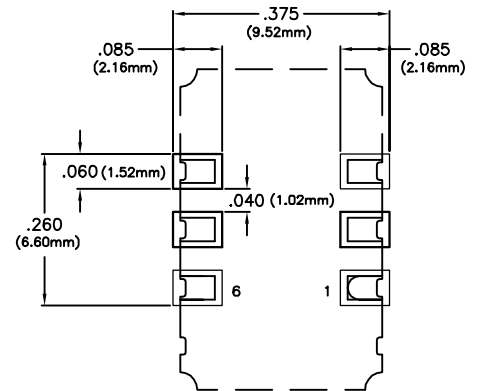
**Solder Profile**



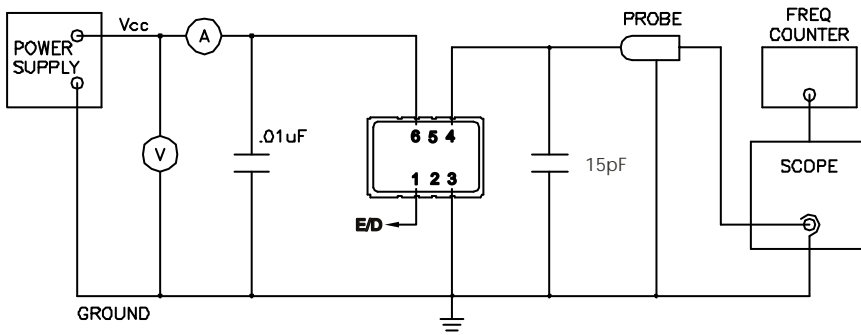
**Package Outline and Dimensions**



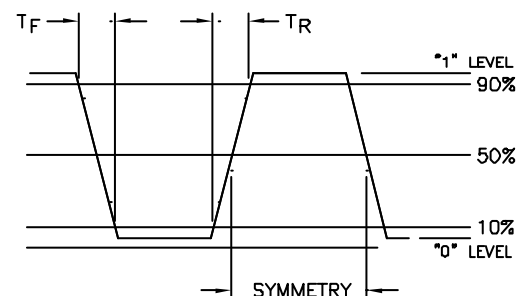
**Suggested Pad**



**Test Circuit**



**Output Waveform**



Specifications subject to change without notice.