

100.00 MHz Ultra-Low Jitter Oscillator Plus-PPM Margining MEMS Oscillator (LVPECL)

4HF100000Z3

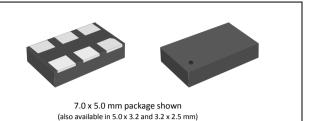
ADVANCE DATASHEET

Features

Nominal Frequency: 100.00 MHz (LVPECL) Any Freq Tuning (±1000 ppm): 99.900 to 100.100 MHz

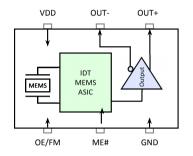
RMS phase jitter: 0.1 ps typical • Frequency Stability: ±25 / ±50 ppm Standard Packages: 7050 / 5032 / 3225

■ Internal MEMS Resonator No external XTAL or XO required



The 4HF100000Z3 is an ultra-low Phase Jitter (100 fs) oscillator capable of up to ± 1000 ppm of real time frequency margining in one ppm steps. It is ideal for applications requiring extremely low jitter and/or Plus-PPM clocking. Any frequency from 99.900 to 100.100 MHz can be generated in real time without any external XTAL or XO.

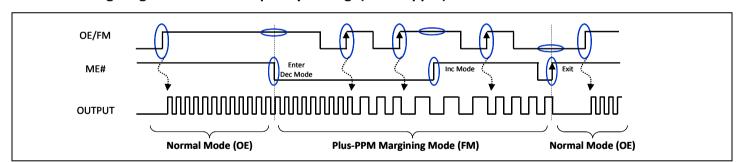
Block Diagram



Pin Description

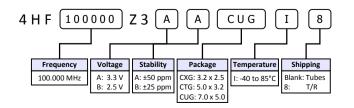
Pin#	Name	Description				
1*	OE	Output Enable				
1	FM	Frequency Margining (decrement/increment)				
2*	ME#	Margining Enable				
3	GND	Ground				
4	OUT+	Output				
5	OUT-	Output (Complementary)				
6	VDD	Power Supply Voltage				
* Pulled high internally						

Plus-PPM Margining & Real Time Frequency Tuning (± 1000 ppm)



Part Ordering Information

Package	Voltage (V)	Ordering Code				
(mm)		± 50 ppm	± 25 ppm			
7.0 x 5.0	3.3	4HF100000Z3AACUGI	4HF100000Z3ABCUGI			
	2.5	4HF100000Z3BACUGI	4HF100000Z3BBCUGI			
5.0 x 3.2	3.3	4HF100000Z3AACTGI	4HF100000Z3ABCTGI			
	2.5	4HF100000Z3BACTGI	4HF100000Z3BBCTGI			
3.2 x 2.5	2.5	4HF100000Z3BACXGI 4HF100000Z3BBCXGI				
* Factory minimum order quantity: 500pcs (T/R)						



Typical Phase Jitter

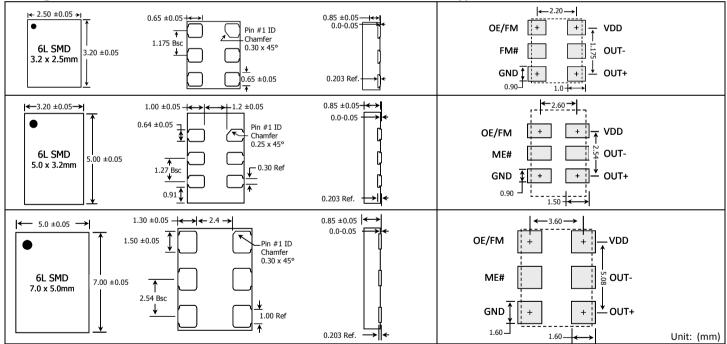


Specification

Parameter	Spe	2.5 V Specifications		3.3 V Specifications		Units	Conditions	
	Min	Тур	Max	Min	Тур	Max		
Supply Voltage (V _{DD})	2.375	2.50	2.625	2.97	3.30	3.63	V	
Output Frequency		100.00			100.00		MHz	
Frequency Stability	- 50		+ 50	- 50		+ 50	ppm	Includes supply voltage and temperature variation (-40 to 85°C), reflow drift, and aging.
Supply Current		90			95		mA	No load
Enable/Disable Time			1			1	us	Guaranteed by design
Input HIGH/LOW level	0. 7V _{DD}		$0.3V_{DD}$	0. 7V _{DD}		$0.3V_{\text{DD}}$	V	At OE pin
Output LOW level		0.8	Vpp -1.8		1.5	V _{DD} -1.8	V	
Output HIGH level	Vpp -1.0	1.6		V _{DD} -1.1	2.3		V	
Amplitude (V _A)		0.75			0.75		V	Single Ended output swing (Pk-Pk)
Mid Level (V _M)		V _{DD} -1.3			V _{DD} -1.3		V	
Rise/Fall Time (T _R)			300		250		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		0.12			0.12		ps	1.875MHz to 20MHz, RMS; Measured Differentially (IEEE802.3-2005)
		0.25			0.25		ps	12k to 20MHz, RMS; Measured Differentially
Period Jitter		2.5			2.5		ps	RMS
Cycle-to-Cycle Jitter		20			20		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

Package Outline and Dimensions

Typical PCB Land Pattern





Sales

800-345-7015 (inside USA) +1 408-284-8200 (outside USA) **Technical Support**

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