



NPN T-1 $\frac{3}{4}$ STANDARD 5 ϕ PHOTODETECTOR

LTR-4208

T-41-45

FEATURES

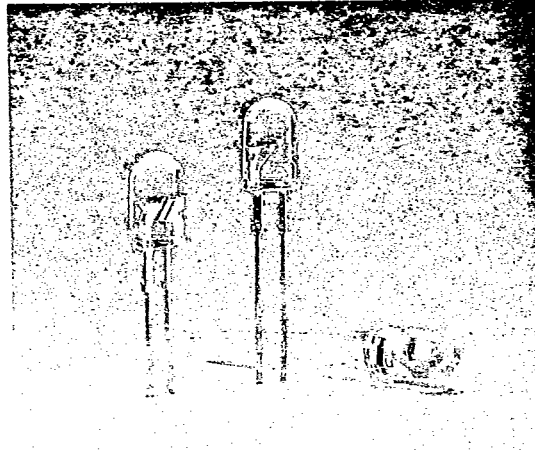
- WIDE RANGE OF COLLECTOR CURRENTS.
- LENSED FOR HIGH SENSITIVITY
- LOW COST PLASTIC PACKAGE.

DESCRIPTION

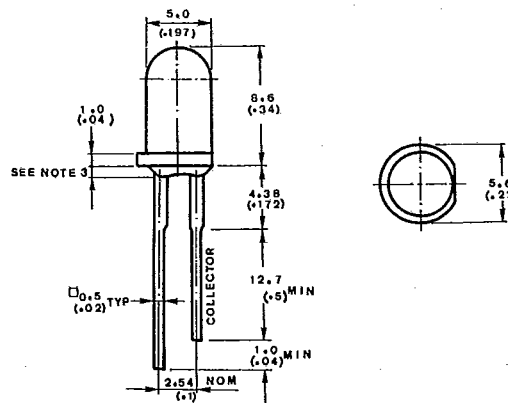
The LTR-4208 consist of an NPN silicon phototransistor mounted in a lensed, clear plastic, end looking package. The lensing effect of the package allows an acceptance half angle of 10° measured from the optical axis to the half power point. This series is mechanically and spectrally matched to the LTE-4208 series of infrared emitting diodes.

All electrical parameters are 100% tested by manufacturing. Specifications are guaranteed to a cumulative .65% AQL.

Collector current ranges on the LTR-4208 through SLA are guaranteed to a 2.5% AQL.



PACKAGE DIMENSIONS



NOTES:

1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.25\text{mm}$ ($\pm 0.010''$) unless otherwise noted.
3. Protruded resin under flange is 1.5mm ($\pm 0.059''$) max.
4. Lead spacing is measured where the leads emerge from the package.
5. Specifications are subject to change without notice.

ABSOLUTE MAXIMUM RATINGS AT $T_A = 25^\circ\text{C}$

| PARAMETER | MAXIMUM RATING | UNIT |
|--|---|------|
| Power Dissipation | 100 | mW |
| Collector-Emitter Voltage | 30 | V |
| Emitter-Collector Voltage | 5 | V |
| Operating Temperature Range | -55°C to $+100^\circ\text{C}$ | |
| Storage Temperature Range | -55°C to $+100^\circ\text{C}$ | |
| Lead Soldering Temperature [1.6mm (0.063 in) From Body] | 260°C for 5 Seconds | |

ELECTRICAL CHARACTERISTICS AT $T_A = 25^\circ\text{C}$

| PARAMETER | SYMBOL | MIN | TYP | MAX | UNIT | TEST CONDITION | REMARK |
|--------------------------------------|---------------|-----|-----|-----|---------------|--|--------|
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | 30 | | | V | $I_C = 1\text{mA}$ $E_e = 0\text{mW/cm}^2$ | |
| Emitter-Collector Breakdown Voltage | $V_{(BR)ECQ}$ | 5 | | | V | $I_E = 100\mu\text{A}$ $E_e = 0\text{mW/cm}^2$ | |
| Collector Emitter Saturation Voltage | $V_{CE(SAT)}$ | | | 0.4 | V | $I_C = 0.5\text{mA}$ $E_e = 20\text{mW/cm}^2$ | |
| Rise Time | T_r | | 5 | | μS | $V_{CC} = 30\text{V}$ $I_C = 800\mu\text{A}$ $R_L = 1\text{k}\Omega$ | |
| Fall Time | T_f | | 5 | | μS | | |
| Collector Dark Current | I_{CEO} | | | 100 | nA | $V_{CE} = 10\text{V}$ $E_e = 0\text{mW/cm}^2$ | |
| On State Collector Current | | 1 | | 2 | mA | $V_{CE} = 5\text{V}$ | BINC |
| | | 2 | | 4 | mA | $E_e = 1\text{mW/cm}^2$ | BIND |
| | | 4 | | 8 | mA | $\lambda = 940\text{nm}$ | BINE |
| | | 8 | | | mA | | BINF |

TYPICAL ELECTRICAL/OPTICAL CHARACTERISTIC CURVES

(25°C Ambient Temperature Unless Otherwise Noted)

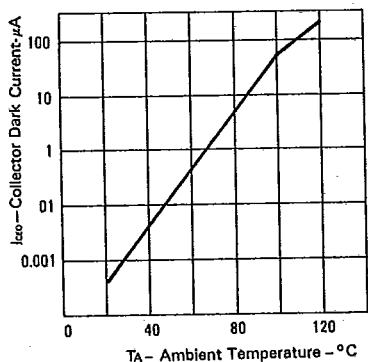


FIG. 1 COLLECTOR DARK CURRENT VS AMBIENT TEMPERATURE

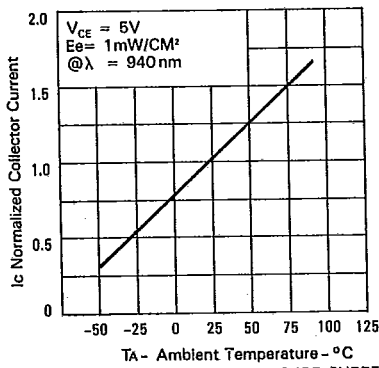


FIG. 2 NORMALIZED COLLECTOR CURRENT VS AMBIENT TEMPERATURE

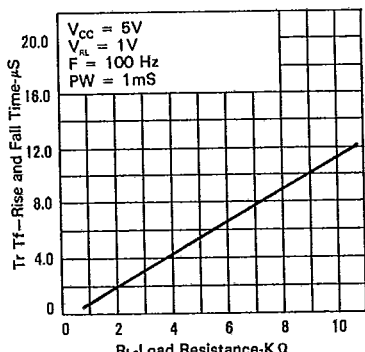


FIG. 3 RISE AND FALL TIME VS LOAD RESISTANCE

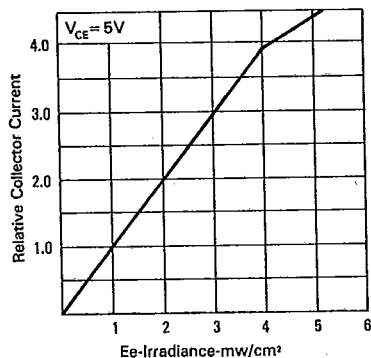


FIG. 4 RELATIVE COLLECTOR CURRENT VS IRRADIANCE

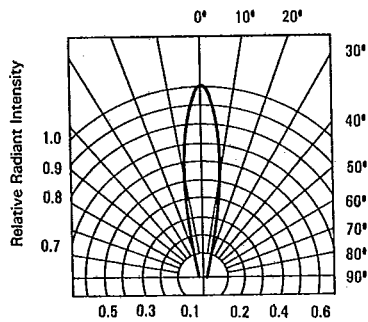


FIG. 5 RADIATION DIAGRAM