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NTE3027

Infrared Emitting Diode

High Speed for Remote Control

Description:

The NTE3027 is an infrared emitting diode in standard GaAs on GaAs technology, molded in a clear, blue-tinted plastic package.

Features:

- Low Forward Voltage
- High Radiant Power and Radiant Intensity
- Suitable for DC and High Pulse Current Operation
- High Reliability
- Standard T-1 3/4 (5mm) Package

Applications:

Infrared remote control and free air transmission systems with low forward voltage and comfortable radiation and angle requirements in combination with PIN photodiodes or phototransistors.

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

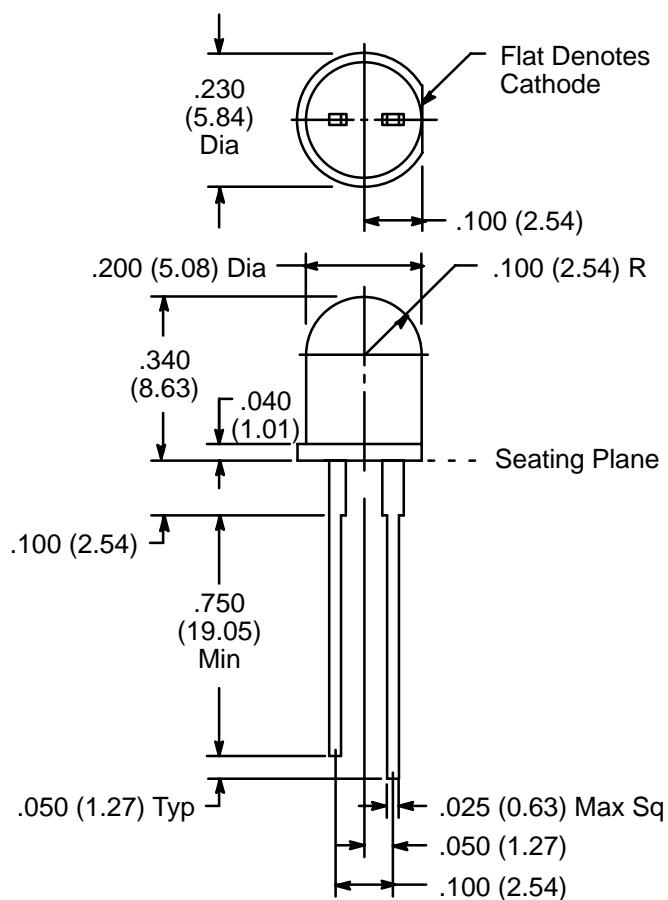
Reverse Voltage, V_R	5V
Forward Current, I_F	
Continuous	150mA
Peak (Note 1)	300mA
Surge Forward Current (Note 2), I_{FSM}	2.5A
Power Dissipation, P_D	210mW
Junction Temperature, T_J	+100°C
Operating Temperature Range, T_{opr}	-55° to +100°C
Storage Temperature Range, T_{stg}	-55° to +100°C
Lead Soldering Temperature ($t \leq 5\text{sec}$, 2mm from case), T_L	+260°C
Thermal Resistance, Junction-to-Ambient, R_{thJA}	375K/W

Note 1. $t_p = 100\mu\text{s}$, $t_p/T = 0.5$

Note 2. $t_p = 100\mu\text{s}$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Forward Voltage	V_F	$I_F = 100\text{mA}, t_p = 20\text{ms}$	—	1.3	1.7	V
		$I_F = 1.5\text{A}, t_p = 100\mu\text{s}$	—	2.2	3.4	V
Temperature Coefficient of Forward Voltage		$I_F = 100\text{mA}$	—	-1.3	—	$\text{mV}/^\circ\text{C}$
Reverse Current	I_R	$V_R = 5\text{V}$	—	—	100	μA
Junction Capacitance	C_j	$V_R = 0, f = 1\text{MHz}, E = 0$	—	30	—	pF
Radiant Intensity	I_e	$I_F = 100\text{mA}, t_p = 20\text{ms}$	10	17	—	mW/sr
		$I_F = 1.5\text{A}, t_p = 100\mu\text{s}$	85	160	—	mW/sr
Angle of Half Intensity	Φ		—	± 22	—	deg
Radiant Power	Φ_e	$I_F = 100\text{mA}, t_p = 20\text{ms}$	—	14	—	mW
Temperature Coefficient of Radiant Intensity		$I_F = 20\text{mA}$	—	-0.8	—	$\%/\text{ }^\circ\text{C}$
Peak Wavelength	λ_p	$I_F = 100\text{mA}$	—	950	—	nm
Temperature Coefficient of Peak Wavelength		$I_F = 100\text{mA}$	—	0.2	—	$\text{nm}/\text{ }^\circ\text{C}$
Spectral Bandwidth	$\Delta\lambda$	$I_F = 100\text{mA}$	—	50	—	nm
Rise Time	t_r	$I_F = 100\text{mA}$	—	800	—	ns
		$I_F = 1.5\text{A}$	—	400	—	ns
Fall Time	t_f	$I_F = 100\text{mA}$	—	800	—	ns
		$I_F = 1.5\text{A}$	—	400	—	ns



Tolerance $\pm .010 (.254)$