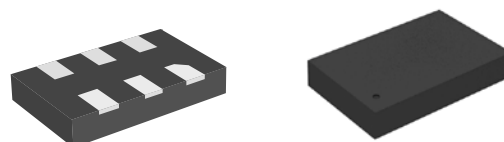


### PRELIMINARY DATA SHEET

#### Features

- Frequency Range: 24 to 125MHz
- Output Type: LVDS / LVPECL / HCSL
- Stability:  $\pm 50$  ppm
- Supply Voltage: 2.5V, 3.3V
- Power Consumption: 10.9 mA (2.5V LVDS)
- Standby Current:  $< 1$   $\mu$ A
- Standard Package: 5.0 x 3.2 x 0.85 mm  
7.0 x 5.0 x 0.85 mm
- Operating Temperature: 0 to 70 °C



This product is rated "Green", please contact factory for environmental compliancy information

#### Specification

| Parameter              | Symbol                            | Specifications             |           |           | Specifications             |           |           | Conditions                                                                                                  |
|------------------------|-----------------------------------|----------------------------|-----------|-----------|----------------------------|-----------|-----------|-------------------------------------------------------------------------------------------------------------|
|                        |                                   | LVDS                       | LVPECL    | HCSL      | LVDS                       | LVPECL    | HCSL      | LVDS: 100 Ω differential termination<br>LVPECL: 50 Ω termination to VDD-2V<br>HCSL: 50 Ω termination to GND |
| Supply Voltage         | VDD                               | 2.5 V                      |           |           | 3.3 V                      |           |           | Nominal                                                                                                     |
| Frequency Stability    | F <sub>STB</sub>                  | ±50 ppm                    |           |           | ±50 ppm                    |           |           | Total Frequency Stability*                                                                                  |
| Supply Current         | IDD                               | 10.9 mA                    | 27.6 mA   | 22 mA     | 11.3mA                     | 34.1mA    | 22.7mA    | 100MHz                                                                                                      |
| Quiescent Current      | I <sub>OE</sub>                   | 1 uA                       |           |           | 1 uA                       |           |           | Maximum; OE = GND                                                                                           |
| Input LOW / HIGH level | V <sub>IL</sub> / V <sub>IH</sub> | 0.3VDD (max) / 0.7VDD(min) |           |           | 0.3VDD (max) / 0.7VDD(min) |           |           | At OE pin                                                                                                   |
| Rise / Fall Time       | T <sub>R</sub> / T <sub>F</sub>   | 500/710ps                  | 620/420ps | 580/390ps | 450/470ps                  | 430/400ps | 420/380ps | Maximum; 20/80% of V <sub>A</sub> ; Output load (CL) = 2pF                                                  |
| Amplitude              | V <sub>A</sub>                    | 0.35V                      | 0.71V     | 0.70V     | 0.35V                      | 0.79V     | 0.70V     | Single Ended output swing (Pk-Pk)                                                                           |
| Mid Level (offset)     | V <sub>M</sub>                    | 1.2 V                      | 1.1V      | 0.35V     | 1.2 V                      | 2 V       | 0.35V     |                                                                                                             |
| Symmetry               | SYM                               | 45 / 55%                   |           |           | 45 / 55%                   |           |           | Worst case                                                                                                  |
| Start-up time          | T <sub>ST</sub>                   | 400 us                     |           |           | 400 us                     |           |           | Output valid time after VDD meets the specified range & OE transition                                       |
| Period Jitter          | PJ <sub>RMS</sub>                 | 3.6 ps                     | 2.9 ps    | 2.5 ps    | 2.9 ps                     | 3 ps      | 2.6 ps    | 100MHz                                                                                                      |
| Cycle to Cycle Jitter  | CCJ <sub>Max</sub>                | 33 ps                      | 22 ps     | 19 ps     | 27 ps                      | 29 ps     | 24 ps     | 100MHz; measured over 12k cycles                                                                            |
| Phase Jitter           | ϕJ                                | 1.0 ps                     |           |           | 1.0 ps                     |           |           | 12k to 20MHz (nominal)                                                                                      |
| Output Frequency       | F <sub>OUT</sub>                  | Standard Frequencies:      |           |           |                            |           |           |                                                                                                             |
|                        |                                   | 25                         | 33.333    | 40        | 50                         | 62.5      | 66.66     | 100                                                                                                         |

Note: Above specifications are typical at room temperature (25°C) unless otherwise specified.

\* Inclusive of initial frequency accuracy, operating temperature range, supply variation, load variation, 3 times solder reflow, shock, vibration and 10 years aging at 25°C.

#### Package Outline and Dimensions

#### Typical PCB Land Pattern

|                                                                                                         |                                                                   |
|---------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| <p>7.0 x 5.0 (mm)</p> <p>6L SMD<br/>7.0 x 5.0mm</p> <p>Top View</p> <p>Bottom View</p> <p>Side View</p> | <p>OE</p> <p>N/C</p> <p>GND</p> <p>VDD</p> <p>OUTB</p> <p>OUT</p> |
| <p>5.0 x 3.2 (mm)</p> <p>6L SMD<br/>5.0 x 3.2mm</p> <p>Top View</p> <p>Bottom View</p> <p>Side View</p> | <p>OE</p> <p>N/C</p> <p>GND</p> <p>VDD</p> <p>OUTB</p> <p>OUT</p> |

## Absolute Maximum Ratings

Stresses beyond those listed under *Absolute Maximum Ratings* may cause permanent damage to the device. These ratings are stress specifications only. Functional operation of product at these or under any condition beyond those listed in the operating specifications is not implied. Exposure to absolute maximum rated conditions may affect product reliability.

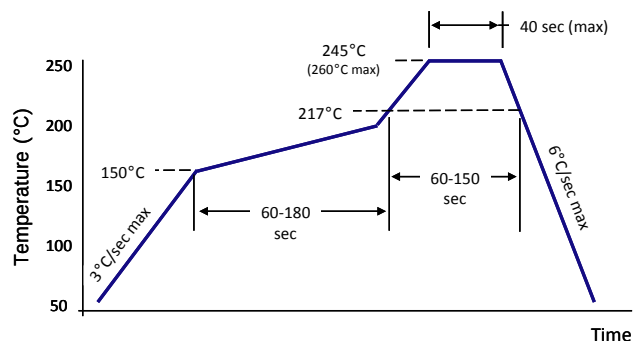
| Item                | Maximum Absolute Rating |
|---------------------|-------------------------|
| VDD                 | 4.6V                    |
| OE                  | -0.5V to VDD + 0.5V     |
| OUT / OUTB          | -0.5V to VDD + 0.5V     |
| Storage Temperature | -65°C to 150°C          |

## Pin Descriptions

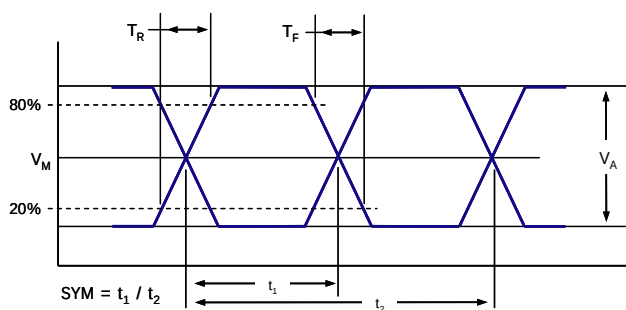
| Pin # | Name              | Description                         |
|-------|-------------------|-------------------------------------|
| 1     | OE <sup>1</sup>   | Output enable (0 = Output Disabled) |
| 2     | N/C               | Do not connect                      |
| 3     | GND               | Ground                              |
| 4     | OUT <sup>2</sup>  | Positive Output                     |
| 5     | OUTB <sup>2</sup> | Negative Output                     |
| 6     | VDD               | Power                               |

1. Pulled high internally  
2. Weak pull down to GND

## Solder Reflow Profile



## Output Waveform



## Ordering Information

|                                 |                    |                  |                                                |                                  |   |   |
|---------------------------------|--------------------|------------------|------------------------------------------------|----------------------------------|---|---|
| 3 L G 1                         | 4                  | B                | 22.5792<br>125.000                             | CTG                              | C | 8 |
| <b>Output</b>                   | <b>Voltage</b>     | <b>Frequency</b> | <b>Package</b>                                 | <b>Shipping</b>                  |   |   |
| 2: HCSL<br>3: LVPECL<br>4: LVDS | B: 3.3V<br>C: 2.5V | 24 to 125MHz*    | CUG: 7.0 x 5.0 x 0.85<br>CTG: 5.0 x 3.2 x 0.85 | Blank: Tubes<br>8: Tape and Reel |   |   |

\* See frequency table or contact IDT

| Package<br>Suffix | Minimum Order Quantity (MOQ) |                 | Factory Order Increment (FOI) |                 |
|-------------------|------------------------------|-----------------|-------------------------------|-----------------|
|                   | T & R                        | Bulk            | T & R                         | Bulk            |
| CUG               | 2500                         | 1250 (25 Tubes) | 2500                          | 1250 (25 Tubes) |
| CTG               | 2500                         | 1190 (17 Tubes) | 2500                          | 1190 (17 Tubes) |



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