

Dynamic Engineers Inc.

2550 Gray Falls Dr., Suite#128, Houston, TX, 77077 USA TEL: 1-281-870-8822 EMAIL:Sales@DynamicEng.com

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

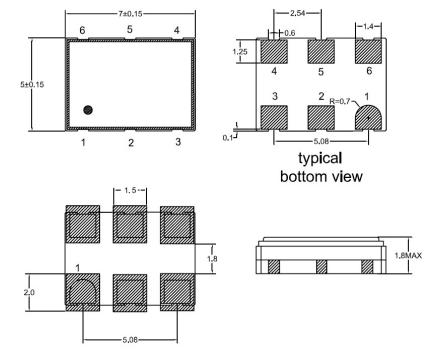
Description

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

XO-5-7-3.3V-LVCMOS-xMHz

LVCMOS10 to 245MHz Clock Oscillator

Mechanical Drawing & Pin Connections



Product	ХО	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

ocherar opcontoations	· at la=+	25°C			
General Specifications: at Ta=+25°C, Output Logic Type LVCMOS					
Frequency Range		10 ~ 245 MHz			
Load		15pF			
		$V_{DD} = +3.3V D.C. \pm 5\%$			
Power Supply Voltage (V _{DD})					
Output "High" Voltage;	V _{он}	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 Fund			
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 J	ittor		
Dhasa litter rms		ypical; 1.5 pS max.			
Phase Jitter, rms (12 KHz to 20 MHz)	1.0 pS ty	pical; 1.5 pS max.			
	1.0 pS ty < 100 fs	vpical; 1.5 pS max.			
(12 KHz to 20 MHz) Phase Jitter, rms		pical; 1.5 pS max. Environmental Performance		tions	
(12 KHz to 20 MHz) Phase Jitter, rms		Environmental Performance	Specifica in accorda	ance with EU Directive 2002/95/EC	
(12 KHz to 20 MHz) Phase Jitter, rms (1.875 MHz to 20 MHz)		Environmental Performance RoHS compliant, Pb (lead) free	Specifica in accorda	ance with EU Directive 2002/95/EC	
(12 KHz to 20 MHz) Phase Jitter, rms (1.875 MHz to 20 MHz) ROHS Status		Environmental Performance RoHS compliant, Pb (lead) free 6/6 (2002/95/EC) and WEEE (20	Specifica in accorda	ance with EU Directive 2002/95/EC	
(12 KHz to 20 MHz) Phase Jitter, rms (1.875 MHz to 20 MHz) ROHS Status Storage Temp. Range	< 100 fs	Environmental Performance RoHS compliant, Pb (lead) free 6/6 (2002/95/EC) and WEEE (20 -55°C to 150°C 85% RH, 85°C, 48 hours	Specifica in accorda 002/96/EC	ance with EU Directive 2002/95/EC	
(12 KHz to 20 MHz) Phase Jitter, rms (1.875 MHz to 20 MHz) ROHS Status Storage Temp. Range Humidity	< 100 fs	Environmental Performance RoHS compliant, Pb (lead) free 6/6 (2002/95/EC) and WEEE (20 -55°C to 150°C 85% RH, 85°C, 48 hours	Specifica in accorda 002/96/EC	ance with EU Directive 2002/95/EC	
(12 KHz to 20 MHz) Phase Jitter, rms (1.875 MHz to 20 MHz) ROHS Status Storage Temp. Range Humidity Fine Leak / Gross Leak	< 100 fs	Environmental Performance RoHS compliant, Pb (lead) free 6/6 (2002/95/EC) and WEEE (20 -55°C to 150°C 85% RH, 85°C, 48 hours MIL-Std-883, method 1014, con	Specifica in accorda 002/96/EC	ance with EU Directive 2002/95/EC	
(12 KHz to 20 MHz) Phase Jitter, rms (1.875 MHz to 20 MHz) ROHS Status Storage Temp. Range Humidity Fine Leak / Gross Leak Solderability	< 100 fs	Environmental Performance RoHS compliant, Pb (lead) free 6/6 (2002/95/EC) and WEEE (20 -55°C to 150°C 85% RH, 85°C, 48 hours MIL-Std-883, method 1014, con MIL-STD-202F method 208E 260°C for 10 sec. 2X.	Specifica in accorda 002/96/EC dition A / I	Ance with EU Directive 2002/95/EC	
(12 KHz to 20 MHz) Phase Jitter, rms (1.875 MHz to 20 MHz) ROHS Status Storage Temp. Range Humidity Fine Leak / Gross Leak Solderability Reflow	< 100 fs	Environmental Performance RoHS compliant, Pb (lead) free 6/6 (2002/95/EC) and WEEE (20 -55°C to 150°C 85% RH, 85°C, 48 hours MIL-Std-883, method 1014, con MIL-STD-202F method 208E	Specifica in accorda 002/96/EC dition A / I	Ance with EU Directive 2002/95/EC) MIL-Std-883, method 1014, condition C 000 Hz	
(12 KHz to 20 MHz) Phase Jitter, rms (1.875 MHz to 20 MHz) ROHS Status Storage Temp. Range Humidity Fine Leak / Gross Leak Solderability Reflow Vibration	< 100 fs	Environmental Performance RoHS compliant, Pb (lead) free 6/6 (2002/95/EC) and WEEE (20 -55°C to 150°C 85% RH, 85°C, 48 hours MIL-Std-883, method 1014, con MIL-STD-202F method 208E 260°C for 10 sec. 2X. MIL-STD-202F method 204, 350	Specifica in accorda 002/96/EC dition A / I	Ance with EU Directive 2002/95/EC) MIL-Std-883, method 1014, condition C 000 Hz	
(12 KHz to 20 MHz) Phase Jitter, rms (1.875 MHz to 20 MHz) ROHS Status Storage Temp. Range Humidity Fine Leak / Gross Leak Solderability Reflow Vibration Shock	< 100 fs	Environmental Performance RoHS compliant, Pb (lead) free 6/6 (2002/95/EC) and WEEE (20 -55°C to 150°C 85% RH, 85°C, 48 hours MIL-Std-883, method 1014, con MIL-STD-202F method 208E 260°C for 10 sec. 2X. MIL-STD-202F method 204, 350 MIL-STD-202F method 213B, te MIL-STD-202, method 215	Specifica in accorda 002/96/EC dition A / I	Ance with EU Directive 2002/95/EC) MIL-Std-883, method 1014, condition C 000 Hz	
(12 KHz to 20 MHz) Phase Jitter, rms (1.875 MHz to 20 MHz) ROHS Status Storage Temp. Range Humidity Fine Leak / Gross Leak Solderability Reflow Vibration Shock Resistance to Solvent	< 100 fs	Environmental Performance RoHS compliant, Pb (lead) free 6/6 (2002/95/EC) and WEEE (20 -55°C to 150°C 85% RH, 85°C, 48 hours MIL-Std-883, method 1014, con MIL-STD-202F method 208E 260°C for 10 sec. 2X. MIL-STD-202F method 204, 350 MIL-STD-202F method 213B, te	Specifica in accorda 002/96/EC dition A / I G, 50 to 20 est condi. I	Ance with EU Directive 2002/95/EC MIL-Std-883, method 1014, condition C 000 Hz E, 1000GG ½ sine wave	



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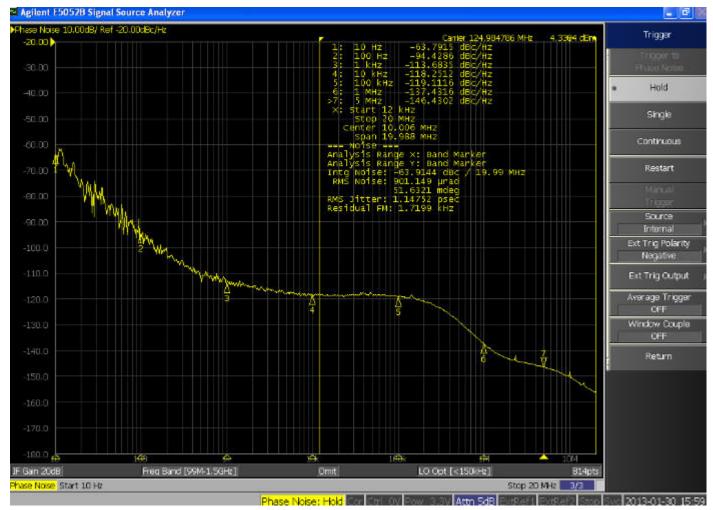
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Ordering Options:

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

Phase Noise Graphs

125 MHz CMOS output



Dynamic Engineers, Inc.

Dynamic Engineers reserves the right to make changes to the company datasheet(s) along with other information contained inside; such as data tables and graphs without notification to potential customers who may have earlier revisions in their possession.