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## NTE30002, NTE30003, NTE30004 Light Emitting Diode (LED) 0805 Surface Mount

### **Description:**

The NTE30002 thru NTE30004 are 2.0mm x 1.2mm chip LED lamps in a 0805 surface mount type package. The High Efficiency Red source color device (NTE30002) is made with Gallium Arsenide Phosphide on Gallium Phosphide Orange Light Emitting Diode. The Super Bright Green source color device (NTE30003) is made with Gallium Phosphide Green Light Emitting Diode. The Yellow source color device (NTE30004) is made with Gallium Arsenide Phosphide on Gallium Phosphide Yellow Light Emitting Diode.

### **Features:**

- 2.0mm x 1.2mm (0805) SMT LED, 0.75mm Thickness
- Low Power Consumption
- Wide Viewing Angle
- Ideal for Backlight and Indicator Applications

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

|                                                     |               |
|-----------------------------------------------------|---------------|
| DC Forward Current, $I_F$                           |               |
| NTE30002, NTE30004                                  | 30mA          |
| NTE30003                                            | 25mA          |
| Peak Forward Current (Note 1), $I_{F(\text{peak})}$ |               |
| NTE30002                                            | 160mA         |
| NTE30003, NTE30004                                  | 140mA         |
| Reverse Voltage, $V_R$                              | 5V            |
| Viewing Angle ( $2\theta_{1/2}$ )                   | 120°          |
| Power Dissipation, $P_D$                            | 105mW         |
| Operating Temperature Range, $T_{\text{opr}}$       | -40° to +85°C |
| Storage Temperature Range, $T_{\text{stg}}$         | -40° to +85°C |

Note 1. 1/10 Duty Cycle, 0.1ms Pulse Width.

Note 2.  $\theta_{1/2}$  is the angle from optical centerline where the luminous intensity is 1/2 the optical center-line value.

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

| Parameter          | Symbol | Test Conditions     | Min | Typ | Max | Unit |
|--------------------|--------|---------------------|-----|-----|-----|------|
| Luminous Intensity | $I_v$  | $I_F = 20\text{mA}$ |     |     |     |      |
| NTE30002           |        |                     | 5   | 12  | –   | mcd  |
| NTE30003           |        |                     | 3   | 12  | –   | mcd  |
| NTE30004           |        |                     | 2   | 8   | –   | mcd  |

**Electrical/Optical Characteristics (Cont'd):** ( $T_A = +25^\circ\text{C}$  unless otherwise specified)

| Parameter                             | Symbol          | Test Conditions                    | Min | Typ | Max | Unit          |
|---------------------------------------|-----------------|------------------------------------|-----|-----|-----|---------------|
| Forward Voltage<br>NTE30002           | $V_F$           | $I_F = 20\text{mA}$                | –   | 2.0 | 2.5 | V             |
| NTE30003                              |                 |                                    | –   | 2.2 | 2.5 | V             |
| NTE30004                              |                 |                                    | –   | 2.1 | 2.5 | V             |
| Reverse Current                       | $I_R$           | $V_R = 5\text{V}$                  | –   | –   | 10  | $\mu\text{A}$ |
| Peak Emission Wave Length<br>NTE30002 | $\lambda_P$     | $I_F = 20\text{mA}$                | –   | 627 | –   | nm            |
| NTE30003                              |                 |                                    | –   | 565 | –   | nm            |
| NTE30004                              |                 |                                    | –   | 590 | –   | nm            |
| Dominate Wavelength<br>NTE30002       | $\lambda_D$     | $I_F = 20\text{mA}$                | –   | 625 | –   | nm            |
| NTE30003                              |                 |                                    | –   | 568 | –   | nm            |
| NTE30004                              |                 |                                    | –   | 588 | –   | nm            |
| Spectral Line Half Width<br>NTE30002  | $\Delta\lambda$ | $I_F = 20\text{mA}$                | –   | 45  | –   | nm            |
| NTE30003                              |                 |                                    | –   | 30  | –   | nm            |
| NTE30004                              |                 |                                    | –   | 25  | –   | nm            |
| Capacitance<br>NTE30002, NTE30003     | C               | $V_F = 0\text{V}, f = 1\text{MHz}$ | –   | 15  | –   | pF            |
| NTE30004                              |                 |                                    | –   | 20  | –   | pF            |

