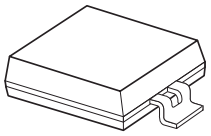
Surface-Mount Silicon Pin Photodiode

QSB34GR, QSB34ZR, QSB34CGR, QSB34CZR



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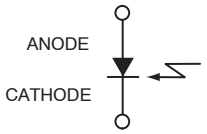
CASE 776AY

SCHEMATIC



Features

- Daylight Filter (QSB34GR and QSB34ZR Only)
- Surface−Mount Packages:
  - QSB34GR / QSB34CGR for Over−Mount Board
  - QSB34ZR / QSB34CZR for Under−Mount Board
- Fast PIN Photodiode
- Wide Reception Angle: 120°
- Large Chip Size: 3 mm x 3 mm
- Sensitive Area: 2.55 mm x 2.55 mm
- High Sensitivity
- Low Capacitance
- These Devices are Pb−Free, Halogen Free/BFR Free and are RoHS Compliant

ORDERING INFORMATION

Part Number	Operating Temperature	Package	Shipping†
QSB34GR	−25 to +85°C	PLCC 2 Lead, case 776AX (Pb−Free)	1000 / Tape & Reel
QSB34ZR		PLCC 2 Lead, case 776AY (Pb−Free)	
QSB34CGR		PLCC 2 Lead, case 776AX (Pb−Free)	
QSB34CZR		PLCC 2 Lead, case 776AY (Pb−Free)	

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Operating Temperature	T_{OPR}	−25 to +85	°C
Storage Temperature	T_{STG}	−40 to +85	°C
Soldering Temperature (Note 1)	T_{SOL}	260	°C
Reverse Voltage	V_R	32	V
Power Dissipation at (or below) 25°C Free Air Temperature	P_C	150	mW

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.
1. Soldering time ≤ 5 s.

Recommended I_R Reflow Soldering Profile

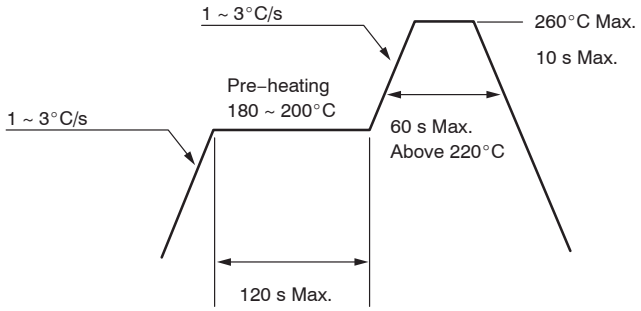


Figure 1. Recommended I_R Reflow Soldering Profile

ELECTRICAL / OPTICAL CHARACTERISTICS (Values are at T_A = 25°C unless specified otherwise)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
V_R	Reverse Voltage	I_R = 0.1 mA	32			V
$I_{R(D)}$	Dark Reverse Current	V_R = 10 V			30	nA
λ_{PK}	Peak Sensitivity			940		nm
θ	Reception Angle at 1/2 Power			±60		°
I_{PH}	Photo Current	E_E = 1 mW/cm^2, V_{CE} = 5 V	25	37		μA
C	Capacitance	V_R = 3 V		25		pF
t_r	Rise Time	V_R = 10 V, R_L = 50 Ω		50		ns
t_f	Fall Time	V_R = 10 V, R_L = 50 Ω		50		ns
$\lambda_{0.5}$	Special Sensitivity	QSB34GR, QSB34ZR	730		1100	nm
		QSB34CGR, QSB34CZR	400		1100	

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

TYPICAL PERFORMANCE CHARACTERISTICS

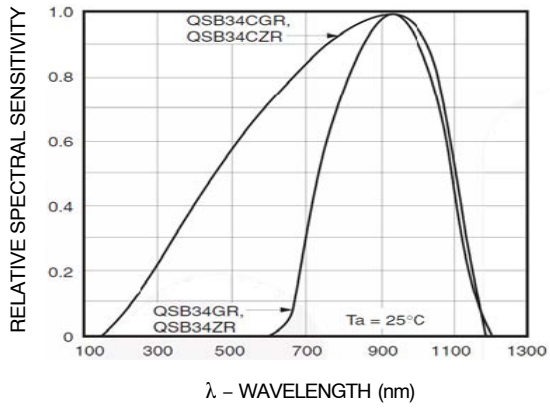


Figure 1. Relative Spectral Sensitivity vs. Wavelength

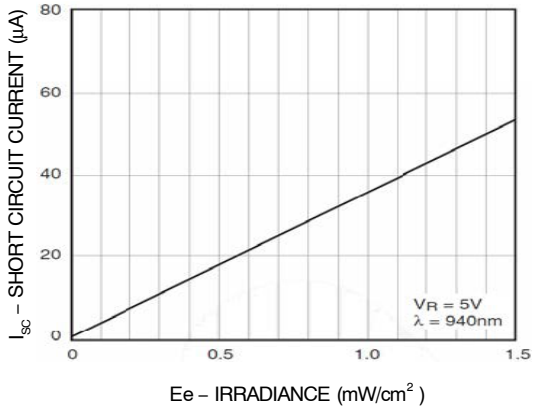


Figure 2. Short Circuit Current vs. Irradiance

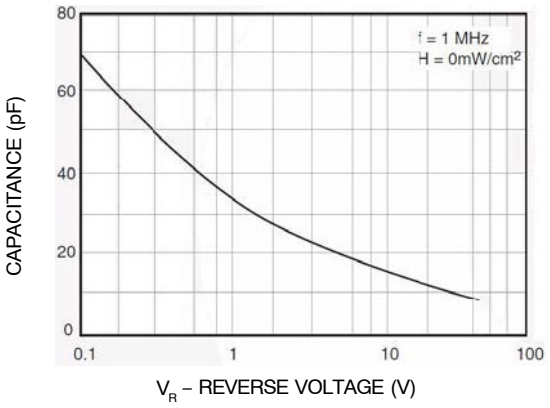


Figure 3. Capacitance vs. Reverse Voltage

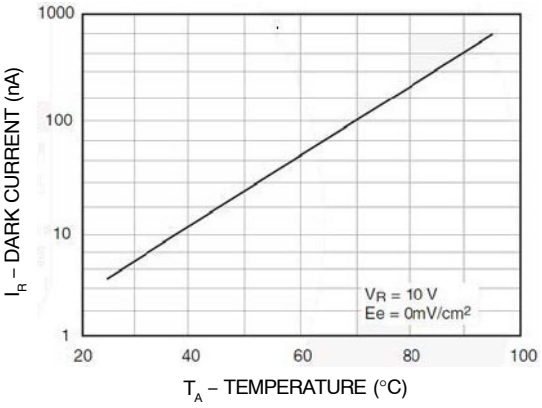


Figure 4. Dark Current vs. Temperature

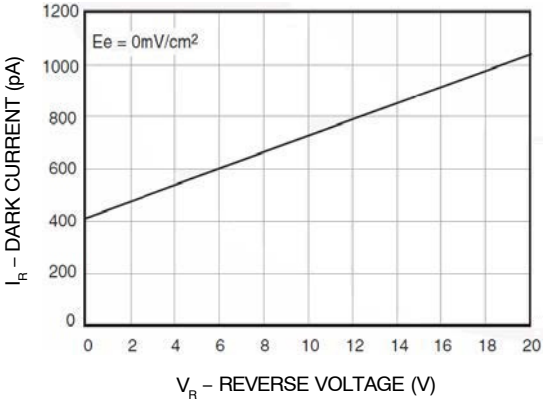


Figure 5. Dark Current vs. Reverse Voltage

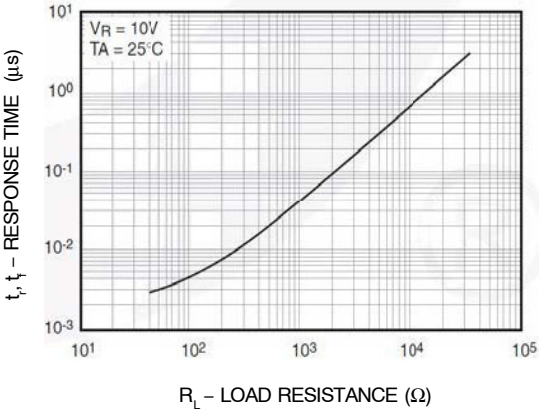


Figure 6. Response Time vs. Load Resistance

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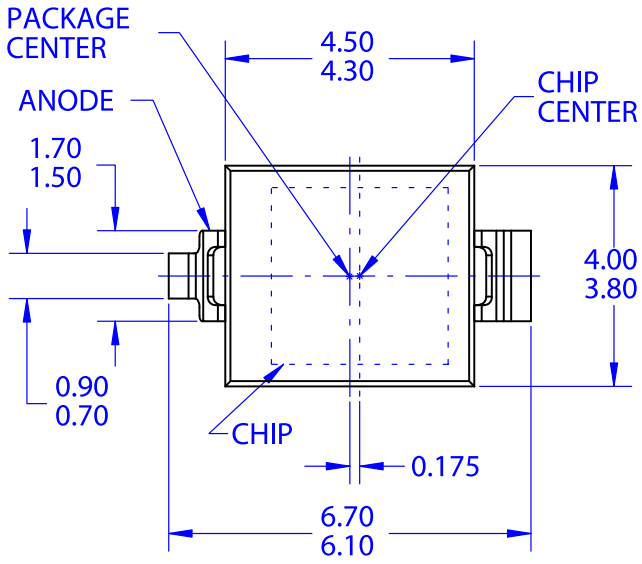
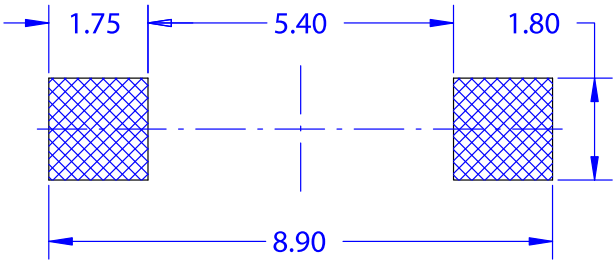
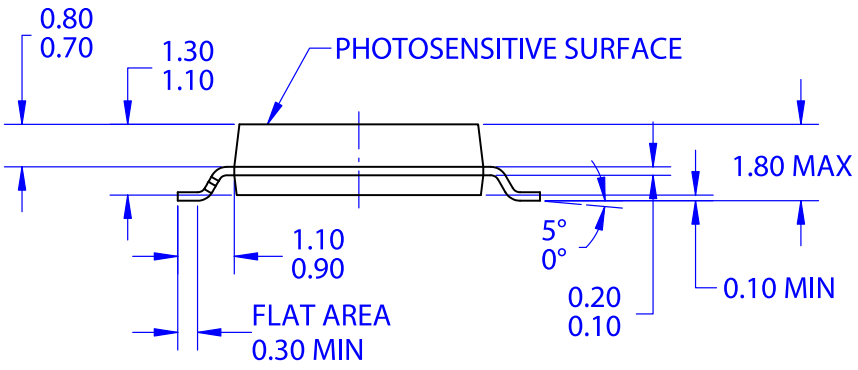


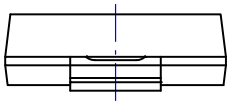
TOP VIEW



LAND PATTERN RECOMMENDATION



FRONT VIEW



SIDE VIEW

NOTES:
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PLCC 2 LEAD
CASE 776AY
ISSUE O

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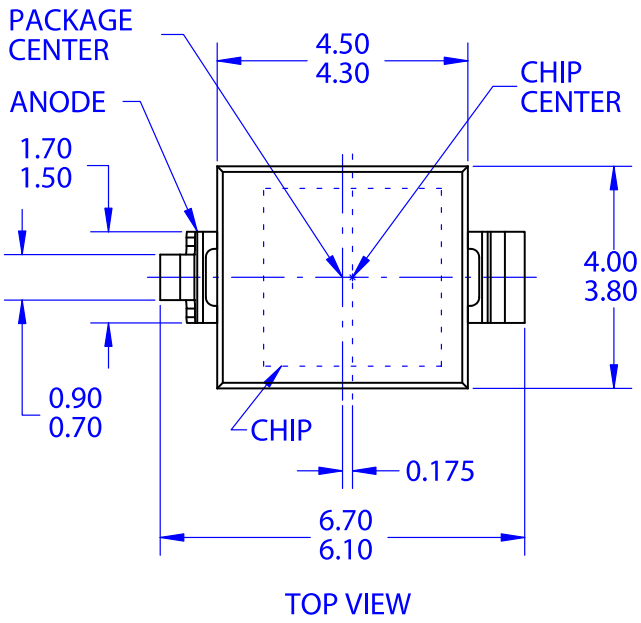
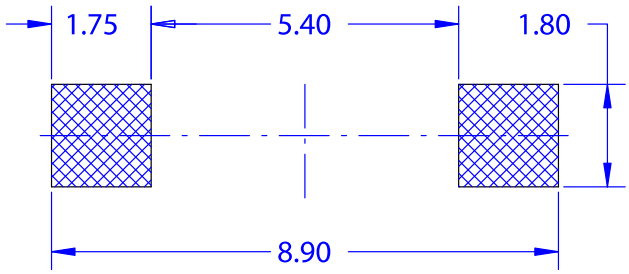


TOP VIEW



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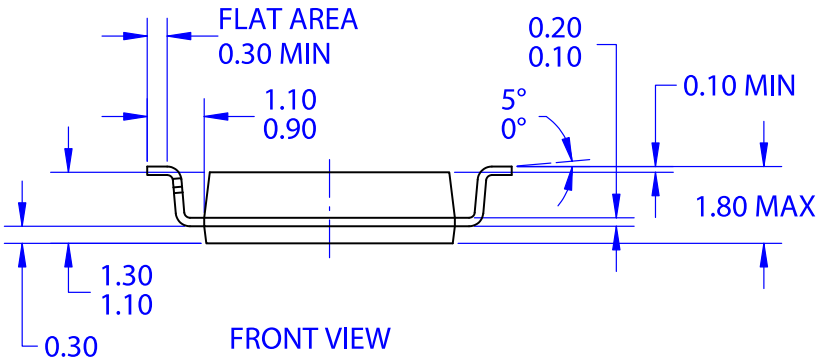
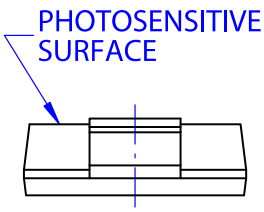


FRONT VIEW



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