



ELECTRONICS, INC.
 44 FARRAND STREET
 BLOOMFIELD, NJ 07003
 (973) 748-5089
<http://www.nteinc.com>

NTE3140 thru NTE3143 Light Emitting Diode – 3mm

Features:

- All Plastic Mold Type w/Colored Diffused Lens:
 - NTE3140 (High Efficiency Red, AlGaP/GaAs)
 - NTE3141 (Yellow Green, GaInN/GaN)
 - NTE3142 (Yellow, AlInGaP/GaAs)
 - NTE3143 (Orange, AlInGaP/GaAs)

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

| | | |
|---|-------|----------------|
| Power Dissipation, P_D | | |
| NTE3140, NTE3142, NTE3143 | ..... | 90mW |
| NTE3141 | ..... | 84mW |
| Continuous Forward Current, I_F | | |
| NTE3140, NTE3143 | ..... | 30mA |
| NTE3141, NTE3142 | ..... | 25mA |
| Peak Forward Current (0.1 ms pulse width, 1/10 duty cycle), I_{FM} | ..... | 50mA |
| Reverse Voltage, V_R | ..... | 5V |
| LED Junction Temperature, T_J | ..... | +100°C |
| Operating Temperature Range, T_{opr} | ..... | -25° to +85°C |
| Storage Temperature Range, T_{stg} | ..... | -40° to +100°C |
| Lead Temperature (During Soldering, 5sec max, 1.6mm below package base) | ..... | +240°C |

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

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--------------------------|----------------|------------------------------|-----|------|------|---------------|
| View Angle of Half Power | 2 θ 1/2 | $I_F = 20\text{mA}$ | - | 40 | - | Degree |
| Forward Voltage | V_F | $I_F = 20\text{mA}$ | - | 2.05 | 2.80 | V |
| NTE3140, NTE3143 | | | | 2.15 | 2.80 | V |
| NTE3141 | | | | 2.10 | 2.80 | V |
| NTE3142 | | | | | | |
| Reverse Current | I_R | $V_R = 5\text{V}$ | - | - | 10 | μA |
| Luminous Intensity | I_V | $I_F = 20\text{mA}$, Note 1 | 20 | 35 | - | mcd |
| NTE3140, NTE3143 | | | | 40 | - | mcd |
| NTE3141 | | | | 30 | - | mcd |
| NTE3142 | | | | | | |

Note 1. Tolerance: 30%, measured using Exeltron 2001.

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

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--|-------------------------|-------------------------------------|-----|-----|-----|------|
| Peak Emission Wavelength NTE3140, NTE3143 | λ_p | $I_F = 20\text{mA}$ | - | 625 | - | nm |
| NTE3141 | | | - | 570 | - | nm |
| NTE3142 | | | - | 589 | - | nm |
| Dominate Wave Length NTE3140, NTE3143 | $\lambda_d(\text{HUE})$ | $I_F = 20\text{mA}$, Note 2 | - | 618 | - | nm |
| NTE3141 | | | - | 567 | - | nm |
| NTE3142 | | | - | 585 | - | nm |
| Spectrum Width of Half Valve NTE3140, NTE3143 | $\Delta\lambda$ | $I_F = 20\text{mA}$ | - | 45 | - | nm |
| NTE3141 | | | - | 30 | - | nm |
| NTE3142 | | | - | 35 | - | nm |
| Terminal Capacitance NTE3140, NTE3143 | C_t | $V = 0\text{V}$, $F = 1\text{MHz}$ | - | 6 | - | pF |
| NTE3141 | | | - | 7 | - | pF |
| NTE3142 | | | - | 5 | - | pF |
| Response Frequency | F_c | | - | 4 | - | MHz |

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

