



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



## 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, $T_{opr}$		$-25^\circ\text{C}$ to $+85^\circ\text{C}$
NTE30038 <b>Only</b>	.....	$-40^\circ\text{C}$ to $+100^\circ\text{C}$
Storage Temperature Range, $T_{stg}$		$-40^\circ\text{C}$ to $+100^\circ\text{C}$
NTE30038 <b>Only</b>	.....	$-40^\circ\text{C}$ to $+100^\circ\text{C}$
All other devices	.....	$-25^\circ\text{C}$ 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	$\mu\text{A}$
NTE30038			-	-	100	$\mu\text{A}$
NTE30043, NTE30045 <b>Only</b>		$V_R = 4V$			60	$\mu\text{A}$
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	$\lambda_P$	$I_F = 20\text{mA}$	-	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 <b>Only</b> )	$\lambda_d$ (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 <b>Only</b>			-	15	-	deg.
NTE30040 <b>Only</b>			-	40	-	deg.
NTE30045 <b>Only</b>			-	22	-	deg.
Terminal Capacitance (NTE30040 <b>Only</b> )	$C_t$	$V = 0V$ , $f = 1\text{MHz}$	-	15	-	pF
Response Frequency (NTE30040 <b>Only</b> )	$F_c$		-	4	-	MHz

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.

