

NTE30133 Infrared Phototransistor 1.9mm Type SMD Package

Description:

The NTE30133 is a phototransistor in a miniature SMD package which is molded in a water clear plastic with a spherical top view lens. This device is spectrally matched for use with infrared emitting diodes such as the NTE30132.

Features:

- Fast Response Time
- High Photo Sensitivity
- Low Junction Capacitance
- Compatible with Infrared and Vapor Phase Reflow Solder Process
- Silicon Chip Material
- Water Clear Lens
- For Use with NTE30132

Applications:

- Miniature Switch
- Counters and Sorter
- Position Sensor
- Infrared Applied System

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 Current, I_C	20mA
Power Dissipation (at or below $T_A = +25^\circ\text{C}$), P_D	75mW
Operating Temperature Range, T_{opr}	-25° to $+85^\circ\text{C}$
Storage Temperature Range, T_{stg}	-40° to $+85^\circ\text{C}$
Soldering Temperature (5sec Max), T_{sol}	$+260^\circ\text{C}$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Range of Spectrol Bandwidth	$\lambda_{0.5}$		400	–	1100	nm
Wavelength of Peak Sensitivity	λ_p		–	940	–	nm
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 100\mu\text{A}$, $E_e = 0\text{mW}/\text{cm}^2$	30	–	–	V
Emitter–Collector Breakdown Voltage	$V_{(BR)ECO}$	$I_E = 100\mu\text{A}$, $E_e = 0\text{mW}/\text{cm}^2$	5	–	–	V
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 2\text{mA}$, $E_e = 1\text{mW}/\text{cm}^2$	–	–	0.4	V
Collector Dark Current	I_{CEO}	$V_{CE} = 20\text{V}$, $E_e = 0\text{mW}/\text{cm}^2$	–	–	100	nA
On–State Collector Current	$I_{C(ON)}$	$V_{CE} = 5\text{V}$, $E_e = 1\text{mW}/\text{cm}^2$	1.0	1.5	–	mA
Rise Time	t_r	$V_{CE} = 5\text{V}$, $I_C = 1\text{mA}$, $R_L = 1000\Omega$	–	15	–	μs
Fall Time	t_f		–	15	–	μs

