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QSE773 Sidelooker Pin Photodiode

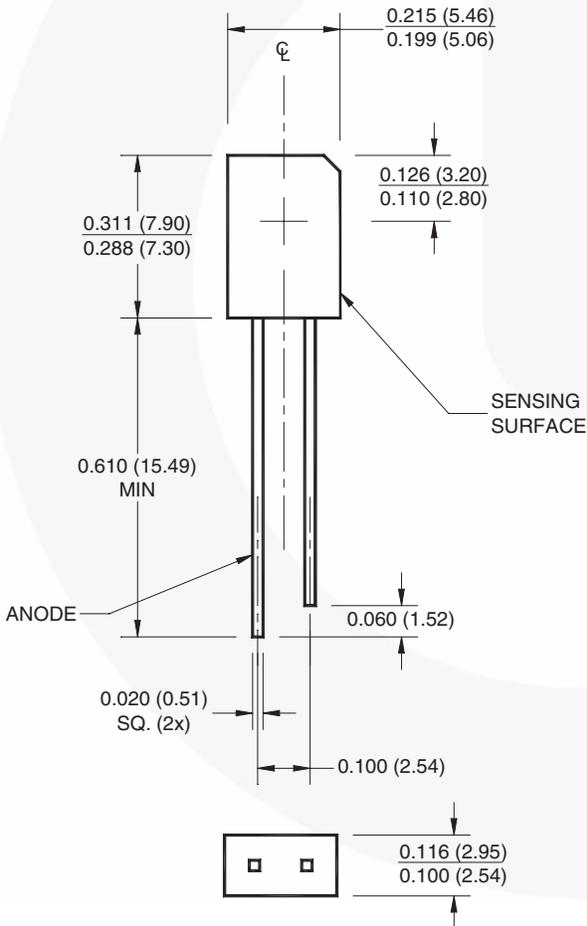
Features

- Daylight filter
- Sidelooker package
- Pin photodiode
- Wide reception angle, 120°
- Chip size = 0.107 sq. inches (2.71 sq. mm)

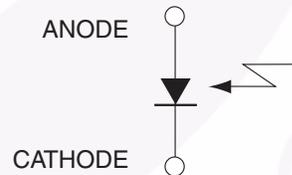
Description

The QSE773 is a plastic silicon pin photodiode in a sidelooker package.

Package Dimensions



Schematic



Notes:

1. Dimensions for all drawings are in inches (mm).
2. Tolerance of ± 0.010 (0.25) on all non-nominal dimensions unless otherwise specified.

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

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only.

| Symbol | Parameters | Value | Units |
|--------------------|--|----------------|------------------|
| T_{OPR} | Operating Temperature | -40 to +85 | $^\circ\text{C}$ |
| T_{STG} | Storage Temperature | -40 to +85 | $^\circ\text{C}$ |
| $T_{\text{SOL-I}}$ | Soldering Temperature (Iron) ⁽⁴⁾⁽⁵⁾⁽⁶⁾⁽⁷⁾ | 240 for 5 sec. | $^\circ\text{C}$ |
| $T_{\text{SOL-F}}$ | Soldering Temperature (Flow) ⁽⁴⁾⁽⁵⁾⁽⁷⁾ | 260 for 10 sec | $^\circ\text{C}$ |
| V_{R} | Reverse Voltage | 32 | V |
| P_{D} | Power Dissipation ⁽³⁾ | 150 | mW |

Notes:

- Derate power dissipation linearly 2.50mW/ $^\circ\text{C}$ above 25°C .
- RMA flux is recommended.
- Methanol or Isopropyl alcohols are recommended as cleaning agents.
- Soldering iron tip 1/16" (1.6 mm) from housing.
- As long as leads are not under any stress or spring tension.

Electrical Characteristics ($T_A = 25^\circ\text{C}$)

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Units |
|-----------------------|--------------------------------------|---|------|----------|------|---------------|
| V_{R} | Reverse Voltage | $I_{\text{R}} = 0.1\text{mA}$, $E_{\text{e}} = 0\text{mW}/\text{cm}^2$ | 32 | | | V |
| $I_{\text{R(D)}}$ | Dark Reverse Current | $V_{\text{R}} = 10\text{V}$, $E_{\text{e}} = 0\text{mW}/\text{cm}^2$ | | | 30 | nA |
| λ_{PK} | Peak Sensitivity | $V_{\text{R}} = 5\text{V}$ | | 940 | | nm |
| Θ | Reception Angle at 1/2 Power | | | ± 60 | | $^\circ$ |
| I_{PH} | Photo Current ⁽⁸⁾ | $E_{\text{e}} = 1.0\text{mW}/\text{cm}^2$, $V_{\text{R}} = 5\text{V}$ | 30 | | | μA |
| I_{SC} | Short Circuit Current ⁽⁸⁾ | $E_{\text{e}} = 1.0\text{mW}/\text{cm}^2$ | | 18 | | μA |
| C | Capacitance | $V_{\text{R}} = 3\text{V}$ | | 25 | | pF |
| t_{r} | Rise Time | $V_{\text{R}} = 5\text{V}$, $R_{\text{L}} = 1\text{k}\Omega$ | | 50 | | ns |
| t_{f} | Fall Time | $V_{\text{R}} = 5\text{V}$, $R_{\text{L}} = 1\text{k}\Omega$ | | 50 | | ns |

Notes:

- Light source is an GaAs LED which has a peak emission wavelength of 940nm.
- All measurements made under pulse conditions.

Typical Performance Curves

Fig. 1 Relative Spectral Sensitivity vs. Wavelength

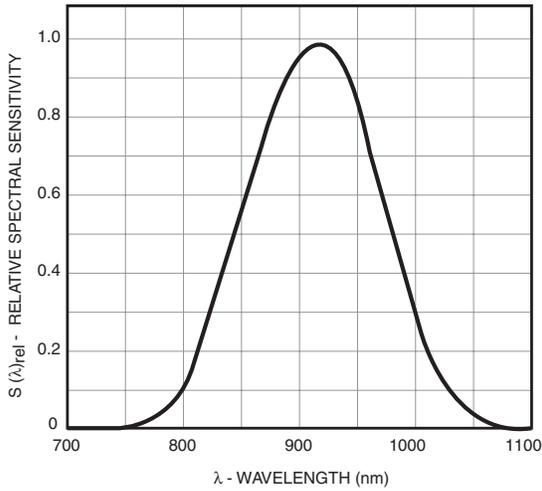


Fig. 2 Short Circuit Current vs. Irradiance

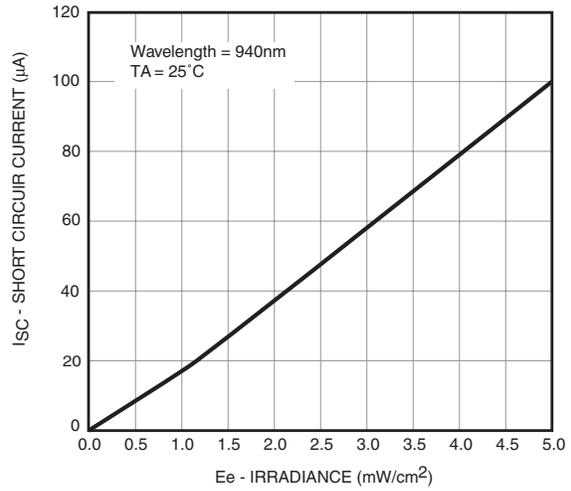


Fig. 3 Short Circuit Current vs. Temperature

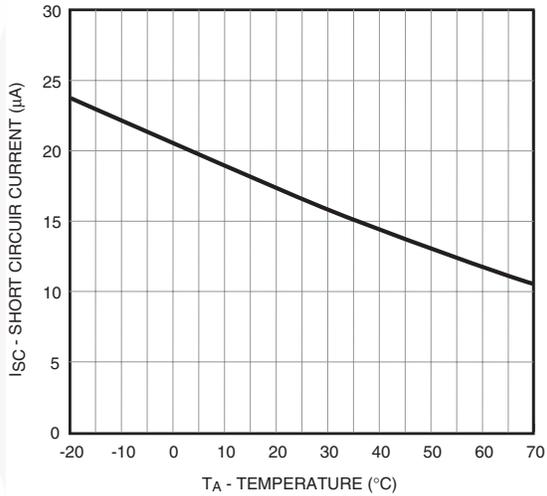


Fig. 4 Capacitance vs. Reverse Voltage

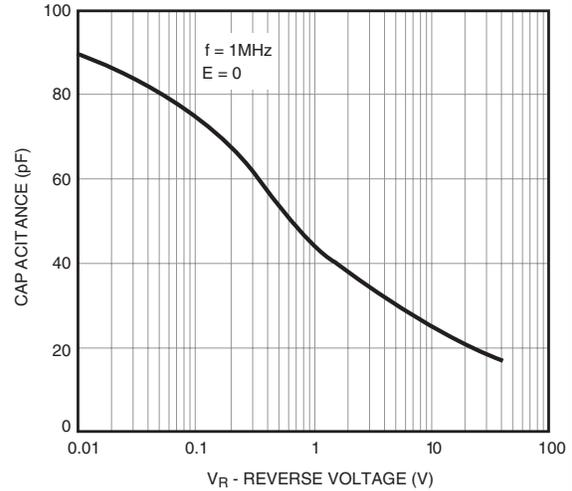


Fig. 5 Dark Current vs. Temperature

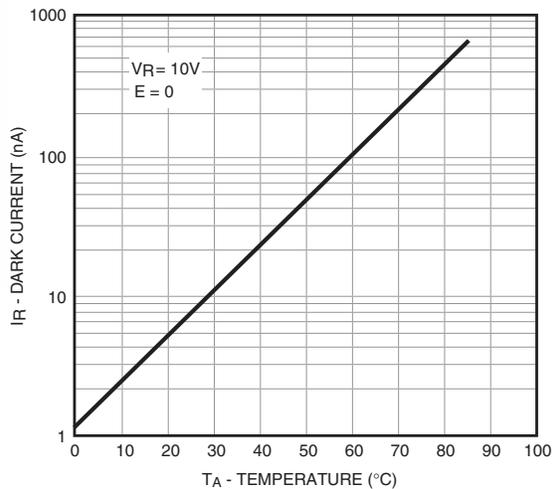
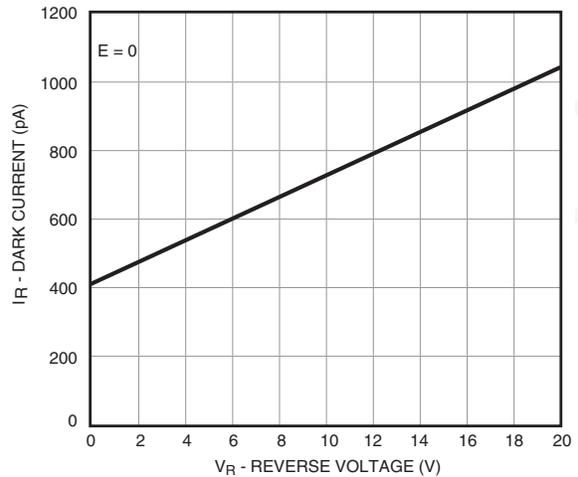


Fig. 6 Dark Current vs. Reverse Voltage





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