



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		
NTE30038 Only	4V	
All other 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	
NTE30038, NTE30039, NTE30043, NTE30045	100mA	
Power Dissipation, P_D		
NTE30037, NTE30039, NTE30040, NTE30042	100mW	
NTE30041	110mW	
NTE30038, NTE30043, NTE30045	120mW	
Operating Temperature Range, T_{opr}	-25°C to $+85^\circ\text{C}$	
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			-	3.5	4.0	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, NTE30043, NTE30045 Only		$V_R = 4V$	-	-	60	μA
Luminous Intensity NTE30037	I_V	$I_F = 20\text{mA}$, Note 1	-	2500	-	mcd
NTE30038			-	10500	-	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.

