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## NTE3180, NTE3181, NTE3182 Rectangle Light Emitting Diode 12.7mm x 6.35mm

**Description:**

The NTE3180 (Super Bright Red), NTE3181 (Green) and NTE3182 (Yellow) are rectangular light sources designed for a variety of applications where a large bright source of light is required. These light bars are configured in dual-in-line packages. The NTE3180 utilize LED chips which are made from AlGaAs on a transparent GaP substrate. The NTE3181 utilize LED chips which are made from GaP on a transparent GaP substrate, white segment, green face. The NTE3182 utilize LED chips which are made from GaAsP on transparent GaP substrate.

**Features:**

- Low Power Requirement
- I.C Compatible
- Excellent On-Off Contrast
- Panel and Legend Mount Ready
- Suitable for Multiplex Operation
- Easy Mounting On P.C Board

**Absolute Maximum Ratings:** ( $T_A = +25^\circ\text{C}$  unless otherwise specified)

|   |                                    |
|---|------------------------------------|
| Power Dissipation, Per Chip, $P_D$  |                                    |
| NTE3180, NTE3181 .....  | 100mW                              |
| Derate Linear from $+50^\circ\text{C}$ .....                                  | 0.4mA/ $^\circ\text{C}$            |
| NTE3182 .....   | 60mW                               |
| Derate Linear from $+25^\circ\text{C}$ .....                                  | 0.27mA/ $^\circ\text{C}$           |
| Peak Forward Current, Per Chip (1/10 Duty Cycle, 0.1ms Pulse Width), $I_{FP}$ |                                    |
| NTE3180 & NTE3181 .....   | 100mA                              |
| NTE3182 .....   | 80mA                               |
| Continuous Forward Current, Per Chip, $I_F$                                   |                                    |
| NTE3180 .....   | 40mA                               |
| NTE3181 .....   | 50mA                               |
| NTE3182 .....   | 20mA                               |
| Reverse Voltage, Per Chip, $V_R$ .....  | 5V                                 |
| Storage and Operating Temperature Range, $T_{stg}$ , $T_{opr}$                |                                    |
| NTE3180, NTE3181 .....  | $-40^\circ$ to $+80^\circ\text{C}$ |
| NTE3182 .....   | $-35^\circ$ to $+85^\circ\text{C}$ |
| Soldering Temperature (1/16 inch Below Seating for 3 Seconds), $T_L$ .....    | $+260^\circ\text{C}$               |

**Electro-Optical Characteristics:** ( $T_A = +25^\circ\text{C}$  unless otherwise specified)

| Parameter                                     | Symbol                  | Test Conditions              | Min | Typ  | Max  | Unit          |
|---|-------------------------|------------------------------|-----|------|------|---------------|
| Viewing Angle<br>NTE3180, NTE3181 Only        | $2\theta_{1/2}$         | $I_F = 20\text{mA}$          | -   | 150  | -    | deg.          |
| Average Luminous Intensity Per Bar<br>NTE3180 | $I_V$                   | $I_F = 20\text{mA}$ , Note 1 | -   | 10.5 | 14.0 | mcd           |
| NTE3181                                       |                         |                              | 7.0 | 11.0 | 15.0 | mcd           |
| NTE3182                                       |                         | $I_F = 10\text{mA}$          | 2.3 | 4.2  | -    | mcd           |
| Peak Emission Wavelength<br>NTE3180           | $\lambda_{\text{peak}}$ | $I_F = 20\text{mA}$          | 655 | 660  | 665  | nm            |
| NTE3181                                       |                         |                              | 563 | 568  | 573  | nm            |
| NTE3182                                       |                         |                              | -   | 585  | -    | nm            |
| Spectral Line Half Width<br>NTE3180           | $\Delta\lambda$         | $i_F = 20\text{mA}$          | 19  | 24   | 29   | nm            |
| NTE3181                                       |                         |                              | 5   | 10   | 15   | nm            |
| NTE3182                                       |                         |                              | -   | 35   | -    | nm            |
| Dominant Wavelength <b>NTE3182 Only</b>       | $\lambda_d$             | $i_F = 20\text{mA}$          | -   | 588  | -    | nm            |
| Forward Voltage<br>NTE3180                    | $V_F$                   | $i_F = 20\text{mA}$          | 1.6 | 1.85 | 2.4  | V             |
| NTE3181                                       |                         |                              | 1.7 | 2.2  | 2.6  | V             |
| NTE3182                                       |                         |                              | -   | 2.1  | 2.6  | V             |
| Reverse Current                               | $I_R$                   | $V_R = 5\text{V}$            | -   | -    | 100  | $\mu\text{A}$ |

Note 1. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.

