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RoHS 2002/95/EC

# NTE30053 thru NTE30059
# Super Bright LED Indicators, 8mm

**Features:**

- RoHS Compliant
- All Plastic Mold Type w/Water Clear Lens:
  - NTE30053 (Yellow Green, AlInGaP/GaAs)
  - NTE30054 (Light Green, InGaN/GaN)
  - NTE30055 (Orange, AlInGaP/GaAs)
  - NTE30056 (Light Red, AlInGaP/GaAs)
  - NTE30057 (Deep Red, GaAlAs/GaAlAs)
  - NTE30058 (Blue, INGaN/GaN)
  - NTE30059 (White)

**Absolute Maximum Ratings:** ($T_A$ = +25°C unless otherwise specified)

Reverse Voltage, $V_R$
- NTE30054, NTE30058, NTE30059 . . . . . 4V
- NTE30053, NTE30055, NTE30056, NTE30057 . . . . . 5V

Continuous Forward Current, $I_F$ . . . . . 25mA

Peak Forward Current (1.10 Duty Cycle, 0.1ms Pulse Width), $I_{FM}$
- NTE30053, NTE30055, NTE30056, NTE30057 . . . . . 50mA
- NTE30054, NTE30058, NTE30059 . . . . . 100mA

Power Dissipation, $P_D$
- NTE30053, NTE30055, NTE30056 . . . . . 100mW
- NTE30057 . . . . . 110mW
- NTE30054, NTE30058, NTE30059 . . . . . 120mW

LED Junction Temperature, $T_j$ . . . . . +100°C

Operating Temperature Range, $T_{opr}$ . . . . . –25°C to +85°C

Storage Temperature Range, $T_{stg}$
- NTE30053, NTE30055, NTE30056 . . . . . –25°C to +100°C
- NTE30054, NTE30057, NTE30058, NTE30059 . . . . . –40°C to +100°C

Lead Temperature (During Soldering, .063 (1.6mm) from body, 5sec max), $T_L$ . . . . . +260°C

**Electro–Optical Characteristics:** ($T_A$ = +25°C unless otherwise specified)

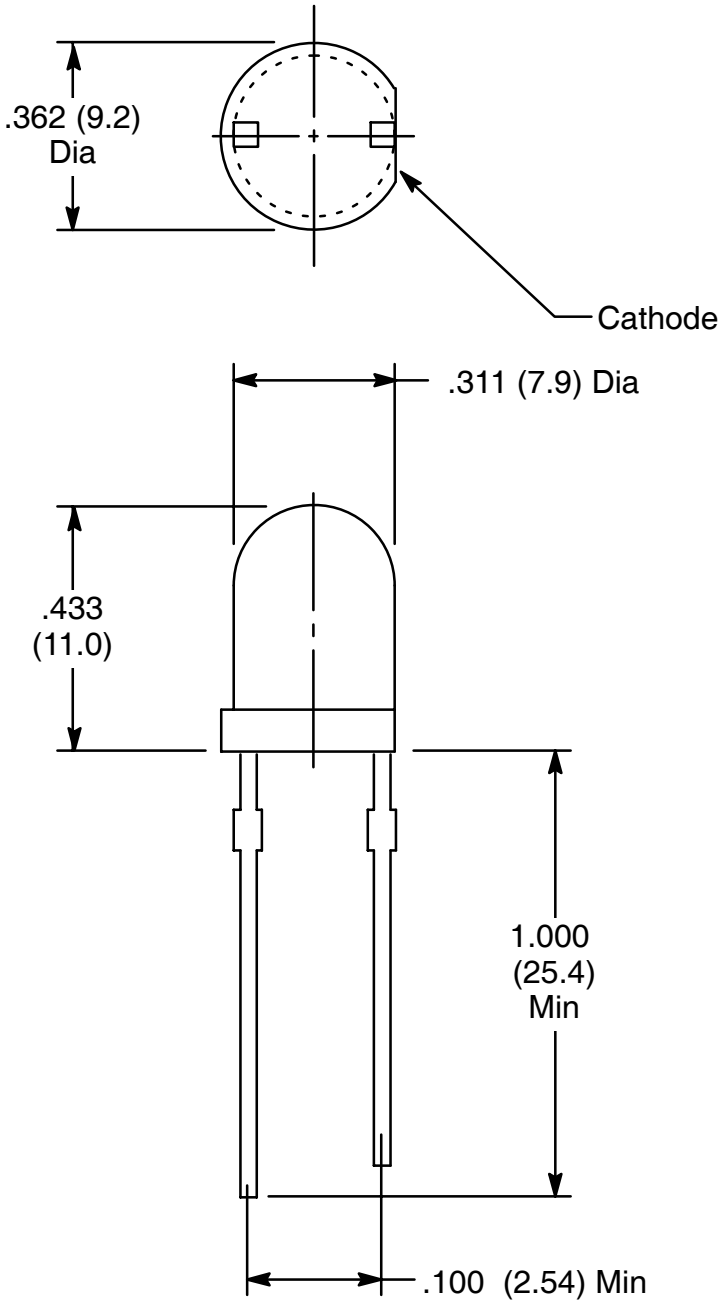
| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Forward Voltage<br>NTE30053 | $V_F$ | $I_F$ = 20mA | – | 2.2 | 2.5 | V |
| NTE30054 | | | – | 3.5 | 4.0 | V |
| NTE30055 | | | – | 2.0 | 2.5 | V |
| NTE30056 | | | – | 2.0 | 2.4 | V |
| NTE30057 | | | – | 1.86 | 2.5 | V |
| NTE30058 | | | – | 3.5 | 4.0 | V |
| NTE30059 | | | – | 3.5 | 4.1 | V |

**Electro−Optical Characteristics (Cont'd):** ($T_A$ = +25°C unless otherwise specified)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Reverse Current | | | | | | |
| All Devices | $I_R$ | $V_R$ = 5V | – | – | 10 | μA |
| NTE30054, NTE30058, NTE30059 | | $V_R$ = 4V | – | – | 60 | μA |
| Luminous Intensity | | | | | | |
| NTE30053 | $I_V$ | $I_F$ = 20mA, Note 1 | 600 | 1600 | – | mcd |
| NTE30054 | | | 2000 | 4500 | – | mcd |
| NTE30055, NTE30056 | | | 2400 | 3600 | – | mcd |
| NTE30057 | | | 1200 | 2200 | – | mcd |
| NTE30058 | | | 700 | 1500 | – | mcd |
| NTE30059 | | | 1700 | 4000 | – | mcd |
| Peak Emission Wave Length | | | | | | |
| NTE30053 | $\lambda_P$ | $I_F$ = 20mA | – | 575 | – | nm |
| NTE30054 | | | – | 523 | – | nm |
| NTE30055 | | | – | 592 | – | nm |
| NTE30056 | | | – | 620 | – | nm |
| NTE30057 | | | – | 660 | – | nm |
| NTE30058 | | | – | 468 | – | nm |
| NTE30059 | | CIE Coordinates, Typ | X: 0.30; Y: 0.29 | | | |
| Dominate Wave Length | | | | | | |
| NTE30053 | $\lambda_d$ (HUE) | $I_F$ = 20mA, Note 2 | 568 | 572 | 576 | nm |
| NTE30054 | | | 520 | 525 | 540 | nm |
| NTE30055 | | | 585 | 590 | 594 | nm |
| NTE30056 | | | 600 | 610 | 615 | nm |
| NTE30057 | | | – | 645 | – | nm |
| NTE30058 | | | 463 | 470 | 479 | nm |
| Spectral Line Half Width | | | | | | |
| NTE30053 | $\Delta\lambda$ | $I_F$ = 20mA | – | 15 | – | nm |
| NTE30054 | | | – | 45 | – | nm |
| NTE30055 | | | – | 25 | – | nm |
| NTE30056, NTE30057 | | | – | 20 | – | nm |
| NTE30058 | | | – | 35 | – | nm |
| Viewing Angle | | | | | | |
| NTE30053, NTE30055, NTE30056 | $2\theta^1/_2$ | $I_F$ = 20mA | – | 25 | – | deg. |
| NTE30054, NTE30057, NTE30059 | | | – | 30 | – | deg. |
| NTE30058 | | | – | 35 | – | deg. |
| Terminal Capacitance | | | | | | |
| NTE30053 | $C_t$ | V = 0V, f = 1MHz | – | 35 | – | pF |
| NTE30055 | | | – | 14 | – | pF |
| NTE30056 | | | – | 16 | – | pF |
| NTE30057 | | | – | 22 | – | pF |
| Response Frequency | | | | | | |
| NTE30053, NTE30055, NTE30056, NTE30057 | $F_c$ | | – | 4 | – | MHz |
| Optic Rise Time (NTE30054 **Only**) | τ | $I_F$ = 20mA | – | 30 | – | ns |

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

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


.362 (9.2)
Dia
Cathode
.311 (7.9) Dia
.433
(11.0)
1.000
(25.4)
Min
.100 (2.54) Min