FAIRCHILD SEMICONDUCTOR®

August 2011

QSE773
Sidelooker Pin Photodiode

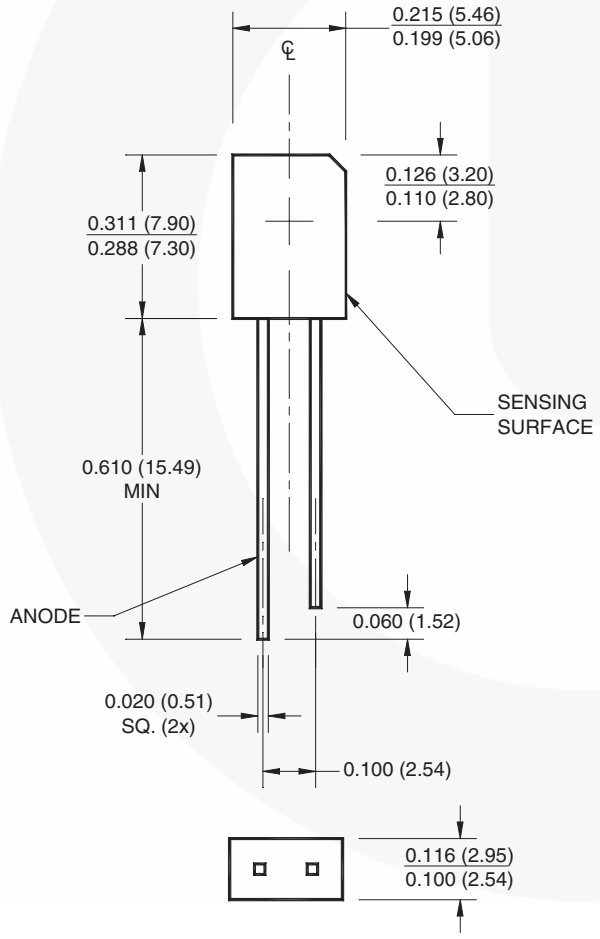
Features

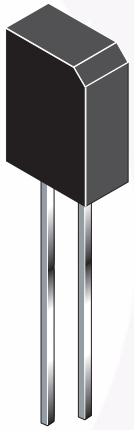
- Daylight filter
- Sidelooker package
- Pin photodiode
- Wide reception angle, 120°
- Chip size = 0.107 sq. inches (2.71 sq. mm)

Description

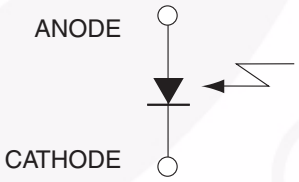
The QSE773 is a plastic silicon pin photodiode in a sidelooker package.

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°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	°C
T_{STG}	Storage Temperature	-40 to +85	°C
T_{SOL-I}	Soldering Temperature (Iron)[4][5][6][7]	240 for 5 sec.	°C
T_{SOL-F}	Soldering Temperature (Flow)[4][5][7]	260 for 10 sec	°C
V_R	Reverse Voltage	32	V
P_D	Power Dissipation[3]	150	mW

Notes:

3. Derate power dissipation linearly 2.50mW/°C above 25°C.
4. RMA flux is recommended.
5. Methanol or Isopropyl alcohols are recommended as cleaning agents.
6. Soldering iron tip 1/16” (1.6 mm) from housing.
7. As long as leads are not under any stress or spring tension.

Electrical Characteristics (T_A = 25°C)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
V_R	Reverse Voltage	I_R = 0.1mA	32			V
$I_{R(D)}$	Dark Reverse Current	V_R = 10V			30	nA
λ_{PK}	Peak Sensitivity	V_R = 5V		940		nm
Θ	Reception Angle at 1/2 Power			±60		°
I_{PH}	Photo Current[8]	E_e = 1.0mW/cm^2, V_{CE} = 5V	30			µA
I_{SC}	Short Circuit Current[8]	E_e = 1.0mW/cm^2		18		µA
C	Capacitance	V_R = 3V		25		pF
t_r	Rise Time	V_R = 5V, R_L = 1kΩ		50		ns
t_f	Fall Time	V_R = 5V, R_L = 1kΩ		50		ns

Notes:

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

Typical Performance Curves

Fig. 1 Relative Spectral Sensitivity vs. Wavelength

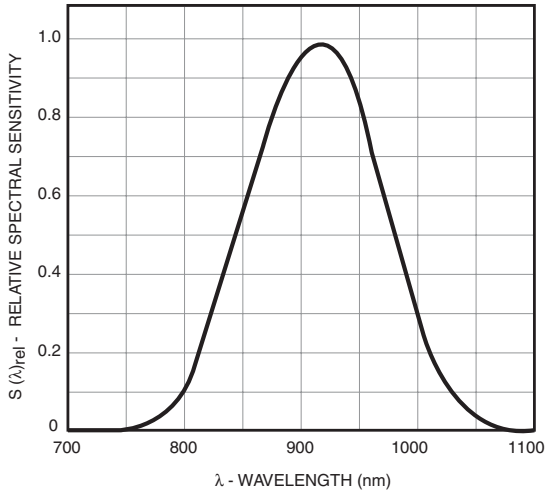


Fig. 2 Short Circuit Current vs. Irradiance

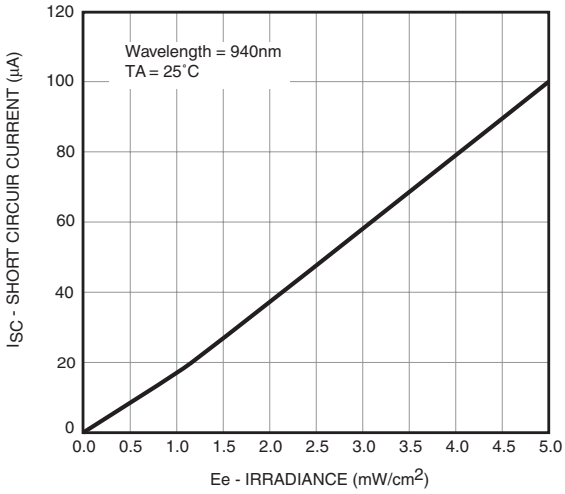


Fig. 3 Short Circuit Current vs. Temperature

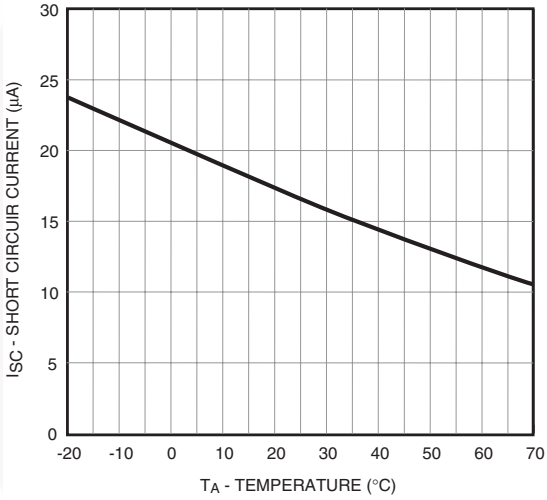


Fig. 4 Capacitance vs. Reverse Voltage

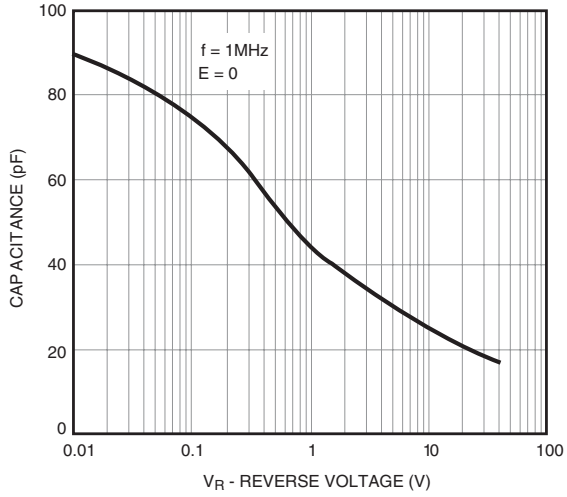


Fig. 5 Dark Current vs. Temperature

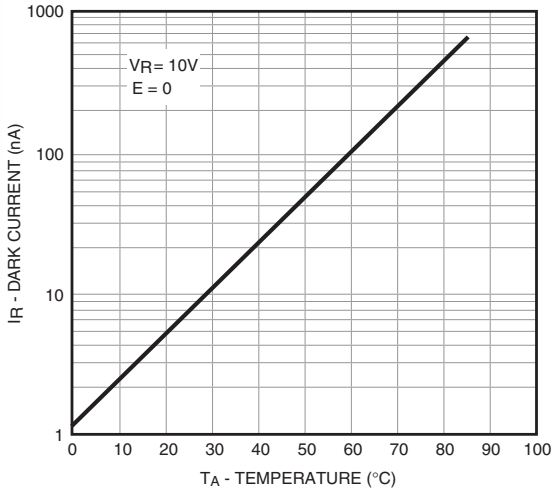
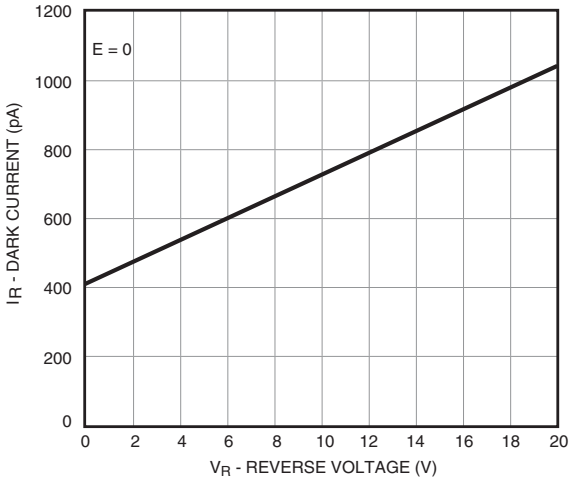


Fig. 6 Dark Current vs. Reverse Voltage



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