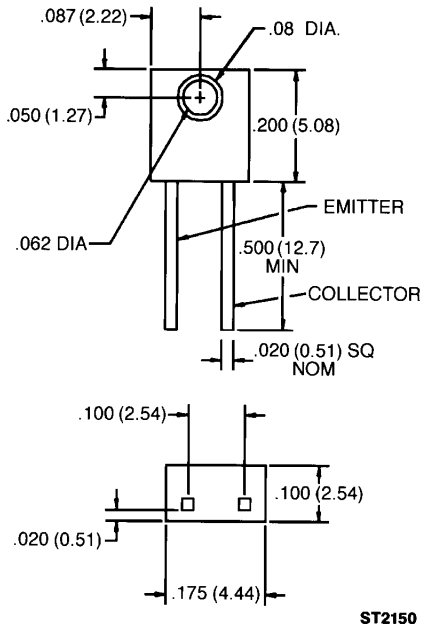
OPTOELECTRONICS

# SIDELOOKER PHOTODARLINGTON

# QSE133

## PACKAGE DIMENSIONS




NOTES:
1. DIMENSIONS ARE IN INCHES (mm).
2. TOLERANCE IS ±.010 (.25) UNLESS OTHERWISE SPECIFIED.

## DESCRIPTION

The QSE133 is a silicon photodarlington encapsulated in a wide angle, infrared transparent, dark blue, plastic sidelooker shell package.

## FEATURES

- Steel lead frames for improved reliability in solder mounting.
- Good optical-to-mechanical alignment.
- Plastic package is infrared transparent and tinted to attenuate visible light.
- Mechanically and spectrally matched to the QEE113 and QEE123 LEDs.
- Dark blue shell body allows easy recognition from LED.

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## ABSOLUTE MAXIMUM RATINGS ($T_A$ = 25°C Unless Otherwise Specified)

| | |
|---|---|
| Storage Temperature | −40°C to + 100°C |
| Operating Temperature | −40°C to + 100°C |
| Soldering: | |
| Lead Temperature (Iron) | 240°C for 5 sec. [2,3,4,5] |
| Lead Temperature (Flow) | 260°C for 10 sec. [2,3,5] |
| Collector-Emitter Breakdown Voltage | 30 Volts |
| Emitter-Collector Breakdown Voltage | 5.0 Volts |
| Power Dissipation | 100 mW[1] |

## ELECTRICAL CHARACTERISTICS ($T_A$ = 25°C Unless Otherwise Specified)
(All measurements made under pulse conditions.)

| PARAMETER | SYMBOL | MIN. | TYP. | MAX. | UNITS | TEST CONDITIONS |
|---|---|---|---|---|---|---|
| Collector-Emitter Breakdown | $BV_{CEO}$ | 30.0 | | — | V | $I_C$ = 1 mA |
| Emitter-Collector Breakdown | $BV_{ECO}$ | 5.0 | | — | V | $I_E$ = 100 μA |
| Collector-Emitter Leakage | $I_{CEO}$ | — | | 100 | nA | $V_{CE}$ = 10 V |
| Reception Angle at ½ Sensitivity | θ | — | ±25 | — | Degrees | |
| On-State Collector Current | $I_{C(ON)}$ | 9.0 | | — | mA | Ee = 0.25 mW/cm², $V_{CE}$ = 5V[6] |
| Collector-Emitter Saturation Voltage | $V_{CE(SAT)}$ | — | | 1.0 | V | $I_c$ = 0.4 mA, Ee = 0.5mW/cm²[6] |
| Rise Time | $t_r$ | — | 20 | — | μS | $I_C$ = .15 mA, $V_{CC}$ = 5 V, $R_L$ = 100Ω |
| Fall Time | $t_f$ | — | 50 | — | μS | $I_C$ = .15 mA, $V_{CC}$ = 5 V, $R_L$ = 100Ω |

## NOTES

1. *Derate power dissipation linearly 1.33 mW/°C above 25°C.*
2. *RMA flux is recommended.*
3. *Methanol or Isopropyl alcohols are recommended as cleaning agents.*
4. *Soldering iron tip 1/16" (1.6 mm) minimum from housing.*
5. *As long as leads are not under any stress or spring tension.*
6. *Light source is an AlGaAs LED emitting light at a peak wavelength of 880 nm.*