



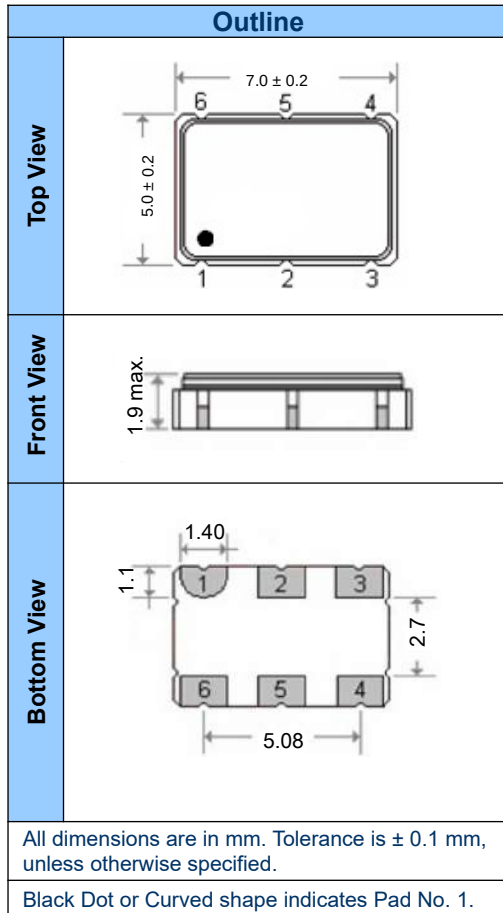
# SMD Crystal Oscillator - LVDS

## XO 0590

### Features

- Ceramic Package
- LVDS Output
- Low Jitter
- Superior Phase Noise

### Mechanical Specifications



Parameters	Specifications
Frequency Range	15 MHz ~ 240 MHz
Supply Voltage, V <sub>dd</sub>	3.3 V ± 10% (code: 3) 2.5 V ± 05% (code: 2) 1.8 V ± 05% (code: 1)
Current Consumption	35 mA (max.)
Output Waveform	LVDS
Load	100 Ohms between Output and Complimentary Output
Output High Level	1.40 V (typ.), 1.60 Volts (max.)
Output Low Level	1.1 V (typ.), 0.90 Volts (min.)
Output Voltage Swing	250 mV ~ 450 mV
Output Symmetry	45% to 55%
Rise/ Fall Time	0.6 ns (max.) [20% to 80% of waveform swing]
Integrated RMS Phase Jitter	0.5 ps (typ.) [12 KHz to 20 MHz]
Frequency Stability	Select from Table 1
Operating Temperature Range (OTR)	Select from Table 1
V Disable	0.3 V <sub>dd</sub> (max.)
V Enable	0.7 V <sub>dd</sub> (min.)
Output Enable Time	10 ms (max.)
Output Disable Time	0.2 μs (max.)
Disable Current	10 μA (max.)
Start-up Time	10 ms (max.)
Phase Noise @ 156.25 MHz	-140 dBc/ Hz (typical) @ 1 kHz
Aging @ 25°C	± 3 ppm (max.) for first year and ± 2 ppm (max.) per year, thereafter
Storage Temperature Range	-55°C to +125°C

### Pad Configuration

Pad	Description
1	Output Enable
2	No Connection
3	Ground
4	Output
5	Complementary Output
6	Supply Voltage

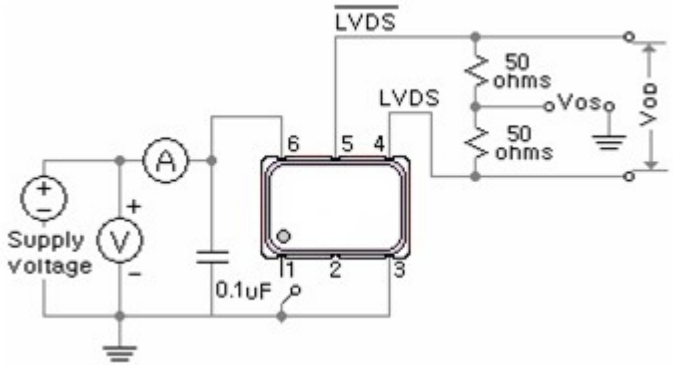
**Table 1**

OTR Code	Stability Codes			
	F	G	H	M
	Frequency Stability			
	±20 ppm	±25 ppm	±30 ppm	±50 ppm
F	Operating Temperature Range	0°C to +70°C		
C		-20°C to +70°C		
G		-30°C to +80°C		
I		-40°C to +85°C		
J5		-40°C to +105°C		

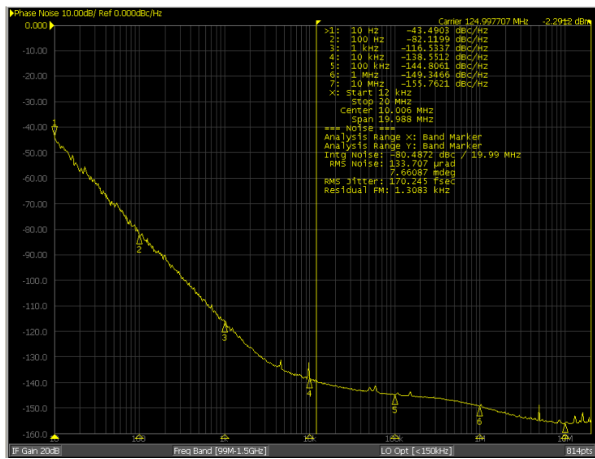
Denotes Available     Denotes not Available

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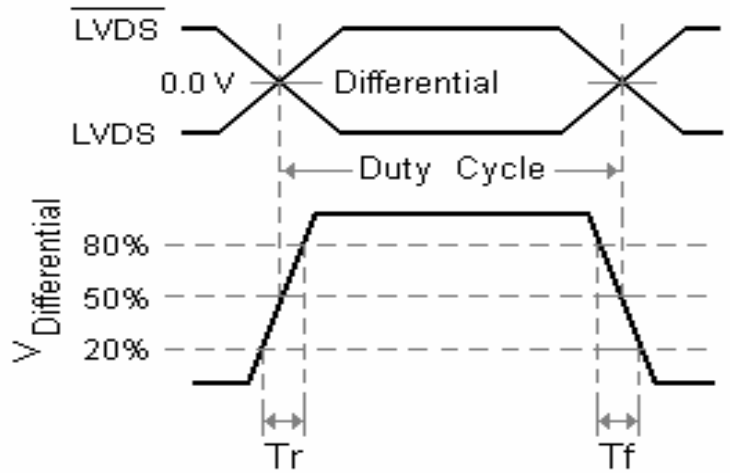
## TEST CIRCUIT



## Typical Phase Noise and Jitter Response



## LVDS Output WaveForm



## Ordering Information

### Example

XO 0590 I G 3 L 125M000000

Series

Freq. 125 MHz

OTR: -40°C to +85°C

Output: LVDS

Stability: ±25 ppm

Supply Voltage: 3.3 V

Specifications subject to change without notice

Date of Issue: 23<sup>rd</sup> November 2024

Note: Not all combination of options are available. Other specifications may be available upon request.

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REVISION 02

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Andhra Electronics Pvt. Ltd.

Plot no. 34 & 35, IDA,  
 Kakinada-533 005  
 Andhra Pradesh, India  
 URL: [www.andhraelec.com](http://www.andhraelec.com)

Phone: +91 884 234 2203  
 Fax: +91 884 234 1145  
 e-mail: [info@andhraelec.com](mailto:info@andhraelec.com)