



ELECTRONICS, INC.
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NTE30037 thru NTE30043, NTE30045 Super Bright LED Indicators, 5mm

Features:

- All Plastic Mold Type w/Water Clear Lens:
 - NTE30037 (Yellow Green, AlGaP/GaAs)
 - NTE30038 (Pure Green, GaInN/GaN)
 - NTE30039 (Yellow, AlInGaP/GaP)
 - NTE30040 (Orange, AlInGaP/GaAs)
 - NTE30041 (Deep Red, GaAlAs/GaAlAs)
 - NTE30042 (Amber, AlGaP/GaAs)
 - NTE30043 (Blue, GaInN/GaN)
 - NTE30045 (White, GaInN/GaN)

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

| | | |
|---|--|---|
| Reverse Voltage, V_R | All devices | 5V |
| Continuous Forward Current, I_F | NTE30037, NTE30038, NTE30040, NTE30041, NTE30042 | 25mA |
| | NTE30039, NTE30043, NTE30045 | 30mA |
| Peak Forward Current (1.10 Duty Cycle, 0.1ms Pulse Width), I_{FM} | NTE30037, NTE30040, NTE30041, NTE30042 | 50mA |
| | NTE30039, NTE30043, NTE30045 | 100mA |
| | NTE30038 | 150mA |
| Power Dissipation, P_D | NTE30037, NTE30039, NTE30040, NTE30042 | 100mW |
| | NTE30041 | 110mW |
| | NTE30038, NTE30043, NTE30045 | 120mW |
| Operating Temperature Range, T_{opr} | | -25°C to $+85^\circ\text{C}$ |
| | NTE30038 Only | -40°C to $+100^\circ\text{C}$ |
| Storage Temperature Range, T_{stg} | NTE30038 Only | -40°C to $+100^\circ\text{C}$ |
| | All other devices | -25°C to $+100^\circ\text{C}$ |
| | Lead Temperature (During Soldering, .063 (1.6mm) from body, 5sec max), T_L | $+260^\circ\text{C}$ |

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

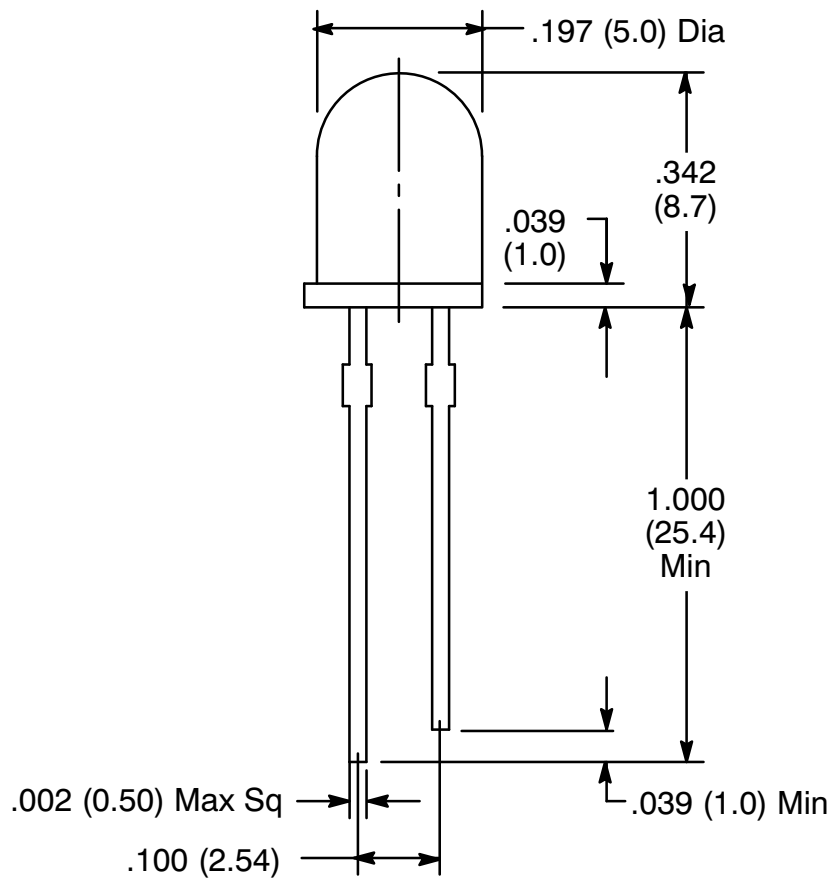
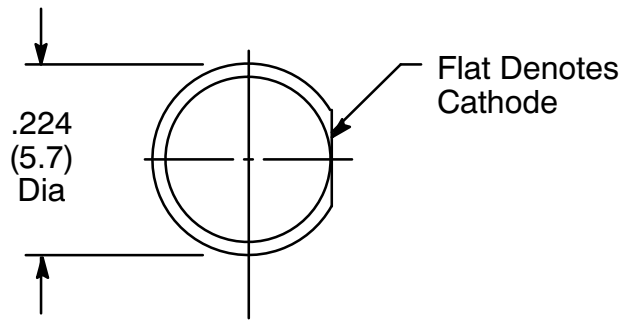
| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit | |
|-----------------|--------|---------------------|-----|----------|------|------|---|
| Forward Voltage | V_F | $I_F = 20\text{mA}$ | - | NTE30037 | 2.2 | 2.4 | V |
| NTE30038 | | | | 3.0 | 3.3 | 3.6 | V |
| NTE30039 | | | | - | 2.25 | 2.6 | V |
| NTE30040 | | | | - | 2.0 | 2.6 | V |
| NTE30041 | | | | - | 1.86 | 2.5 | V |
| NTE30042 | | | | - | 2.0 | 2.4 | V |
| NTE30043 | | | | - | 3.5 | 4.0 | V |
| NTE30045 | | | | - | 3.6 | 4.0 | V |

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

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--|-------------------|------------------------------|------------------|-------|-----|---------------|
| Reverse Current All Devices | I_R | $V_R = 5V$ | - | - | 10 | μA |
| NTE30038 | | | - | - | 100 | μA |
| NTE30043, NTE30045 Only | | $V_R = 4V$ | | | 60 | μA |
| Luminous Intensity NTE30037 | I_V | $I_F = 20\text{mA}$, Note 1 | - | 2500 | - | mcd |
| NTE30038 | | | - | 11000 | - | mcd |
| NTE30039 | | | - | 7000 | - | mcd |
| NTE30040 | | | - | 2400 | - | mcd |
| NTE30041 | | | - | 3500 | - | mcd |
| NTE30042 | | | - | 5500 | - | mcd |
| NTE30043 | | | - | 3500 | - | mcd |
| NTE30045 | | | - | 16000 | - | mcd |
| Peak Emission Wave Length NTE30037 | λ_P | $I_F = 20\text{mA}$ | - | 575 | - | nm |
| NTE30038 | | | - | 523 | - | nm |
| NTE30039 | | | - | 592 | - | nm |
| NTE30040 | | | - | 620 | - | nm |
| NTE30041 | | | - | 660 | - | nm |
| NTE30042 | | | - | 607 | - | nm |
| NTE30043 | | | - | 465 | - | nm |
| NTE30045 | | CIE Coordinates, Typ | X: 0.30; Y: 0.31 | | | |
| Dominate Wave Length (NTE30040 Only) | λ_d (HUE) | $I_F = 20\text{mA}$, Note 2 | - | 615 | - | nm |
| Spectral Line Half Width NTE30037, NTE30040, NTE30041, NTE30042 | $\Delta\lambda$ | $I_F = 20\text{mA}$ | - | 20 | - | nm |
| NTE30038 | | | - | 45 | - | nm |
| NTE30039 | | | - | 25 | - | nm |
| NTE30043 | | | - | 35 | - | nm |
| Viewing Angle All Devices | $2\theta^{1/2}$ | $I_F = 20\text{mA}$ | - | 12 | - | deg. |
| NTE30038 Only | | | - | 15 | - | deg. |
| NTE30040 Only | | | - | 40 | - | deg. |
| NTE30045 Only | | | - | 22 | - | deg. |
| Terminal Capacitance (NTE30040 Only) | C_t | $V = 0V$, $f = 1\text{MHz}$ | - | 15 | - | pF |
| Response Frequency (NTE30040 Only) | F_c | | - | 4 | - | MHz |

Note 1. Luminous intensity is measured with an Exeltron 2001.

Note 2. The dominate wavelength, λ_d , is derived from the CIE Chromaticity Diagram and represents the color of the device.



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