



ELECTRONICS, INC.
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NTE3133, NTE3135, NTE3136, NTE3138, NTE3139 Light Emitting Diode – 1.8mm

Features:

- All Plastic Mold Type w/Water Clear Lens:
 - NTE3133 (Super Yellow-Green, AlGaP/GaAs)
 - NTE3135 (Orange, AlInGaP/GaAs)
 - NTE3136 (Super Orange, AlInGaP/GaAs)
 - NTE3138 (Super Red, GaAlAs/GaAlAs)
 - NTE3139 (Super Blue, GaAlAs/GaAlAs)

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

| | | |
|--|-------|----------------|
| Power Dissipation, P_D | | |
| NTE3133, NTE3135, NTE3136 | ..... | 100mW |
| NTE3138 | ..... | 110mW |
| NTE3139 | ..... | 120mW |
| Forward Current, I_F | | |
| Continuous | ..... | 25mA |
| Peak (Note 1) | | |
| All Devices | ..... | 50mA |
| NTE3139 Only | ..... | 100mA |
| Reverse Voltage, V_R | | |
| All Devices | ..... | 5V |
| NTE3139 Only | ..... | 4V |
| LED Junction Temperature, T_J | ..... | +100°C |
| Operating Temperature Range, T_{opr} | | |
| All Devices | ..... | -30° to +85°C |
| NTE3139 Only | ..... | -25° to +85°C |
| Storage Temperature Range, T_{stg} | ..... | -40° to +100°C |
| Lead Temperature (During Soldering, 0.62 (1.6mm) from case, 3sec max), T_L | ..... | +240°C |

Note 1. $t_p = 1\mu\text{sec}$ pulse, 0.3% duty cycle

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

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--------------------------|-------------------|---------------------|-----|------|------|--------|
| View Angle of Half Power | 2θ _{1/2} | $I_F = 20\text{mA}$ | - | 24 | - | Degree |
| Forward Voltage | V_F | $I_F = 20\text{mA}$ | - | 2.20 | 2.40 | V |
| NTE3133 | | | - | 2.00 | 2.60 | V |
| NTE3135, NTE3136 | | | - | 1.86 | 2.50 | V |
| NTE3138 | | | - | 3.5 | 4.0 | V |
| NTE3139 | | | | | | |

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

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--------------------------------|-------------------------|------------------------------|-----|------|-----|---------------|
| Reverse Current | I_R | $V_R = 5V$ | - | - | 10 | μA |
| NTE3139 Only | | | - | - | 60 | μA |
| Luminous Intensity | I_V | $I_F = 20\text{mA}$ (Note 2) | 450 | 900 | - | mcd |
| NTE3133 | | | 900 | 1300 | - | mcd |
| NTE3135, NTE3136 | | | 700 | 1200 | - | mcd |
| NTE3138 | | | 750 | 1500 | - | mcd |
| Peak Emission Wavelength | λ_p | $I_F = 20\text{mA}$ | - | 575 | - | nm |
| NTE3133 | | | - | 620 | - | nm |
| NTE3135, NTE3136 | | | - | 660 | - | nm |
| NTE3138 | | | - | 468 | - | nm |
| Dominant Wavelength | $\lambda_d(\text{HUE})$ | $I_F = 20\text{mA}$ (Note 3) | - | 572 | - | nm |
| NTE3133 | | | - | 615 | - | nm |
| NTE3135, NTE3136 | | | - | 645 | - | nm |
| NTE3138 | | | 470 | 472 | 475 | nm |
| Spectrum Width of Half Valve | $\Delta\lambda$ | $I_F = 20\text{mA}$ | - | 20 | - | nm |
| NTE3139 Only | | | - | 30 | - | nm |
| Terminal Capacitance | C_t | $V = 0V, F = 1\text{MHz}$ | - | 35 | - | pF |
| NTE3133 | | | - | 15 | - | pF |
| NTE3135, NTE3136 | | | - | 22 | - | pF |
| NTE3138 | | | | | | |
| Optic Rise Time (NTE3139 Only) | τ | $I_F = 20\text{mA}$ | - | 30 | - | ns |

Note 2. Tolerance: 30%, measured using Exeltron 2001.

Note 3. The dominant wavelength, λ_d , is derived from the CIE Chromaticity Diagram and represents the color of the device.

