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## NTE3020 & NTE3023 Light Emitting Diode (LED) 5mm (T-1 3/4) Type Package

**Description:**

The NTE3020 and NTE3023 are discrete LED indicators in a 5mm (T-1 3/4) type package. The Red (NTE3020) source color device is made with Gallium Arsenide Phosphide on Gallium Arsenide Red Light Emitting Diode while the Orange (NTE3023) source color device is made with Gallium Arsenide Phosphide on Gallium Phosphide Orange Light Emitting Diode.

**Features:**

- Low Power Consumption
- High Efficiency
- IC Compatible/Low Current Requirements
- Versatile mounting on P.C. board or panel
- Reliable and Rugged

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

Power Dissipation, $P_D$	
NTE3020 .....	80mW
NTE3023 .....	100mW
Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width), $I_{F(\text{Peak})}$	
NTE3020 .....	200mA
NTE3023 .....	120mA
Continuos Forward Current, $I_F$	
NTE3020 .....	40mA
Derate Linearly Above $25^\circ\text{C}$ .....	$0.5\text{mA}/^\circ\text{C}$
NTE3023 .....	30mA
Derate Linearly Above $25^\circ\text{C}$ .....	$0.4\text{mA}/^\circ\text{C}$
Reverse Voltage, $V_R$ .....	5V
Operating Temperature Range, $T_A$ .....	$-55^\circ$ to $+100^\circ\text{C}$
Storage Temperature Range, $T_{\text{stg}}$ .....	$-55^\circ$ to $+100^\circ\text{C}$
Lead Temperature (During Soldering, .063 in. (1.6mm) from Body for 5sec), $T_L$ .....	$+260^\circ\text{C}$

**Electrical/Optical Characteristics:** ( $T_A = +25^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Luminous Intensity NTE3020 NTE3023	$I_V$	$I_F = 10\text{mA}$ , Note 1	0.3 2.5	0.8 8.7	- -	mcd
Viewing Angle	$2\Theta^{1/2}$	Note 2	-	36	-	deg.
Peak Emission Wavelength NTE3020 NTE3023	$\lambda_P$		- -	655 635	- -	nm
Spectral Line Half Width NTE3020 NTE3023	$\Delta\lambda$		- -	24 40	- -	nm
Forward Voltage NTE3020 NTE3023	$V_F$	$I_F = 20\text{mA}$	- -	1.7 2.0	- 2.8	V
Reverse Current	$I_R$	$V_R = 5\text{V}$	-	-	100	$\mu\text{A}$
Capacitance NTE3020 NTE3023	C	$V_F = 0$ , $f = 1\text{MHz}$	- -	30 20	- -	pF

Note 1. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE (Commission Internationale De L'Eclairage) eye-response curve.

Note 2.  $\Theta^{1/2}$  is the off-axis angle at which the luminous intensity is half the axial luminous intensity.

