HDF14 LVDS OSCILLATORS

14 pin Dual-in-Line

RoHS COMPLIANT 2002 / 95 /EC

DESCRIPTION

HDF14 series LVDS output oscillators cover the frequency range 38MHz to 640MHz. The design contains a high 'Q' fundamental crystal and utilizes a low jitter multiplier circuit.

SPECIFICATION

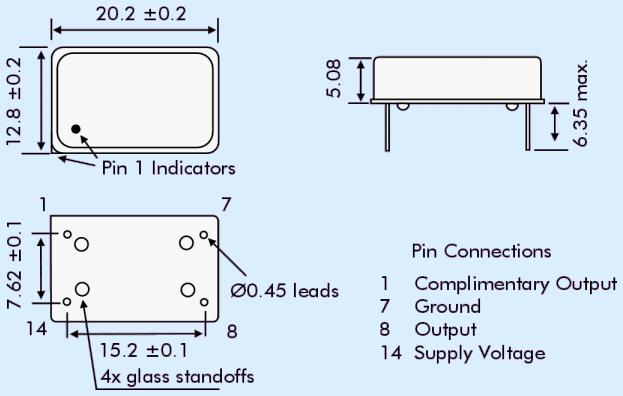
Frequency Range:	38.0MHz to 640.0MHz
Output Logic	LVDS
Phase Noise:	*See table*
Frequency Stability:	*See table*
Operating Temp Range	
Commercial:	-10° to +70°C
Industrial:	-40° to +85°C
Input Voltage:	+2.5V or +3.3VDC ±5%
Output Logic	
High '1' V_{OH}:	1.4V typical, 1.6V max.
Low '0' V_{OL}:	0.9V min., 1.1V typical
Differential Output Voltage V_{OD}:	247mV min., 355mV typ., 454mV max. Output 1 - Output 2
Differential Output Error dV_{OD}:	-50mV min., 50mV max.
Output Offset Voltage V_{OS}:	1.125V min., 1.20V typ., 1.375V max.
Offset Magnitude Error dV_{OS}:	0mV min., 3mV typ., 25mV max.
Rise/Fall Times:	0.7ns typical, 1.0ns max. (20% to 80% of LVDS waveform)
Current Consumption (15pF load):	
38MHz to 100MHz:	45mA max.
100.01 to 320MHz:	60mA max.
320.01 to 640MHz:	70mA max.
Load:	50Ω from each output
Start-up Time:	5ms typ., 10ms max.
Duty Cycle:	50%±5% (at 1.5V)
Drive Capability:	100 Ohms between outputs
Input Static Discharge Prot:	2kV min.
Storage Temperature Range:	-55°C to +150°C
Ageing:	±3ppm per year max., ±2ppm thereafter. At T amb +25°C
Enable/Disable:	Function not available in 4 pin package

ABSOLUTE MAXIMUM RATINGS

(Permanent damage may be caused if operated beyond these limits.)

Supply Voltage Vdd:	+4.6VDC max.
Input Voltage Vi:	Vss -0.5 min., VDD +0.5V max.
Input Voltage Vo:	Vss -0.5 min., Vdd +0.5V max.

OUTLINE & DIMENSIONS



PHASE NOISE (156.250MHz)

Offset	dBc/Hz
10Hz	-62
100Hz	-92
1kHz	-120
10kHz	-132
100kHz	-128
1MHz	-140
10MHz	-150

JITTER (156.520MHz)

	Typ.	Max.
Integrated Phase Jitter: (12kHz to 20MHz)	0.4ps	0.5ps
Period Jitter: (RMS)	3.0ps	5.0ps
Period Jitter: (peak to peak)	20ps	30ps

STABILITY OVER TEMPERATURE RANGE

Stability ±ppm	Temperature Range °C	Order Code
25	-10 to +70	**A**
50	-10 to +70	**B**
100	-10 to +70	**C**
25	-40 to +85	**D**
50	-40 to +85	**E**
100	-40 to +85	**F**

PART NUMBERS

HDF14 oscillator part numbers are derived as follows:

Example: **3HDF14-A-250.000**

Supply Voltage
25 = 2.5VDC
3 = 3.3VDC
Series Designation
Package Style
14 pin DIL
Stability Code
(See table)
Frequency

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