Dynamic Engineers Inc.
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XO-5-7-3.3V-LVCMOS-xMHz
LVCMOS10 to 245MHz Clock Oscillator

Features and Benefits

Frequency Range 10 MHz to 245 MHz
Output Frequency to six decimal places
Output Frequency Examples: 12.688375 MHz ; 125.345678 MHz
7 mm x 5.0 mm x 1.80 mm ceramic SMD 6-pad
±50 ppm total stability over -40°C to 85°C
1 to 1.5 pico-second phase jitter (12KHz to 20 MHz)
LVCMOS output
3.3V supply

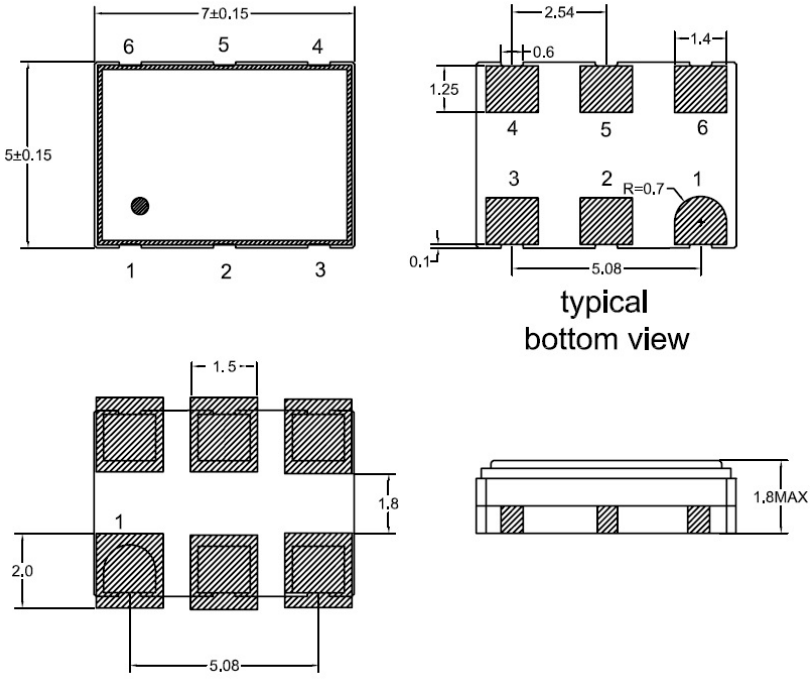
Typical Applications

GbE Ethernet, SONET, Fibre channel, FPGA, and A/D clock reference devices

Description

A new generation of low jitter / low power clock oscillators has been developed using the latest low noise integrated circuit topologies.

Mechanical Drawing & Pin Connections



Product	XO	VCXO
Pad 1	High Enable	Voltage Control
Pad 2	No Connection	High Enable
Pad 3	Ground	
Pad 4	CMOS: Output LVPECL, LVDS: Differential Output	
Pad 5	CMOS: No connection LVPECL, LVDS: Complementary Output	
Pad 6	Supply voltage	

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Specifications

General Specifications: at Ta=+25°C,		
Output Logic Type	LVCMOS	
Frequency Range	10 ~ 245 MHz	
Load	15pF	
Power Supply Voltage (V_{DD})	V_{DD} = +3.3V D.C. ± 5%	
Output "High" Voltage; V_{OH}	Voltage (V_{OD})	90% V_{DD}
Output "Low" Voltage; V_{OL}	Voltage (V_{OD})	10% V_{DD}
Frequency Stability	±50 ppm over -40°C to 85°C Over all conditions	
Duty Cycle	50% ± 5%	
Rise Time (Tr)/Fall Time (Tf) (10% V_{DD} – 90% V_{DD})	1.5 nS.typ. 3.0 nS. max.	
Current Consumption V_{DD} = +3.3V All values are typical and over operating temperatures.	10 MHz: 17 mA 50 MHz: 20 mA 100 MHz: 24 mA 150 MHz:28 mA 200 MHz:33 mA 250 MHz: 37 mA	
Current with Output Disabled	16 mA typical	
Start-up Time	10 ms max.	
Aging	±2 ppm max. first year at 25°C; ±10 ppm max. over 10 years	
Output Enable Function		
OE Pad Input **XOs: Pad 1** **VCXOs: Pad 2**	70% of V_{DD}minimum or no connection to enable output. LVCMOS/LVTTL level. 30% of V_{DD}maximum to disable output (high impedance). LVCMOS/LVTTL level.	
Output Enable Time	200 ns max.	
Output Disable Time	50 ns max.	
Integrated Phase Jitter		
Phase Jitter, rms (12 KHz to 20 MHz)	1.0 pS typical; 1.5 pS max.	
Phase Jitter, rms (1.875 MHz to 20 MHz)	< 100 fs	
Environmental Performance Specifications		
ROHS Status	RoHS compliant, Pb (lead) free in accordance with EU Directive 2002/95/EC 6/6 (2002/95/EC) and WEEE (2002/96/EC)	
Storage Temp. Range	-55°C to 150°C	
Humidity	85% RH, 85°C, 48 hours	
Fine Leak / Gross Leak	MIL-Std-883, method 1014, condition A / MIL-Std-883, method 1014, condition C	
Solderability	MIL-STD-202F method 208E	
Reflow	260°C for 10 sec. 2X.	
Vibration	MIL-STD-202F method 204, 35G, 50 to 2000 Hz	
Shock	MIL-STD-202F method 213B, test condi. E, 1000GG ½ sine wave	
Resistance to Solvent	MIL-STD-202, method 215	
Temperature Cycling	MIL-STD-883, method 1010	
ESD Rating	>2000 V (per MIL-STD-883, method 3015)	

Ordering Options:

"x MHz " examples : 125.000000 MHz ; or 12.688375 MHz ; 1250.005600 MHz

Phase Noise Graphs

125 MHz CMOS output