



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

## 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 <b>Only</b>	100mA
Reverse Voltage, $V_R$	
All Devices	5V
NTE3139 <b>Only</b>	4V
LED Junction Temperature, $T_J$	+100°C
Operating Temperature Range, $T_{opr}$	
All Devices	-30° to +85°C
NTE3139 <b>Only</b>	-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	$2\theta_{1/2}$	$I_F = 20\text{mA}$	-	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	$\mu\text{A}$
NTE3139 Only			-	-	60	$\mu\text{A}$
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	$\lambda_p$	$I_F = 20\text{mA}$	-	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)	$\tau$	$I_F = 20\text{mA}$	-	30	-	ns

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

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

