EUROQUARTZ

HPK3261 PECL OSCILLATORS

3.2 x 2.5 x 1.0mm 6 pad SMD — 13.50MHz to 220.0MHz

DESCRIPTION

- **Femtosecond integrated phase jitter (200fs typical)**
- **Ultra-low phase noise -138dBc/Hz at 10kHz**
- **High performance with surprisingly low price**
- **Supply voltage 2.5 or 3.3 Volts**

SPECIFICATION

Frequency Range:	13.5MHz to 220.0MHz
Output Logic	Differential PECL square wave
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 ±5% or +3.3VDC ±10%
Output Voltage	
HIGH '1':	Vdd - 1.03V min., Vdd - 0.6V max.
LOW '0':	Vdd - 1.85V min., Vdd - 1.6V max. (RL = 50Ω to Vcc -2.0V)
Output Swing:	595mV min., 750mV typ., 930mV max.
Load:	50Ω into Vcc-2V or Thevenin equivalent. Terminating resistors required on all outputs.
Rise/Fall Times:	2.5V: 0.3nsec typ., 0.6nsec max. 3.3V: 0.2nsec typ., 0.4nsec max.
Duty Cycle:	50±5% (measured at 50% waveform)
Current Consumption:	30mA typical, 50mA maximum
Start-up Time:	5ms typ., 10ms max.
Integrated Phase Jitter:	0.2ps typical; 0.5ps maximum for 156.250MHz (12kHz to 20MHz)
Ageing:	±3ppm per year max., ±2ppm thereafter. At T amb +25°C
Packaging:	16mm tape, 8.0mm pitch. 180mm dia. reel, 1000 pieces per reel.

ENABLE/DISABLE (TRISTATE) FUNCTION

The Enable/Disable function may be on Pad 1 or Pad 2

HPK3261 = Enable/Disable control on Pad 1
HPK3262 = Enable/Disable control on Pad 2

NO CONNECTION	Differential and Complimentary outputs enabled.
DISABLE	Both outputs are disabled (high impedance) when Control Pad is taken below 0.45*Vcc referenced to Ground (threshold). Oscillator is always ON. Only the buffer stage is disabled.
ENABLE	Both outputs are enabled when Control Pad is taken above 0.45*Vcc referenced to Ground (threshold). Enable time 10ns +1 period of output frequency maximum.

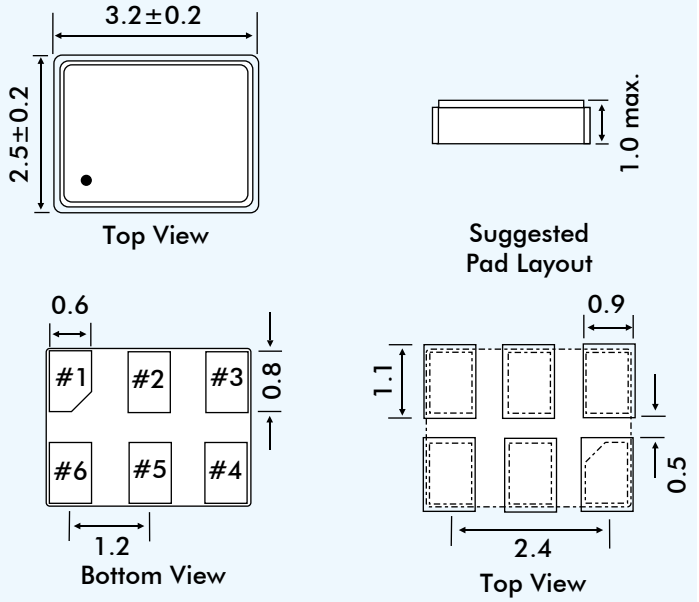
TYPICAL PHASE NOISE (62.5MHz)

Offset	10Hz	100Hz	1kHz	10kHz	100kHz	1MHz
dBc/Hz	-50	-82	-116	-138	-144	-149

TYPICAL PHASE NOISE (156.250MHz)

Offset	10Hz	100Hz	1kHz	10kHz	100kHz	1MHz
dBc/Hz	-50	-80	-115	-135	-142	-147

OUTLINE & DIMENSIONS



Pad Connections

1	OE	4	Output
2	No connection	5	Complimentary Output
3	Ground	6	Supply Voltage

Note: HPK3261 shown above; HPK3262 has Pad 2 = Enable/Disable and Pad 1 No Connection.

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**

* Custom frequency stability is available; e.g. for +/-20 ppm over -10 to +60°C use 'C' for custom, I.e. C20.
Storage Temperature: -55°C to +150°C

PART NUMBERS

HPK5361 oscillator part numbers are derived as follows:
Example: 25HPK3261-A-155.520

25 HPK3261 - A - 155.520

Supply Voltage
25 = 2.5V
3 = 3.3V
Series Designation
OE on Pad 1 = HPK3261
OE on Pad 2 = HPK3262
Frequency Stability Code
See Table (A~F)
Frequency

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Issue 1