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NTE3039

Silicon NPN Phototransistor 3mm (T1) Case

Description:

The NTE3039 is an NPN silicon phototransistor transfer molded in a 3mm (T1) clear plastic package. Transfer molding of this device assures superior optical centerline performance compared to other molding processes. Lead lengths are staggered to provide a simple method of polarity identification.

Features:

- 3mm (T1) Plastic Package
- 20° (Nominal) Acceptance Angle
- Consistent Optical Properties
- Wide Sensitivity Ranges

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

Collector–Emitter Voltage, V_{CEO}	30V
Emitter–Collector Voltage, V_{ECO}	5V
Collector Power Dissipation (Note 1), P_C	70mW
Operating Temperature Range, T_{opr}	–40° to +85°C
Storage Temperature Range, T_{stg}	–40° to +85°C
Lead Temperature (During Soldering, 1.5mm from body, 5sec max), T_L	+240°C

Note 1. Derate linearly from +25°C free-air temperature at the rate of 0.18 mW/°C.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Dark Current	$I_D (I_{CEO})$	$V_{CE} = 15V, H = 0$	–	–	100	nA
Light Current	I_L	$V_{CE} = 5V, H = 5mW/cm^2, \text{Note 2}$	7	–	14	mA
Collector–Emitter Breakdown Voltage	$V_{(BR)ceo}$	$I_C = 100\mu A$	30	–	–	V
Emitter–Collector Breakdown Voltage	$V_{(BR)eco}$	$I_E = 100\mu A$	5	–	–	V
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = I_L/8, H = 5mW/cm^2$	–	–	0.4	V
Angular Response	\varnothing	$I_F = \text{Constant}, \text{Note 3}$	–	20	–	degr
Rise Time	t_r	$V_{CC} = 5V, I_L = 1mA, R_L = 1000\Omega$	–	15	–	μs
Fall Time	t_f		–	15	–	μs

Note 2. The radiation source is a tungsten lamp operating at a color temperature of 2870°K.

Note 3. Angular response is defined as the total included angle between the half sensitivity points.

