EUROQUARTZ

HDF62 LVDS OSCILLATORS

11.4 x 9.6 x 2.5mm 6 pad SMD — 38.0MHz to 640.0MHz

DESCRIPTION

HDF62 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. Integrated phase jitter is 0.5ps maximum.

RoHS

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	
No connection:	Both outputs enabled
Disable:	Both outputs are disabled when control pad is taken below 0.3V referenced to ground. Oscillator is always 'on'. (Special request - oscillator is off when disabled.)
Enable:	Both Outputs are enabled when control pad is taken above 0.7 Vcc referenced to ground.

ABSOLUTE MAXIMUM RATINGS

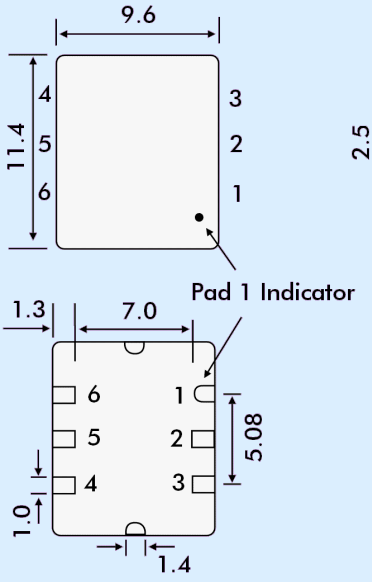
(Permanent damage may be caused if operated beyond these limits.)

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.

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**

OUTLINE & DIMENSIONS



Pad Connections HD_621	Pad Connections HD_622
1 Enable/Disable	1 Not connected
2 Not connected	2 Enable/Disable
3 Ground	3 Ground
4 Output	4 Output
5 Complimentary output	5 Complimentary output
6 Supply Voltage	6 Supply Voltage

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

PART NUMBERS

HDF62 oscillator part numbers are derived as follows:

Example: **3HDF621-A-250.000**

Supply Voltage
25 = 2.5VDC
3 = 3.3VDC
Series Designation
Package Style
621 or 622
Stability Code
(See table)
Frequency

EUROQUARTZ LIMITED Blacknell Lane CREWKERNE Somerset UK TA18 7HE
Tel: +44 (0)1460 230000 Fax: +44 (0)1460 230001 info@euroquartz.co.uk www.euroquartz.co.uk