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## NTE3169, NHTE3170, NTE3171 Square Light Emitting Diode – 5mm

**Description:**

The NTE3169 (Bright Red) source color is made with Gallium Phosphide on a Gallium Phosphide Red Light Emitting Diode. The NTE3170 (Green) is made with Gallium Phosphide on a Gallium Phosphide Green Light Emitting Diode and the NTE3171 (Yellow) is made with Gallium Arsenide Phosphide on a Gallium Phosphide Yellow Light Emitting Diode.

**Features:**

- Low Power Consumption
- Uniform Light Emittance
- I.C Compatible
- Long Life Solid State Reliability

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

|   |                                     |
|---|-------------------------------------|
| Power Dissipation   |                                     |
| NTE3169 .....   | 40mW                                |
| Derate Linear from $+25^\circ\text{C}$ .....                      | 0.2mA/ $^\circ\text{C}$             |
| NTE3170 .....   | 100mW                               |
| Derate Linear from $+25^\circ\text{C}$ .....                      | 0.4mA/ $^\circ\text{C}$             |
| NTE3171 .....   | 60mW                                |
| Derate Linear from $+25^\circ\text{C}$ .....                      | 0.25mA/ $^\circ\text{C}$            |
| Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width)         |                                     |
| NTE3169 .....   | 60mA                                |
| NTE3170 .....   | 120mA                               |
| NTE3171 .....   | 80mA                                |
| Continuous Forward Current  |                                     |
| NTE3169 .....   | 15mA                                |
| NTE3170 .....   | 30mA                                |
| NTE3171 .....   | 20mA                                |
| Reverse Voltage .....   | 5V                                  |
| Storage and Operating Temperature Range .....                     | $-55^\circ$ to $+100^\circ\text{C}$ |
| Lead Soldering Temperature (1.6mm From Body for 5 seconds.) ..... | $+260^\circ\text{C}$                |

Note 1. **NTE3171** is a **discontinued** device and **no longer available**.

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

| Parameter                              | Symbol                  | Test Conditions              | Min | Typ | Max | Unit          |
|--|-------------------------|------------------------------|-----|-----|-----|---------------|
| Viewing Angle                          | $2\theta_{1/2}$         | Note 2                       | -   | 150 | -   | deg.          |
| Luminous Intensity<br>NTE3170, NTE3171 | $I_V$                   | $I_F = 10\text{mA}$ (Note 3) | 0.5 | 1.7 | -   | mcd           |
| NTE3169                                |                         |                              | 0.2 | 0.6 | -   | mcd           |
| Peak Emission Wavelength<br>NTE3169    | $\lambda_{\text{peak}}$ | Measuremeant @ Peak          | -   | 697 | -   | nm            |
| NTE3170                                |                         |                              | -   | 565 | -   | nm            |
| NTE3171                                |                         |                              | -   | 585 | -   | nm            |
| Spectral Line Half Width<br>NTE3169    | $\Delta\lambda$         |                              | -   | 90  | -   | nm            |
| NTE3170                                |                         |                              | -   | 30  | -   | nm            |
| NTE3171                                |                         |                              | -   | 35  | -   | nm            |
| Forward Voltage                        | $V_F$                   | $I_F = 20\text{mA}$          | -   | 2.1 | 2.8 | V             |
| Reverse Current                        | $I_R$                   | $V_R = 5\text{V}$            | -   | -   | 100 | $\mu\text{A}$ |
| Capacitance<br>NTE3169                 | C                       | $V_F = 0, f = 1\text{MHz}$   | -   | 55  | -   | pF            |
| NTE3170                                |                         |                              | -   | 35  | -   | pF            |
| NTE3171                                |                         |                              | -   | 15  | -   | pF            |

Note 2.  $\theta_{1/2}$  is the off-axis angle at which the luminous intensity is half the axial luminous intensity

Note 3. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.

