

DESCRIPTION

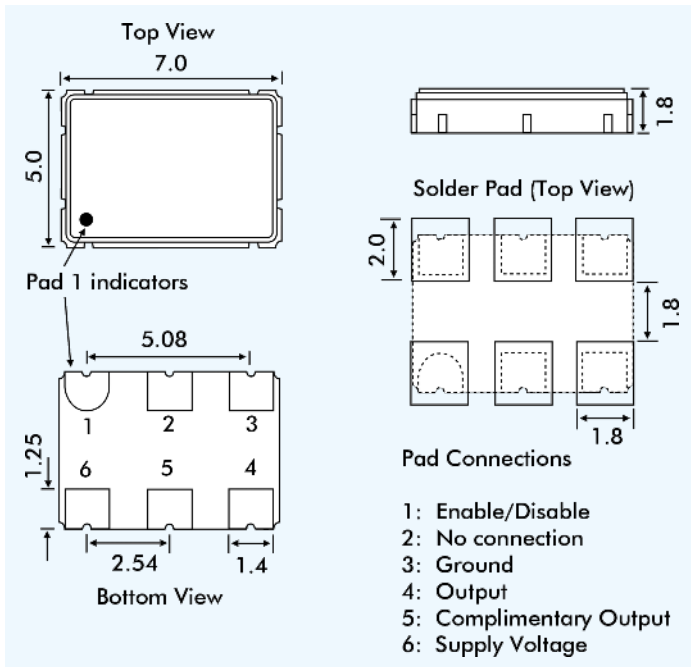
- Femtosecond integrated phase jitter (200fs typ 12kHz-20MHz)
- Ultra-low phase noise -138dBc/Hz at 10kHz, -144dBc/Hz @100kHz
- Superior performance with surprisingly low price
- Supply voltage 2.5 or 3.3 Volts



SPECIFICATION

| | |
|------------------------|---|
| Frequency Range: | 13.5MHz to 200.0MHz |
| Output Logic: | Differential LVDS 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 or +3.3VDC ±5% |
| Output Voltage | |
| High '1': | 1.4V typ., 1.6V max., RL = 100Ω |
| Low '0': | 0.9V min., 1.1V typ., RL = 100Ω |
| Output Swing: | 250mV minimum, 350mV typical 450mV max., RL = 100Ω |
| Load: | 100Ω between outputs |
| Rise/Fall Times: | 0.2ns typical, 0.4ns typical. (from 20% Vdd to 80% Vdd) |
| Duty Cycle: | 50±5% (measured at 50% waveform) |
| Current Consumption: | 16mA typical, 27mA maximum |
| Enable/Disable (Pad 1) | |
| Enable: | No connection or min. 70% Vdd is applied to pad 1. |
| Disable: | 30% Vdd max. applied to pad 1. Output: internal pull-up. Oscillation enable time is 2ms max. |
| Start-up Time: | 5ms typ., 10ms max. |
| Phase Jitter (RMS): | 200fs typical (12kHz to 20MHz integrated) |
| Ageing: | ±3ppm per year max., ±2ppm thereafter. At T amb +25°C |

OUTLINE & DIMENSIONS



ENVIRONMENTAL PERFORMANCE SPECIFICATION

| | |
|-----------------------------|---|
| 'Green' Requirements: | RoHS 6/6 (2002-95/EC) and WEEE (2002/96/EC) Compliant |
| MSL Level: | Level 1 per IPC/JEDEC J-STD-020D.1 |
| Storage Temperature Range: | -55°C to +125°C |
| Humidity: | 85% RH, 85°, 48 hours |
| Hermetic Seal: | Leak rate 2*10 ⁻⁸ Atm-cm ³ /sec. max. |
| Solderability: | MIL-STD-202F Method 208E |
| Reflow: | 260°C for 10sec. max., 2 times max. |
| Vibration: | MIL-STD-202F Method 204, 35g 50 to 2000Hz |
| Shock: | MIL-STD-202F Method 213B test condition E, 1000g, 1/2 sine |
| ESD Protection: | 2kV max. Human body model |
| Contact pad surface finish: | Gold (Au) (0.3~1.0µm) on Nickel (Ni) (1.27~8.89µm) |
| Weight per unit: | 180mg typical |

ABSOLUTE MAXIMUM RATINGS

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

| | |
|-----------------|--|
| Supply Voltage: | V _{ss} -0.5V min., 5.0V max. |
| Input Voltage: | V _{ss} -0.5V min., V _{dd} +0.5V max. |
| Input Voltage: | V _{ss} -0.5V min., V _{dd} +0.5V max. |

TYPICAL PHASE NOISE (dBc/Hz)

| Offset | 10Hz | 100Hz | 1kHz | 10kHz | 100kHz | 1MHz | 10MHz |
|-----------|------|-------|------|-------|--------|------|-------|
| 62.5MHz | -50 | -82 | -116 | -138 | -144 | -149 | -155 |
| 156.25MHz | -50 | -80 | -115 | -135 | -142 | -147 | -152 |

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 |

N.B. Other stability values are available on request.
Indicate by replacing A-F stab code with C or I, followed by value
E.g. C20 = ±20ppm over -10C +70C

PART NUMBERS

HDK5761 oscillator part numbers are derived as follows:
Example: 25HDK5761-A-155.520

