



ELECTRONICS, INC.
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NTE3031 Phototransistor Detector NPN-Si, Visible & IR

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

| | |
|---|-------------------------------------|
| Collector–Emitter Voltage, V_{CEO} | 30V |
| Emitter–Collector Voltage, V_{ECO} | 5V |
| Continuous Device Dissipation, P_D | 150mW |
| Derate Above 25°C | 1.43mW/ $^\circ\text{C}$ |
| Operating Junction Temperature Range, T_J | -55° to $+125^\circ\text{C}$ |
| Storage Temperature Range, T_{stg} | -65° to $+150^\circ\text{C}$ |
| Lead temperature (During Soldering, 3 min), 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 |
|-------------------------------------|---------------|---|-----|-----|-----|---------------|
| Static Characteristics | | | | | | |
| Collector Dark Current | I_D | $V_{CE} = 10V$ | – | – | 100 | nA |
| Collector–Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C = 100\mu\text{A}$ | 30 | – | – | V |
| Emitter–Collector Breakdown Voltage | $V_{(BR)ECO}$ | $I_E = 100\mu\text{A}$ | 5 | – | – | V |
| Saturation Voltage | $V_{CE(sat)}$ | $I_C = 0.4\text{mA}$ | – | 0.2 | – | V |
| Optical Characteristics | | | | | | |
| Light Current | I_L | $V_{CE} = 5V, R_L = 100\Omega$, Note 1 | 1 | – | – | mA |
| Photo Current Rise Time | t_r | $R_L = 1000\Omega, V_{CC} = 5V,$ $I_L = 1\text{mA (Peak)}$ | – | 6 | – | μs |

Note 1. Radiation flux density (H) equal to $5\text{mW}/\text{cm}^2$ emitted from a tungsten source at a color temperature of 2875 K.

Note 2. Angular response is defined as the total included angle between the half sensitivity points and assuming a point source.

