



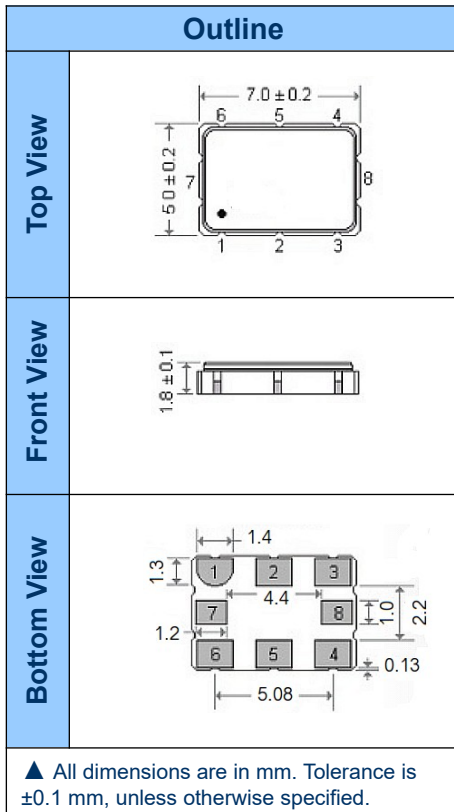
# SMD Voltage Controlled Crystal Oscillator

## VCXO 0960

### Features

- Ultra-Low Jitter
- LVPECL Output
- RoHS Compliant

### Mechanical Specifications



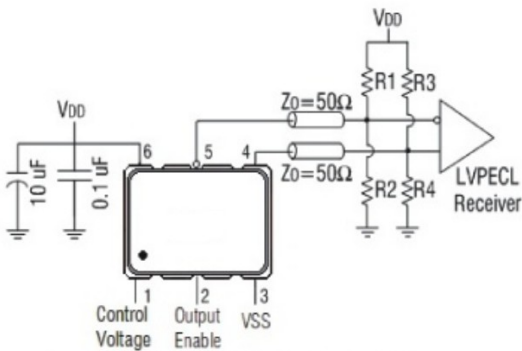
### Pad Configuration:

| Pad | Description          |
|-----|----------------------|
| 1   | Control Voltage      |
| 2   | Output Enable        |
| 3   | Ground               |
| 4   | Output               |
| 5   | Complimentary Output |
| 6   | Supply Voltage       |
| 7   | No Connection        |
| 8   | No Connection        |

| Parameter                         | Specifications                      |                 |
|-----------------------------------|-------------------------------------|-----------------|
| Frequency Range                   | 20 MHz ~ 2100 MHz                   |                 |
| Output Waveform                   | LVPECL                              |                 |
| Load                              | 50 Ω into $V_{dd}-2 V$              |                 |
| Output High Level                 | <b>Min.</b>                         | <b>Max.</b>     |
|                                   | $V_{dd}-1.165 V$                    | $V_{dd}-0.8 V$  |
| Output Low Level                  | <b>Min.</b>                         | <b>Max.</b>     |
|                                   | $V_{dd}-2.0 V$                      | $V_{dd}-1.55 V$ |
| Duty Cycle                        | 50% ± 5%                            |                 |
| Rise/ Fall Time                   | 0.5 ns (max.) [20% to 80% Waveform] |                 |
| Supply Voltage, $V_{dd}$          | 2.5 V ± 10% (Code: 2)               |                 |
|                                   | 3.3 V ± 10% (Code: 3)               |                 |
| Current Consumption               | 120 mA (max.)                       |                 |
| Current with Output Disabled      | 100 mA (typ.)                       |                 |
| V Disable                         | 0.2 $V_{dd}$ (max.)                 |                 |
| V Enable                          | 0.8 $V_{dd}$ (min.)                 |                 |
| Enable Time                       | 2.5 ms (max.)                       |                 |
| Disable Time                      | 10 μs (max.)                        |                 |
| Start up Time                     | 5 ms (typ.); 10 ms (max.)           |                 |
| Operating Temperature Range (OTR) | Select from Table 1                 |                 |
| Frequency Stability               | Select from Table 1                 |                 |
| Control Voltage Range             | 1.25 V ± 1 V (for +2.5 V)           |                 |
|                                   | 1.65 V ± 1.35 V (for +3.3 V)        |                 |
| Frequency Pulling Range           | ± 50 ppm (min.)                     |                 |
| Transfer Function                 | Positive                            |                 |
| Linearity                         | 10% (max.)                          |                 |
| Input Impedance                   | 5 M Ω (typ.)                        |                 |
| Modulation Bandwidth              | 10 KHz (min.), measured at -3 dB    |                 |
| RMS Phase Jitter                  | 160 fs (typ.) [12 KHz ~ 20 MHz]     |                 |
| Aging @ 25°C                      | ± 3 ppm (max.) for First Year;      |                 |
|                                   | ± 2 ppm (max.) per Year, thereafter |                 |
| Storage Temperature Range         | -55°C to +150°C                     |                 |

# SMD Voltage Controlled Crystal Oscillator

## TEST CIRCUIT



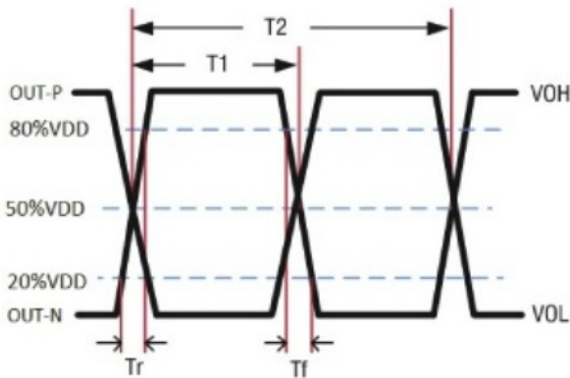
$V_{DD}=3.3V$ :  $R1=R3=127\Omega$ ;  $R2=R4=82.5\Omega$   
 $V_{DD}=2.5V$ :  $R1=R3=250\Omega$ ;  $R2=R4=62.5\Omega$

Table 1

| OTR Codes | Stability Codes             |                |  | F            | G            | M            |
|-----------|-----------------------------|----------------|--|--------------|--------------|--------------|
|           | Frequency Stability         |                |  | $\pm 20$ ppm | $\pm 25$ ppm | $\pm 50$ ppm |
| E         | Operating Temperature Range | -10°C to +70°C |  |              |              |              |
| C         |                             | -20°C to +70°C |  |              |              |              |
| I         |                             | -40°C to +85°C |  |              |              |              |

Denotes Available  Denotes not Available

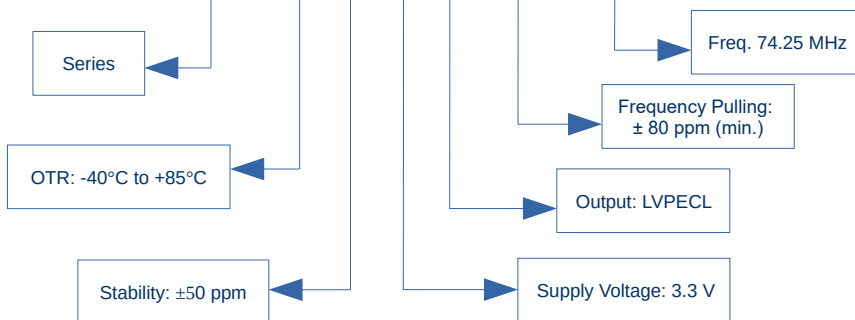
## Output Waveform



## Ordering Information

### Example

VCXO 0960 I M 3 P 080 074M250000



Specifications subject to change without prior notice

Rev. Date: 11<sup>th</sup> November 2021

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

Doc. No.: AE/DS/PS/043

ISSUE 01

REVISION 00

Page 2 of 2

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)