

## NTE3035A Phototransistor Detector

**Description:**

The NTE3035A is designed for a wide variety of industrial processing and control applications requiring a sensitive detector. The NTE3034A is an identical package and is designed to be used with the NTE3029A infrared emitter.

**Features:**

- Miniature, Low Profile, Clear Plastic Package
- Designed for Automatic Handling and Accurate Positioning
- Side Looking, with Molded Lens
- High Volume, Economical

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

Collector–Emitter Voltage, $V_{CEO}$ .....	60V
Total Device Dissipation ( $T_A = +25^\circ\text{C}$ ), $P_D$ .....	150mW
Derate Above $25^\circ\text{C}$ (Note 1) .....	2mW/ $^\circ\text{C}$
Operating Junction Temperature Range, $T_J$ .....	$-40^\circ$ to $+100^\circ\text{C}$
Storage Temperature Range, $T_{stg}$ .....	$-40^\circ$ to $+100^\circ\text{C}$
Lead Temperature (During Soldering, 1/16" from case, 5sec max., Note 2), $T_L$ .....	$+260^\circ\text{C}$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Dark Current	$I_D$	$V_{CE} = 10V, H \approx 0$	–	–	100	nA
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10mA, H \approx 0$	60	–	–	V
Capacitance	$C_{ce}$	$V_{CC} = 5V, f = 1MHz$	–	3.9	–	pF

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Light Current	$I_L$	$V_{CE} = 5V, H = 500\mu W/cm^2,$ $\lambda = 940nm$	5	25	–	mA
Turn–On Time	$t_{on}$	$H = 500\mu W/cm^2, V_{CC} = 5V,$ $R_L = 100\Omega$	–	125	–	$\mu s$
Turn–Off Time	$t_{off}$		–	150	–	$\mu s$
Saturation Voltage	$V_{CE(sat)}$	$H = 500\mu W/cm^2, \lambda = 940nm,$ $I_C = 2mA, V_{CC} = 5V$	–	0.75	1.0	V
Wavelength of Maximum Sensitivity	$\lambda_s$		–	0.8	–	$\mu m$

Note 1. Measured with device soldered into a typical PC board.

Note 2. Heat sink should be applied to leads during soldering to prevent case temperature from exceeding  $+100^\circ\text{C}$ .

