



A Product Line of
Diodes Incorporated



PRODUCT SPECIFICATION

NOMINAL FREQUENCY	156.250000 MHz
PRODUCT TYPE	TYPE HX 3.2x2.5 SEAM SEALED CRYSTAL CLOCK OSCILLATOR
SPEC. NO. (P/N)	HX34F6201Z
ISSUE DATE	November 8, 2021
VERSION	A

Diodes Incorporated

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*Pb-free
*RoHS Compliant
*HF-Halogen Free
*REACH Compliant
*MSL: Level 1

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VERSION HISTORY

[illegible]

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ELECTRICAL SPECIFICATIONS

SRe Part Number : HX34F6201Z

Item	Symbol	Specifications	Units	Notes
Nominal Frequency	Fo	156.250000	MHz	
Frequency Stability	FT	± 50	ppm	**See note
Operating Temperature Range	TR	-40 to +105	°C	
Supply Voltage	V _{CC}	+3.3 ± 5.0%	V	
Logic Type	LT	HCSL		
Supply Current, Output Enabled	I _{CC} /OE	40	mA	Max.
Supply Current, Output Disabled	I _{CC} /OD	10	uA	Max.
Duty Cycle (Symmetry)	DC/SY	45 / 55	%	Measured 50% of Waveform
Rise / Fall Time	T _R /T _F	0.7	ns	Max. measured 20/80% of Waveform
Output Voltage "0" Level	VOL	-0.15 / 0.15	V	Min. / Max. (Single-end OUT, OUTN)
Output Voltage "1" Level	VOH	0.65 / 0.95	V	Min. / Max. (Single-end OUT, OUTN)
Output Load		R _p =50Ω, C _L =2pF		Output requires termination
Jitter, Phase	RMS	0.1 / 0.15	ps	Typ./Max. 12KHz ~ 20MHz Frequency Band
Jitter, Accumulated	RMS(1-σ)	4	ps	Max. 20,000 Consecutive Periods
Jitter, Peak to Peak	Pk-Pk	40	ps	Max. 100,000 Random Periods
Phase Noise		-138	dBc/Hz	Max. at 10KHz offset
Phase Noise		-146	dBc/Hz	Max. at 100KHz offset
Phase Noise		-150	dBc/Hz	Max. at 1MHz offset
Phase Noise		-152	dBc/Hz	Max. at 10MHz offset
Phase Noise		-155	dBc/Hz	Max. at 20MHz offset
Phase Noise		-155	dBc/Hz	Max. at 100MHz offset
Start Up Time		10	ms	Max.
Storage Temperature Range		-55 to +125	°C	

****Stability includes all combinations of Operating Temperature, Load changes, rated Input (Supply) Voltage changes, Initial Calibration Tolerance (25°C), Aging (1 year at 25°C Average Effective Ambient Temperature), Shock and Vibration.**

OUTPUT ENABLE / DISABLE

Parameter	Min.	Typ.	Max.	Units	Notes
Input Voltage (Pin1), Output Enable	0.7V _{CC}			V	Or Open
Input Voltage (Pin1), Output Disable (low power standby)			0.3V _{CC}	V	Output is Hi-Z
Output Disable Delay			200	ns	
Output Enable Delay			2	ms	

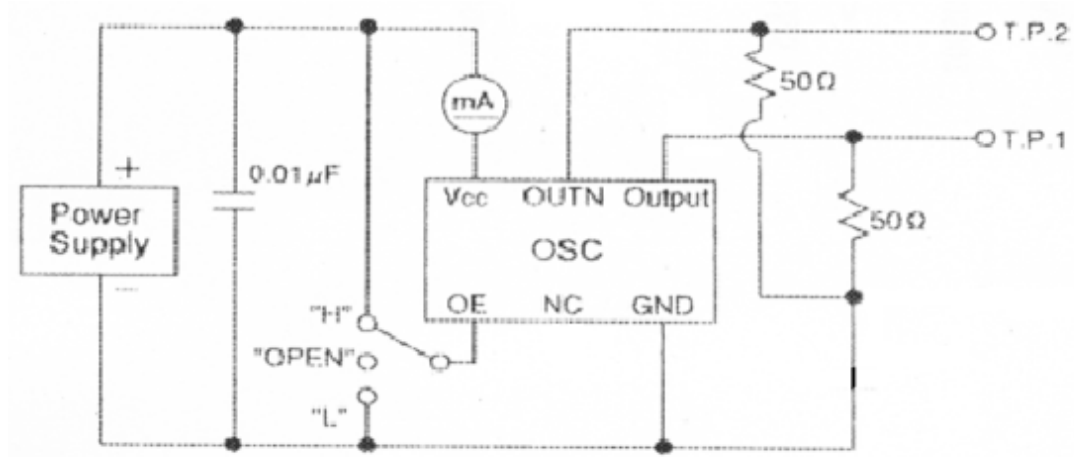
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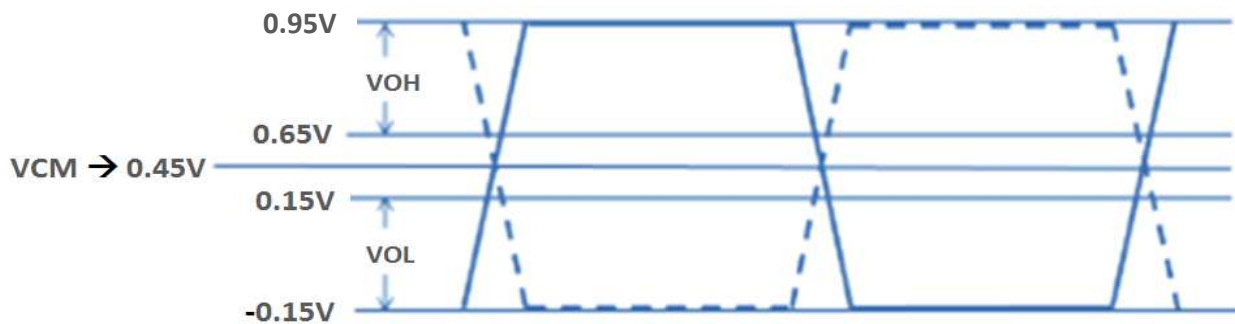
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TEST CIRCUIT



OUTPUT WAVEFORM



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RELIABILITY SPECIFICATIONS

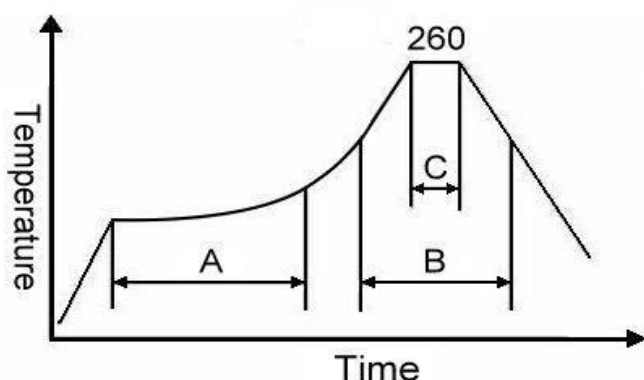
ENVIRONMENTAL:

- a) THERMAL SHOCK: MIL-STD-883, Method 1011, Condition A
- b) MOISTURE RESISTANCE: MIL-STD-883, Method 1004
- c) VIBRATION: MIL-STD-883, Method 2007, Condition A
- d) RESISTANCE TO SOLDERING HEAT: J-STD-020D Table 5-2 Pb-free devices
(except 2 cycles max)
- e) HAZARDOUS SUBSTANCE: RoHS Compliant
- f) ESD Testing: JESD22 A114 / JESD22 C101
- g) Latch up Testing: JESD78

MECHANICAL:

- a) SHOCK: MIL-STD-883, Method 2002, Condition B
- b) SOLDERABILITY: JESD22-B102-D Method 2 (Preconditioning E)
- c) TERMINAL STRENGTH: MIL-STD-883, Method 2004, Test Condition D
- d) GROSS LEAK: MIL-STD-883, Method 1014, Condition C
- e) FINE LEAK: MIL-STD-883, Method 1014, Condition A2, $R1=2 \times 10^{-8}$ atm cc/s
- f) SOLVENT RESISTANCE: MIL-STD-202, Method 215

SUGGESTED IR REFLOW PROFILE



Note:

	Stage	Temperature	Time
A	Preheat	150~200°C	60~120 Sec
B	Primary Heat	217°C	60~150 Sec
C	Peak	260°C	10 Sec

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MARKING



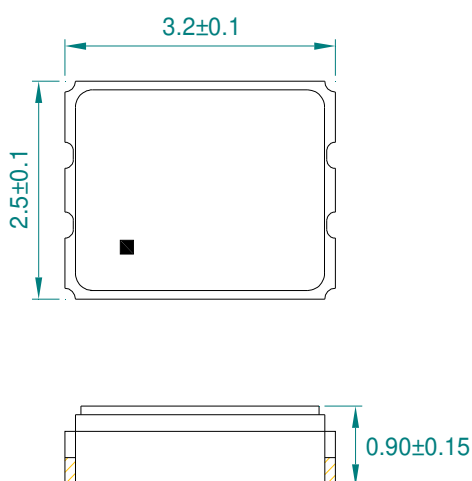
He
Model Series

y
Year Code
(last digit of year)

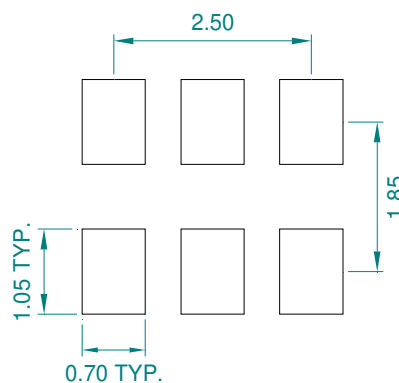
ww
Week Code

v
Factory Code

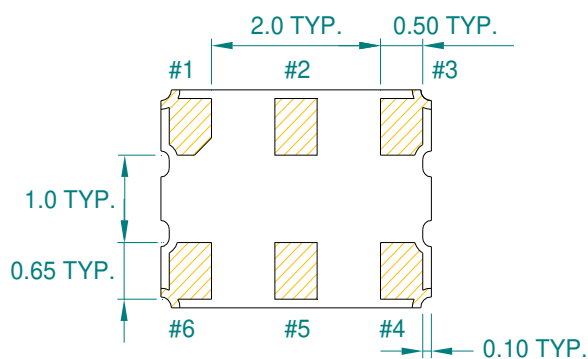
MECHANICAL DRAWINGS (Scale:None. Dimensions are in mm.)



Recommended Land Pattern*



*External high-frequency power decoupling is recommended. (see test circuit for minimum recommendation). To ensure optimal performance, do not route traces beneath the package.



(Bottom View)

Pin	Function
1	OE
2	NC
3	V _{EE}
4	OUTPUT
5	OUTPUT N
6	V _{CC}

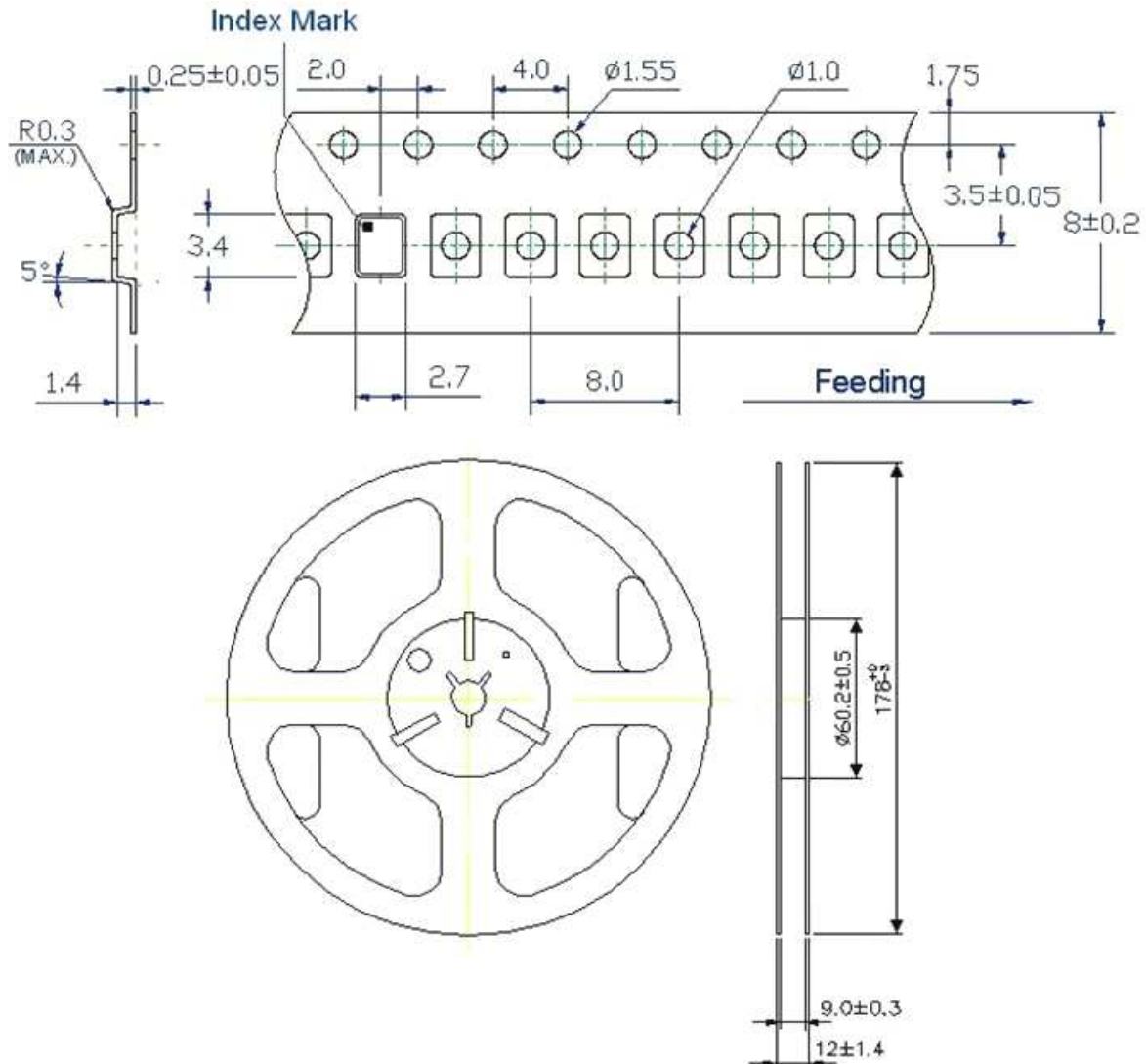
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TAPE&REEL



1. 230mm minimum leader which consist of carrier and/or tape followed by a minimum of 160mm of empty carrier tape sealed with cover tape.
2. 160mm minimum trailer of empty carrier tape sealed with cover tape.

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PACKING

