



ELECTRONICS, INC.
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NTE30053 thru NTE30059 Super Bright LED Indicators, 8mm

Features:

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

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Forward Voltage	V_F	$I_F = 20\text{mA}$				
NTE30053			-	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): ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Reverse Current All Devices	I_R	$V_R = 5V$	-	-	10	μA
NTE30054, NTE30058, NTE30059		$V_R = 4V$	-	-	60	μA
Luminous Intensity NTE30053	I_V	$I_F = 20\text{mA}$, 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	λ_P	$I_F = 20\text{mA}$	-	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	λ_d (HUE)	$I_F = 20\text{mA}$, 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	$\Delta\lambda$	$I_F = 20\text{mA}$	-	15	-	nm
NTE30054			-	45	-	nm
NTE30055			-	25	-	nm
NTE30056, NTE30057			-	20	-	nm
NTE30058			-	35	-	nm
Viewing Angle NTE30053, NTE30055, NTE30056	$2\theta^{1/2}$	$I_F = 20\text{mA}$	-	25	-	deg.
NTE30054, NTE30057, NTE30059			-	30	-	deg.
NTE30058			-	35	-	deg.
Terminal Capacitance NTE30053	C_t	$V = 0V$, $f = 1\text{MHz}$	-	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	$I_F = 20\text{mA}$	-	30	-	ns

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.

