150.00 MHz LVDS Oscillator

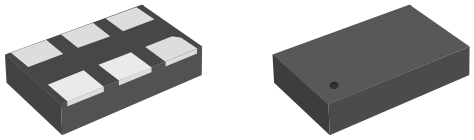
High Performance Differential MEMS Oscillator

4MA150000Z4

DATASHEET

Features

- Frequency: 150.00 MHz
- Output Type: LVDS
- Frequency Stability: ± 50 ppm
- Supply Voltage: 2.5V & 3.3V
- Standard Packages: 5.0 x 3.2 mm; 7.0 x 5.0 mm
- RMS phase jitter: 0.6 ps typical (12k to 20MHz)
- Operating Temperature: - 40 to 85 °C

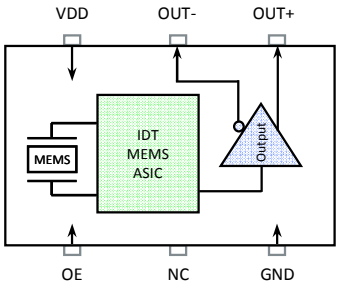


7.0 x 5.0 mm package shown
(also available in 5.0 x 3.2mm pkg)

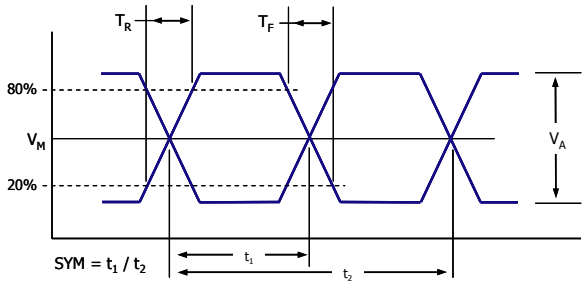
Specification

Parameter	2.5 V Specifications			3.3 V Specifications			Units	Conditions
	Min	Typ	Max	Min	Typ	Max		
Supply Voltage (V_{DD})	2.375	2.50	2.625	2.97	3.30	3.63	V	
Output Frequency		150.00			150.00		MHz	
Frequency Stability	- 50		+ 50	- 50		+ 50	ppm	Includes supply voltage and temperature variation (-40 to 85°C), reflow drift, and aging.
Supply Current		100			105		mA	No load
Enable/Disable Time			1			1	us	Guaranteed by design
Input LOW level			$0.3V_{DD}$			$0.3V_{DD}$	V	At OE pin
Input HIGH level	$0.7V_{DD}$			$0.7V_{DD}$			V	At OE pin
Output LOW level		1.05			1.05		V	
Output HIGH level		1.40			1.40		V	
Amplitude (V_A)		0.35			0.35		V	Single Ended output swing (Pk-Pk)
Mid Level (V_M)		1.22			1.22		V	
Rise Time (T_R)		370	420		410	520	ps	Maximum; 20/80% of V_A; Output load (CL) = 2pF; Guaranteed by Char.
Fall Time (T_F)		370	420		410	520	ps	Maximum; 20/80% of V_A; Output load (CL) = 2pF; Guaranteed by Char.
Symmetry (SYM)	48	50	52	48	50	52	%	Worst case; measured at 50% of waveform
Phase Jitter		0.7			0.6		ps	12k to 20MHz, RMS; Measured Differentially
Period Jitter		4.1			4.2		ps	RMS
Cycle-to-Cycle Jitter		32			32		ps	1,000 cycles, Peak
Start-up Time		10			10		ms	Output valid time after power up, 25°C
Aging		± 5			± 5		ppm	25°C, 10 years

Block Diagram



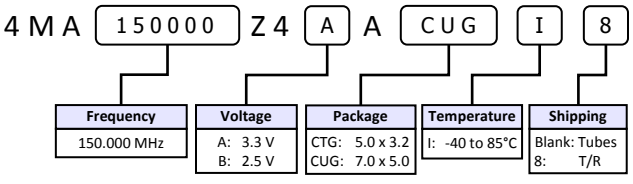
Output Waveform



Part Ordering Information

Package Size	Voltage	Ordering Code
7.0 x 5.0 mm	3.3 V	4MA150000Z4AACUGI
	2.5 V	4MA150000Z4BACUGI
5.0 x 3.2 mm	3.3 V	4MA150000Z4AACTGI
	2.5 V	4MA150000Z4BACTGI

* Factory minimum order quantity: 500pcs (T/R)

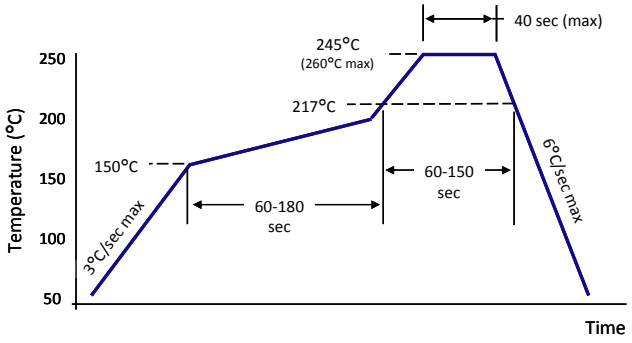


Pin Description

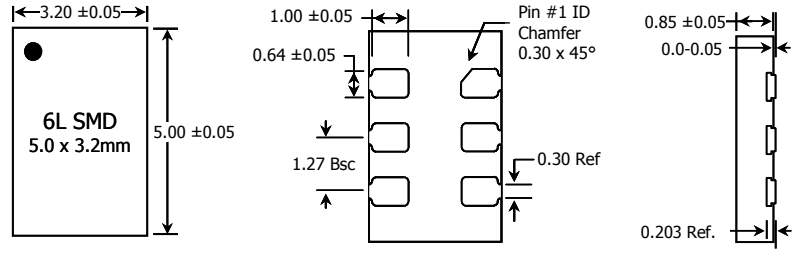
Pin #	Name	Description
1	OE	Output Enable*
2	NC	No Connect
3	GND	Ground
4	OUT+	Output
5	OUT–	Complementary Output
6	VDD	Power Supply Voltage

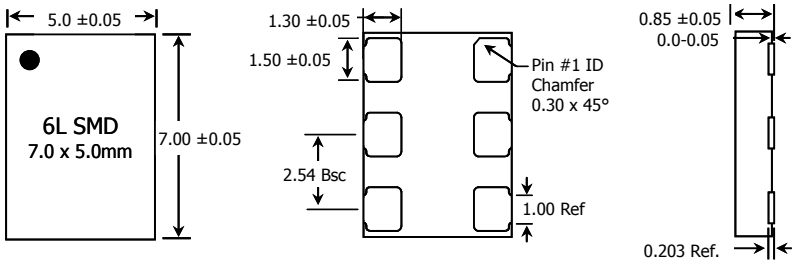
* Pulled high internally

Solder Reflow Profile

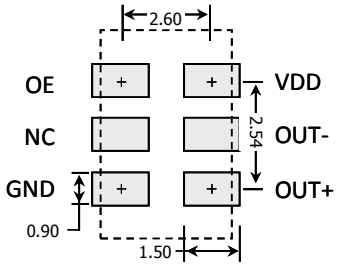


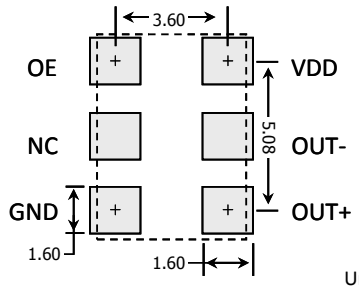
Package Outline and Dimensions





Typical PCB Land Pattern





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