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## NTE3032 Phototransistor Detector NPN-Si, Visible & IR

**Description:**

The NTE3032 is a silicon NPN phototransistor detector in a TO18 type package designed for use in industrial inspection, processing and control, counter, sorter, switching, and logic circuit applications or any design requiring radiation sensitivity and stable characteristics.

**Features:**

- Sensitive Throughout Visible and Near Infrared Spectral Range for Wider Application
- Minimum Light Current: 8mH @ H = 5mW/cm<sup>2</sup>
- External Base for Added Control
- Annular Passivated Structure for Stability and Reliability
- Popular TO18 Type Package for Easy Handling and Mounting

**Absolute Maximum Ratings:** (T<sub>A</sub> = +25°C unless otherwise specified)

Collector–Emitter Voltage, V <sub>CEO</sub> .....	30V
Collector–Base Voltage, V <sub>CBO</sub> .....	80V
Emitter–Collector Voltage, V <sub>ECO</sub> .....	5V
Total Device Dissipation, P <sub>D</sub> .....	150mW
Derate Above 25°C .....	1.43mW/°C
Operating Junction Temperature Range, T <sub>J</sub> .....	–65° to +150°C
Storage Temperature Range, T <sub>stg</sub> .....	–65° to +150°C

**Electrical Characteristics:** (T<sub>A</sub> = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>Static Characteristics</b>						
Collector Dark Current	I <sub>CEO</sub>	V <sub>CC</sub> = 10V, H ~ 0	–	–	100	nA
Collector–Base Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> = 100µA	80	–	–	V
Emitter–Collector Breakdown Voltage	V <sub>(BR)ECO</sub>	I <sub>E</sub> = 100µA	5	–	–	V
<b>Optical Characteristics</b>						
Light Current	I <sub>L</sub>	V <sub>CC</sub> = 5V, R <sub>L</sub> = 100Ω, Note 1	8	–	–	mA
Photo Current Rise Time	t <sub>r</sub>	R <sub>L</sub> = 100Ω, I <sub>L</sub> = 1mA (Peak), Note 2	–	15	–	µs
Photo Current Fall Time	t <sub>f</sub>		–	15	–	µs

Note 1. Radiation flux density (H) equal to 5mW/cm<sup>2</sup> emitted from a tungsten source at a color temperature of 2870 K.

Note 2. For unsaturated response time measurement, radiation is provided by pulsed GaAs (gallium arsenide) light-emitting diode (λ ~ µm) with a pulse width equal to or greater than 10µs, I<sub>L</sub> = 1mA Peak.

