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## NTE3001 Light Emitting Diode Miniature, Diffused Red

**Description:**

The NTE3001 is a diffused Gallium Arsenide Phosphide diode mounted in a two lead epoxy package with a red diffused lens. On forward bias, this device emits a spectrally narrow band of visible light which peaks at 660nm.

The NTE3001 is intended for high volume indicator light applications where low cost, high reliability, and top performance are required. Major usage is in applications such as diagnostic lights on printed circuit boards and panel lights. This device can be used to displace subminiature lamps as small as T3/4 size.

**Features:**

- Low Cost
- Bright
- Compatible with Integrated Circuits
- Long Life, Rugged
- Small Size: T-3/4
- Easily Assembled in Arrays

**Absolute Maximum Ratings:**

|   |                                    |
|---|------------------------------------|
| Power Dissipation ( $T_A = +25^\circ\text{C}$ ) .....       | 80mW                               |
| Derate linearly from $25^\circ\text{C}$ .....               | 1.6mW/ $^\circ\text{C}$            |
| Forward Current   |                                    |
| Continuous .....  | 40mA                               |
| Peak (1 $\mu\text{sec}$ pulse width, 0.3% duty cycle) ..... | 1.0A                               |
| Reverse Voltage .....                                       | 5.0V                               |
| Operating Temperature Range .....                           | $-55^\circ$ to $100^\circ\text{C}$ |
| Storage Temperature Range .....                             | $-55^\circ$ to $100^\circ\text{C}$ |
| Lead Temperature (During Soldering, 5sec max, Note 1) ..... | $+230^\circ\text{C}$               |

**Typical Thermal Characteristics:**

|   |                                |
|---|--------------------------------|
| Wavelength Temperature Coefficient (Case Temperature) ..... | 0.3nm/ $^\circ\text{C}$        |
| Forward Voltage Temperature Coefficient .....               | $-2.0\text{mV}/^\circ\text{C}$ |

Note 1. The leads of the device were immersed in molten solder at  $+230^\circ\text{C}$  to a point 1/16 inch from the body of the device with a dwell time of 5 seconds.

## Electro-Optical Characteristics

| Parameter                | Test Conditions                        | Min | Typ  | Max | Unit    |
|--------------------------|--|-----|------|-----|---------|
| Luminous Intensity       | $I_F = 20\text{mA}$ , Note 2, Note 4   | 0.4 | 1.0  | –   | mcd     |
| Peak Emission Wavelength | $I_F = 20\text{mA}$                    | –   | 660  | –   | nm      |
| Spectral Line Halfwidth  | $I_F = 20\text{mA}$                    | –   | 20   | –   | nm      |
| Forward Voltage          | $I_F = 20\text{mA}$                    | –   | 1.65 | 2.0 | V       |
| Capacitance              | $V = 0$                                | –   | 80   | –   | pF      |
| Rise and Fall Time       | $50\Omega$ system, $I_F = 20\text{mA}$ | –   | 50   | –   | ns      |
| Reverse Current          | $V_R = 3.0\text{V}$                    | –   | 5.0  | –   | nA      |
| View Angle               | Between 50% points                     | –   | 80   | –   | degrees |

Note 2. As measured with a Photo Research Corp. "SPECTRA" Microcandela Meter (Model IV-D)

Note 3. The axis of spatial distribution are typically within a  $10^\circ$  cone with reference to the central axis of the device.

Note 4. Luminous intensity guaranteed to a 2.5% AQL inspection plan.

