## Dynamic Engineers Inc.

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

VCXO5300S-LPLV-xMHz LVPECL / LVDS20 to 200MHz Voltage-Controlled Crystal Oscillator

#### **Features and Benefits**

Frequency Range 20 MHz to 200 MHz (175 MHz for LVDS) 5.0 mm x 3.2 mm 6 pads ceramic SMD package ± 50 ppm total stability over -40°C to +85°C ± 25 ppm total stability over -20°C to +70°C available LVPECL / LVDS outputs 3.3V supply Tri-state enable / disable

Available tight symmetry (45 to 55%)

#### **Typical Applications**

WiMax/WLAN xDSL/VoIP, cable modem Set-top Box, HDTV

#### **Description**

A new series of voltage controlled oscillators with the latest tight symmetry topologies.

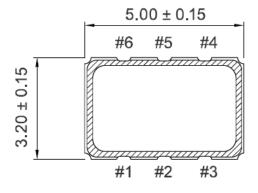
#### **Mechanical Drawing & Pin Connections**

Drawing No: MD160026-1

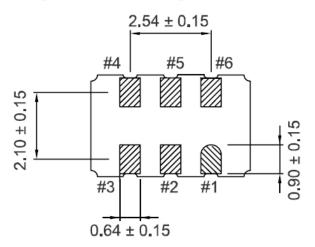
Unit: mm

1mm = 0.0394inch

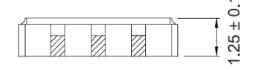
#### [TOP VIEW]



#### [BOTTOM VIEW]



#### [ SIDE VIEW 1



Pin#	Function	
1	Vcon	
2	Tri-State	
3	GND	
4	Output	
5	NC	
6	VDD	

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### **Specifications**

Dutput Logic Type	<b>General Specific</b>						
Frequency Range   20MHz   200 MHz   175 MHz   175 MHz	Output Logic Type		LVPECL		LVDS		
Prequency Range   20MHz   20 MHz   175 MHz	Parameter		3.3V		3.3V		
Standard Frequency							
Control Voltage Range							
Supply Current   20 MHz   ≤ Fo ≤ 200 MHz							
20 MHz ≤ Fo ≤ 200 MHz   3.135V   3.465V   3.135V   3.465V		Range	0.3V	3.0V	0.3V	3.0V	
20 MHz ≤ Fo ≤ 200 MHz   Supply Voltage Variation (V <sub>DD</sub> ) ±5%   3.465V   3.135V   3.465V   3.135V   3.465V			_	100 mA	-	75 mA	
Couput Level   Couput "High" Voltage; VoH   Couput "High" Voltage; VoL   Couput "High" Voltage; Vo				100 1117 (		7011171	
Output Level   Output "High" Voltage; VoH   Output "Low" Voltage; VoL   -   1.68V   0.9V   -		Variation	3 135V	3 465V	3 135V	3 465V	
Output "High" Voltage; VoH Output "Low" Voltage; VoL Tri-State (Input to Pin 2 or Pin 1)         -         1.68V         0.9V         -           Tri-State (Input to Pin 2 or Pin 1) Enable (High voltage or floating) Disable (Low voltage or GND)         2.31V         -         2.31V         -           Frequency Stability         ±50 ppm over -20°C to +70°C or -40°C to +85°C ±25 ppm over -20°C to +70°C         -         0.99V           RMS Phase Jitter           Fo< 100 MHz         -         1.0 pSec         -         1.0 pSec           100 MHz ≤ Fo ≤ 125 MHz 125 MHz ≤ Fo ≤ 150 MHz         -         0.7 pSec         -         0.7 pSec           150 MHz ≤ Fo ≤ 200 MHz         -         0.3 pSec         -         0.3 pSec           Phase Noise @ 122.88 MHz         100 Hz         -105 dBc/Hz           10 kHz         -128 dBc/Hz         -145 dBc/Hz           Absolute Pulling Range (APR)         ±50ppm min.           Rise Time (Tr)/Fall Time (Tf) (20% V <sub>DD</sub> – 80% V <sub>DD</sub> )         1.0 nS max           Start-up Time         3ms max.           Linearity         10% max.           Modulation Bandwidth (BW)         20 kHz min.           Input Impedance         5000 KΩ min.           Aging (first year at 25°C)         ±3 ppm max.			0.1001	0.1001	0.100 V	0.1001	
Output "Low" Voltage; Vol.         -         1.68V         0.9V         -           Tri-State (Input to Pin 2 or Pin 1)         2.31V         -         2.31V         -           Enable (High voltage or GND)         2.31V         -         0.99V         -         0.99V           Frequency Stability         ±50 ppm over -20°C to +70°C         0.99V         -         0.99V           Frequency Stability         ±50 ppm over -20°C to +70°C           RMS Phase Jitter         Fo< 100 MHz	•						
Tri-State (Input to Pin 2 or Pin 1)         Enable (High voltage or floating)         Disable (Low voltage or GND)       2.31V       -       0.99V       -       0.99V         Frequency Stability       ±50 ppm over -20°C to +70°C       or -40°C to +85°C         RMS Phase Jitter         Fo< 100 MHz       -       1.0 pSec       -       1.0 pSec         100 MHz ≤ Fo≤ 125 MHz       -       0.7 pSec       -       0.7 pSec         125 MHz ≤ Fo ≤ 150 MHz       -       0.5 pSec       -       0.5 pSec         150 MHz ≤ Fo ≤ 200 MHz       -       0.3 pSec       -       0.3 pSec         Phase Noise         @ 122.88 MHz       100 Hz       -105 dBc/Hz       -128 dBc/Hz         1 kHz       -128 dBc/Hz       -145 dBc/Hz         Absolute Pulling Range (APR)       ±50ppm min.         Rise Time (Tr)/Fall Time (Tf)         (20% V <sub>DD</sub> – 80% V <sub>DD</sub> )       3ms max.         Start-up Time       3ms max.         Linearity       10% max.         Modulation Bandwidth (BW)       20 kHz min.         Input Impedance       5000 KΩ min.         Aging (first year			2.275V	-		1.6V	
Enable (High voltage or floating)   Disable (Low voltage or GND)   -   0.99V   -   0.99V			-	1.68V	0.9V	-	
Disable (Low voltage or GND)   -   0.99V   -   0.99V							
Frequency Stability $±50 \text{ ppm over } -20^{\circ}\text{C to } +70^{\circ}\text{C or } -40^{\circ}\text{C to } +85^{\circ}\text{C}$ $±25 \text{ ppm over } -20^{\circ}\text{C to } +70^{\circ}\text{C}$ RMS Phase Jitter  Fo< 100 MHz Fo< 125 MHz Fo< 125 MHz Fo< 125 MHz Fo< 150 MHz Fo<			2.31V	-	2.31V	-	
#25 ppm over -20°C to +70°C  RMS Phase Jitter  Fo< 100 MHz ≤ Fo≤ 125 MHz 100 MHz ≤ Fo≤ 125 MHz 125 MHz ≤ Fo ≤ 150 MHz 150 MHz ≤ Fo ≤ 200 MHz 150 MHz ≤ Fo ≤ 200 MHz 150 MHz ≤ Fo ≤ 200 MHz 150 MHz 15	Disable (Low voltage or GND)		-		-	0.99V	
£25 ppm over -20°C to +70°C	Frequency Stab	ilitv			+85°C		
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	requestey otability		±25 ppm over -20°C to +70°C				
	RMS Phase Jitte						
125 MHz ≤ Fo ≤ 150 MHz 150 MHz ≤ Fo ≤ 200 MHz 150 MH					-		
150 MHz ≤ Fo ≤ 200 MHz  Phase Noise ② 122.88 MHz    100 Hz			-		-		
Phase Noise @ 122.88 MHz       100 Hz       -105 dBc/Hz         1 kHz       -128 dBc/Hz         10 kHz       -145 dBc/Hz         Absolute Pulling Range (APR)       ±50ppm min.         Rise Time (Tr)/Fall Time (Tf) (20% V <sub>DD</sub> - 80% V <sub>DD</sub> )       1.0 nS max         Start-up Time       3ms max.         Linearity       10% max.         Modulation Bandwidth (BW)       20 kHz min.         Input Impedance       5000 KΩ min.         Aging (first year at 25°C)       ±3 ppm max.					-		
Phase Noise       0 122.88 MHz       -128 dBc/Hz         Absolute Pulling Range (APR)       ±50ppm min.         Rise Time (Tr)/Fall Time (Tf)       1.0 nS max         (20% V <sub>DD</sub> – 80% V <sub>DD</sub> )       3ms max.         Start-up Time       3ms max.         Linearity       10% max.         Modulation Bandwidth (BW)       20 kHz min.         Input Impedance       5000 KΩ min.         Aging (first year at 25°C)       ±3 ppm max.	150 MHz		-		-	0.3 pSec	
@ 122.88 MHz          1 kHz	Phase Noise						
10 kHz							
Rise Time (Tr)/Fall Time (Tf) $(20\% \text{ V}_{DD} - 80\% \text{ V}_{DD})$ 1.0 nS maxStart-up Time3ms max.Linearity10% max.Modulation Bandwidth (BW)20 kHz min.Input Impedance5000 KΩ min.Aging (first year at 25°C) $\pm 3 \text{ ppm max}$ .	_						
(20% V <sub>DD</sub> - 80% V <sub>DD</sub> )   1.0 nS max     Start-up Time   3ms max.     Linearity   10% max.     Modulation Bandwidth (BW)   20 kHz min.     Input Impedance   5000 KΩ min.     Aging (first year at 25°C)   ±3 ppm max.			±50ppm min.				
Start-up Time   3ms max.	Rise Time (Tr)/Fall Time (Tf)						
Linearity         10% max.           Modulation Bandwidth (BW)         20 kHz min.           Input Impedance         5000 KΩ min.           Aging (first year at 25°C)         ±3 ppm max.							
Modulation Bandwidth (BW)       20 kHz min.         Input Impedance       5000 KΩ min.         Aging (first year at 25°C)       ±3 ppm max.							
Input Impedance $5000 \text{ K}\Omega \text{ min.}$ Aging (first year at 25°C) $\pm 3 \text{ ppm max.}$							
Aging (first year at 25°C) ±3 ppm max.	,						
Storage Temp. Range -55°C to +125°C							
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Stability vs. Temperature Range Availability						
	Temperature Range					
Stability in ppm	-20°C to +70°C	-40°C to +85°C				
±50	Available	Available				
±25	Available	Not Available				

Other customized specifications may be available. Please contact Dynamic Engineers, Inc. for further details.