



# LITE-ON TECHNOLOGY CORPORATION

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## DESCRIPTION

The LTDL-RA25A-T is a optical data link interface. The LTDL-RA25A-T consists of an optical sensor with an I / V amplifier, a Schmitt trigger, and a TTL output interface operating at data rates between 100K baud and 25 M baud.

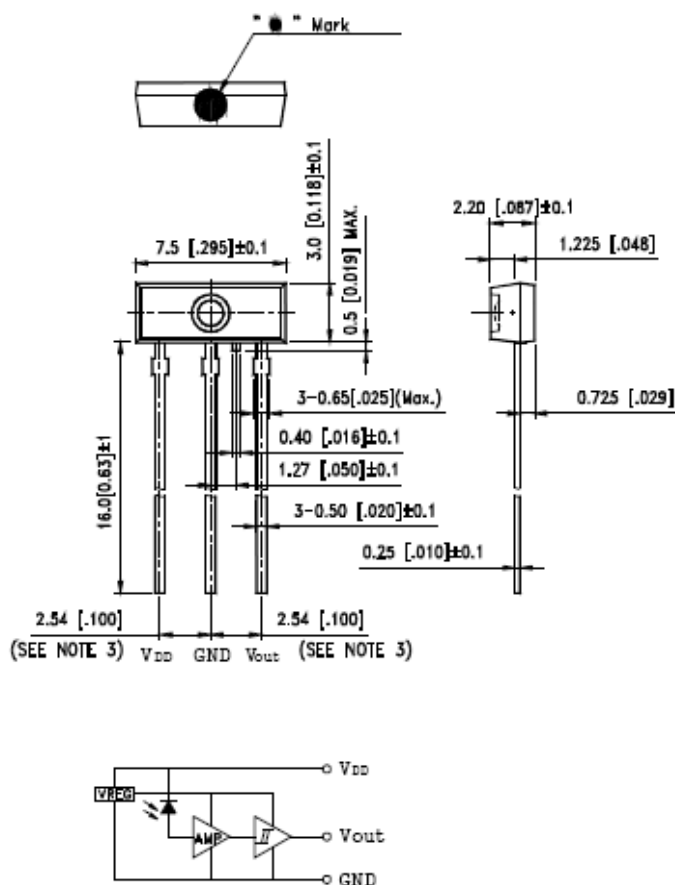
## FEATURES

- \* High PD sensitivity optimized for red light ( $\lambda=650\text{nm}$ )
- \* Data Rates between 100Kbps and 25 Mbps
- \* Low power consumption for extended battery life.
- \* Built-in threshold control for improved noise margin

## APPLICATIONS

- \* Digital Optical Data-Link
- \* Dolby AC-3 Digital Audio Interface

## PACKAGE DIMENSIONS



### NOTES:

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.15\text{mm}$  (.006") unless otherwise noted.
3. Lead spacing is measured where the leads emerge from the package.
4. Mark color: Purple



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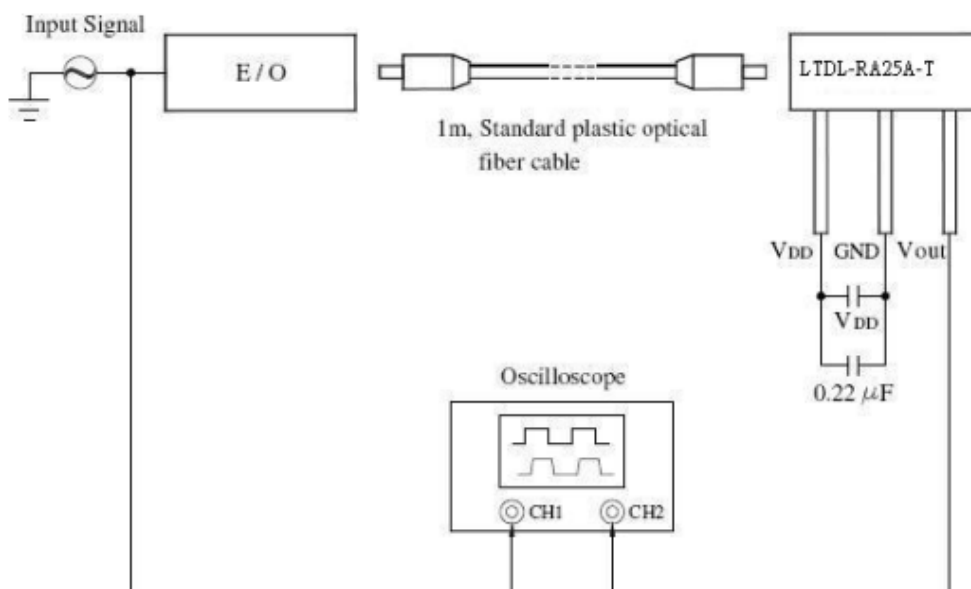
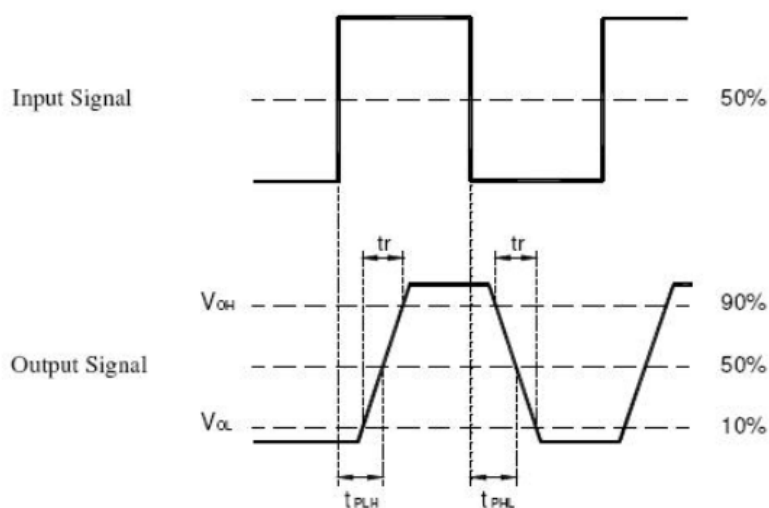
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## ABSOLUTE MAXIMUM RATINGS AT TA=25°C

| PARAMETER                                              | MAXIMUM RATING       | UNIT |
|--------------------------------------------------------|----------------------|------|
| Supply Voltage (V <sub>DD</sub> )                      | 5.25                 | V    |
| Output Voltage (V <sub>O</sub> )                       | V <sub>DD</sub> +0.3 | V    |
| Operating Temperature Range                            | -20°C to + 70°C      |      |
| Storage Temperature Range                              | -30°C to + 70°C      |      |
| Lead Soldering Temperature<br>[1.6mm(.063") From Body] | 260°C ≤ 5 Seconds    |      |

## ELECTRICAL OPTICAL CHARACTERISTICS AT TA=25°C

| PARAMETER                        | SYMBOL            | MIN.  | TYP. | MAX. | UNIT | TEST CONDITION                         |
|----------------------------------|-------------------|-------|------|------|------|----------------------------------------|
| Data Rate                        | T <sub>s</sub>    | 100 K | -    | 25   | Mbps | NRZ signal                             |
| Operating Voltage                | V <sub>DD</sub>   | 2.75  | -    | 5.25 | V    |                                        |
| Peak Emission Wavelength         | λ <sub>Peak</sub> | 630   | 650  | 670  | nm   |                                        |
| Input Sensitivity                | P <sub>i</sub>    | -27   | -    | -14  | dBm  |                                        |
| Dissipation current              | I <sub>DD</sub>   | -     | -    | 10   | mA   |                                        |
| High level output voltage        | V <sub>OH</sub>   | 2.1   | 2.5  | -    | V    | Dc Light ,<br>I <sub>OH</sub> = -20 μA |
| Low level output voltage         | V <sub>OL</sub>   | -     | 0.2  | 0.4  | V    | Dark , V <sub>OL</sub> = 0.6mA         |
| “Low→High”propagation delay time | t <sub>PLH</sub>  | -     | -    | 100  | ns   | *1                                     |
| “High→Low”propagation delay time | t <sub>PHL</sub>  | -     | -    | 100  | ns   |                                        |
| Pulse width distortion           | Δt <sub>w</sub>   | -25   |      | +25  | ns   |                                        |
| Jitter                           | Δt <sub>j</sub>   | -     | -    | 10   | ns   | *2                                     |
| Rise Time                        | t <sub>r</sub>    | -     | 10   | 20   | ns   | *1                                     |
| Fall Time                        | t <sub>f</sub>    | -     | 10   | 20   | ns   | *1                                     |

**Setup of Measuring System**

**\*1 Rise and Fall Time and Propagation Delays**


$$\text{Pulse width Distortion} = \Delta t_w = t_{PHL} - t_{PLH}$$

**\*2 Jitter**
