

# Oscillator (CMOS/LVPECL/LVDS/HCSL Output)

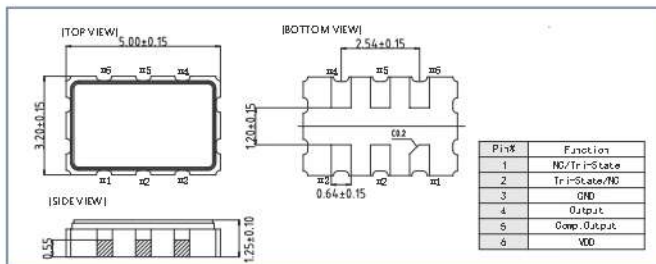
## 4.5 TLV5032

### 5.0 x 3.2 mm SMD LVPECL/LVDS Crystal Oscillator

#### FEATURES

- Industry Standard 5.0 x 3.2 x 1.25 mm hermetically sealed ceramic package
- Very low phase jitter: < 1 pS (0.6 pS, typ.) RMS
- Tri-state enable/disable
- Fast delivery

#### DIMENSIONS



#### TYPICAL APPLICATION

- High-Speed Gigabit Ethernet, Fiber Channel, Storage Area Network, SONET
- Enterprise Server, SAS/SATA
- Microprocessors/DSP/FPGA
- Broadband Access
- Smart Grid

#### ELECTRICAL SPECIFICATION

| Parameter                                    |                                      | LVPECL                                                                |        |        |        | LVDS   |        |        |        | Unit   |
|----------------------------------------------|--------------------------------------|-----------------------------------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
|                                              |                                      | 3.3V                                                                  |        | 2.5V   |        | 3.3V   |        | 2.5V   |        |        |
|                                              |                                      | Min.                                                                  | Max.   | Min.   | Max.   | Min.   | Max.   | Min.   | Max.   |        |
| Supply Voltage Variation (VDD)               |                                      | VDD-5%                                                                | VDD+5% | VDD-5% | VDD+5% | VDD-5% | VDD+5% | VDD-5% | VDD+5% | V      |
| Frequency Range                              |                                      | 10                                                                    | 1500   | 10     | 1500   | 10     | 1500   | 10     | 1500   | MHz    |
| Standard Frequency                           |                                      | 106.25, 125, 133.33, 150, 155.52, 156.25, 187.5, 212.5, 312.5, 622.08 |        |        |        |        |        |        |        |        |
| Supply Current                               | 10MHz≤F <sub>o</sub> <1500MHz        | —                                                                     | 50     | —      | 50     | —      | 50     | —      | 50     | mA     |
| Output Level                                 | Output High                          | 2.275                                                                 | —      | 1.475  | —      | —      | 1.6    | —      | 1.6    | V      |
|                                              | Output Low                           | —                                                                     | 1.68   | —      | 0.88   | 0.9    | —      | 0.9    | —      |        |
| Transition Time: Rise/Fall Time+             |                                      | —                                                                     | 1      | —      | 1      | —      | 1      | —      | 1      | nSec   |
| Startup Time                                 |                                      | —                                                                     | 10     | —      | 10     | —      | 10     | —      | 10     | mSec   |
| Tri-State<br>(Input to Pin2 or Pin1)         | Enable<br>(High Voltage or Floating) | 2.31                                                                  | —      | 1.75   | —      | 2.31   | —      | 1.75   | —      | V      |
|                                              | Disable<br>(Low Voltage or GND)      | —                                                                     | 0.99   | —      | 0.75   | —      | 0.99   | —      | 0.75   |        |
| Aging (@25°C, 1st Year)                      |                                      | —                                                                     | ±3     | —      | ±3     | —      | ±3     | —      | ±3     | ppm    |
| Storage Temp. Range                          |                                      | -55                                                                   | 125    | -55    | 125    | -55    | 125    | -55    | 125    | °C     |
| Phase Noise<br>@ 156.25 MHz                  | 100 Hz                               | -85                                                                   |        | -85    |        | -85    |        | -85    |        | dBc/Hz |
|                                              | 1 kHz                                | -105                                                                  |        | -105   |        | -105   |        | -105   |        |        |
|                                              | 10 kHz                               | -115                                                                  |        | -115   |        | -115   |        | -115   |        |        |
| RMS Phase Jitter(Intergrated 12 KHz ~ 20MHz) |                                      | —                                                                     | 1.2    | —      | 1.2    | —      | 1.2    | —      | 1.2    | pSec   |

+ Transition times are measured between 20% and 80% of VDD.

#### FREQ. STABILITY vs. TEMP. RANGE

| Temp.(°C) | ppm | ±25 | ±50 |
|-----------|-----|-----|-----|
| -10 ~ +60 |     | ○   | ○   |
| -20 ~ +70 |     | ○   | ○   |
| -40 ~ +85 |     | ×   | ○   |

\*o: Available Δ: Condition X: Not available

\*Inclusive of calibration @ 25 °C, operating temperature range, input voltage variation, load variation, aging (1st year), shock, and vibration

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

Specifications subject to change without notice.