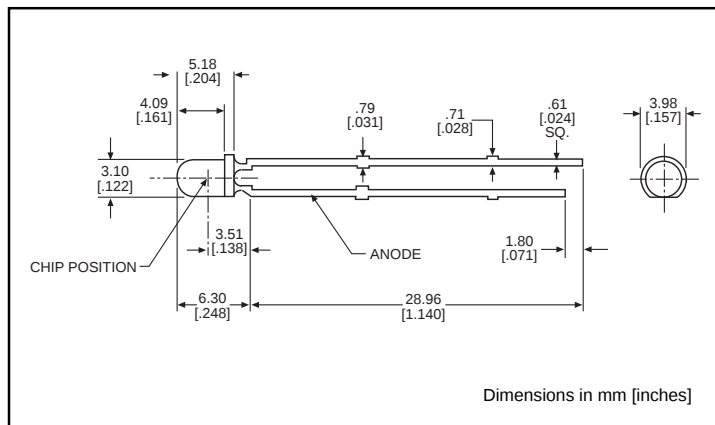




# 3mm Infrared Discrete LED Silicon PNP Photo Transistor

# Dialight

## 521-9740



## Features

- Silicon PNP type transistor
- Narrow acceptance angle
- Daylight filtered
- Good linearity
- High reliability

## ABSOLUTE MAXIMUM RATINGS ( $T_A=25^\circ\text{C}$ )

|                                                              |                      |
|--------------------------------------------------------------|----------------------|
| Operating and Storage Temperature Range ( $^\circ\text{C}$ ) | -55/+100             |
| Soldering Temperature ( $\geq 2\text{mm}$ from case bottom)  |                      |
| Dip Soldering Time ( $T_S$ ) $\leq 5$ s                      | 260 $^\circ\text{C}$ |
| Iron Soldering Time ( $T_S$ ) $\leq 3$ s                     | 300 $^\circ\text{C}$ |
| Collector Emitter Voltage ( $V_{CE0}$ )                      | 35V                  |
| Collector Current ( $I_C$ )                                  | 15 mA                |
| Collector Peak Current ( $I_{PK}$ ) $t < 10\mu\text{s}$      | 75 mA                |
| Power Dissipation ( $P_{TOT}$ ) $T_A=25^\circ\text{C}$       | 165 mW               |
| Thermal Resistance ( $R_{THJA}$ )                            | 450 kW               |

## OPERATING CHARACTERISTICS ( $T_A=25^\circ\text{C}$ )

| Parameter                                                                                                                  | Symbol           | Value             | Unit            |
|----------------------------------------------------------------------------------------------------------------------------|------------------|-------------------|-----------------|
| Maximum Sensitivity Wavelength                                                                                             | $\lambda_{Smax}$ | 900               | nm              |
| Spectral Range, Photosensitivity                                                                                           | $\lambda$        | 730 min, 1120 max | nm              |
| Radiant Sensitive Area                                                                                                     | A                | .045 typ          | mm <sup>2</sup> |
| Distance, Chip Surface and Lens                                                                                            | H                | 2.4 typ, 2.8 max  | mm              |
| Full Angle                                                                                                                 | $2\theta_{1/2}$  | 24 $^\circ$       | Deg.            |
| Capacitance ( $V_{CE}=0$ V, $f=1$ MHz, $E=0$ lux)                                                                          | $C_{CE}$         | 5                 | pF              |
| Leakage Current ( $V_{CE}=25$ V, $E=0$ lx)                                                                                 | $I_{ce0}$        | 1 typ, 200 max    | nA              |
| Photocurrent, Collector-Emitter <sup>(1)</sup> ( $E_e=0.5$ mW/cm <sup>2</sup> , $V_{CE}=5$ V, $\lambda=950$ nm)            | $I_{PCE}$        | .63 min, 1.5 typ  | mA              |
| Rise/Fall Time ( $I_C=1$ mA, $V_{CC}=5$ V, $R_L=1k\Omega$ )                                                                | $t_R, t_F$       | 6.5 typ           | $\mu\text{s}$   |
| Collector Emitter Saturation Voltage ( $I_C=I_{PCEmin}^{(1)} \cdot 0.3$ , $\lambda=950$ nm, $E_e=0.5$ mW/cm <sup>2</sup> ) | $V_{CEsat}$      | 200               | mV              |

Notes: (1)  $I_{PCEmin}$  = minimum photocurrent

Solder Adherence per MIL-STD-202E, Method 208C