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## NTE3034A Phototransistor Detector

**Description:**

The NTE3034A is designed for industrial processing and control applications such as light modulators, shaft or position encoders, and end tape detectors. The NTE3034A is designed to be used with the NTE3029A infrared emitter in optical slotted coupler/interrupter applications.

**Features:**

- Economical, Miniature Plastic Package
- Package Designed for Accurate Positioning
- Lens Molded into Package

**Absolute Maximum Ratings:**

Collector–Emitter Voltage,  $V_{CEO}$  ..... 30V  
 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	$I_D$	$V_{CE} = 10\text{V}, H \approx 0$	–	–	100	nA
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10\text{mA}, H \approx 0$	30	–	–	V

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Light Current	$I_L$	$V_{CE} = 5\text{V}, H = 500\mu\text{W}/\text{cm}^2$	100	500	–	$\mu\text{A}$
Turn–On Time	$t_{on}$	$H = 5\text{mW}/\text{cm}^2, V_{CC} = 5\text{V}, R_L = 2400\Omega$	–	60	–	$\mu\text{s}$
Turn–Off Time	$t_{off}$		–	0.25	0.4	$\mu\text{s}$
Saturation Voltage	$V_{CE(sat)}$	$H = 5\text{mW}/\text{cm}^2, I_C = 2\text{mA}, V_{CC} = 5\text{V}$	–	0.25	0.4	V
Wavelength of Maximum Sensitivity	$\lambda_s$		–	0.8	–	$\mu\text{m}$

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  $+100^\circ\text{C}$ .

