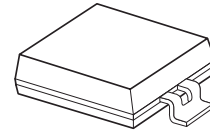


# Surface-Mount Silicon Pin Photodiode

## QSB34GR, QSB34ZR, QSB34CGR, QSB34CZR



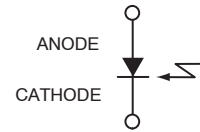
PLCC 2 LEAD  
CASE 776AX

PLCC 2 LEAD  
CASE 776AY

### 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

### SCHEMATIC



### ORDERING INFORMATION

Part Number	Operating Temperature	Package	Shipping <sup>†</sup>
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)	

<sup>†</sup>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.

# QSB34GR, QSB34ZR, QSB34CGR, QSB34CZR

## 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  $\leq 5$  s.

## Recommended $I_R$ Reflow Soldering Profile

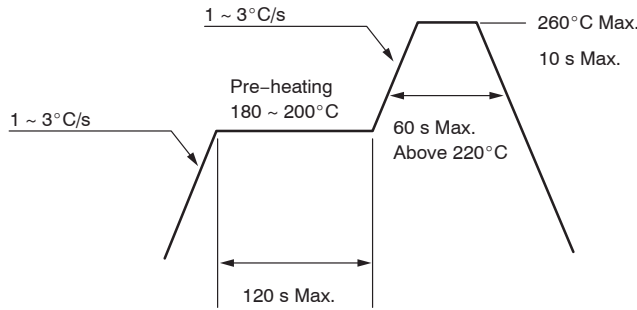


Figure 1. Recommended  $I_R$  Reflow Soldering Profile

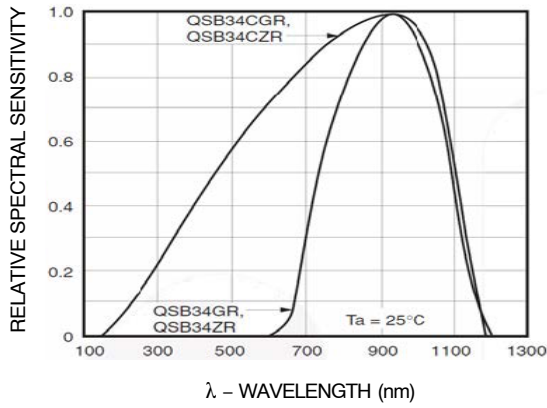
## ELECTRICAL / OPTICAL CHARACTERISTICS (Values are at $T_A = 25^\circ\text{C}$ unless specified otherwise)

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
$\lambda_{PK}$	Peak Sensitivity			940		nm
$\theta$	Reception Angle at 1/2 Power			$\pm 60$		°
$I_{PH}$	Photo Current	$E_E = 1$ mW/cm <sup>2</sup> , $V_{CE} = 5$ V	25	37		$\mu\text{A}$
C	Capacitance	$V_R = 3$ V		25		pF
$t_r$	Rise Time	$V_R = 10$ V, $R_L = 50$ $\Omega$		50		ns
$t_f$	Fall Time	$V_R = 10$ V, $R_L = 50$ $\Omega$		50		ns
$\lambda_{0.5}$	Special Sensitivity	QSB34GR, QSB34ZR	730		1100	nm
		QSB34CGR, QSB34CZR	400		1100	

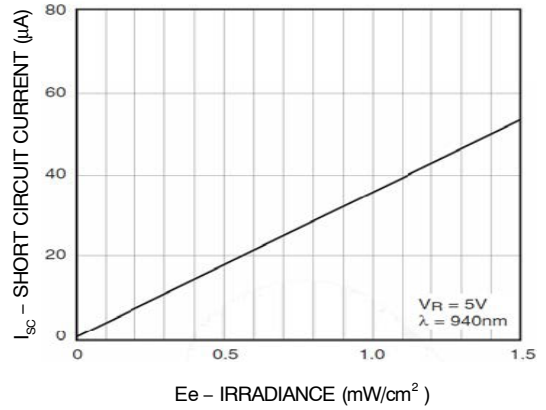
Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

# QSB34GR, QSB34ZR, QSB34CGR, QSB34CZR

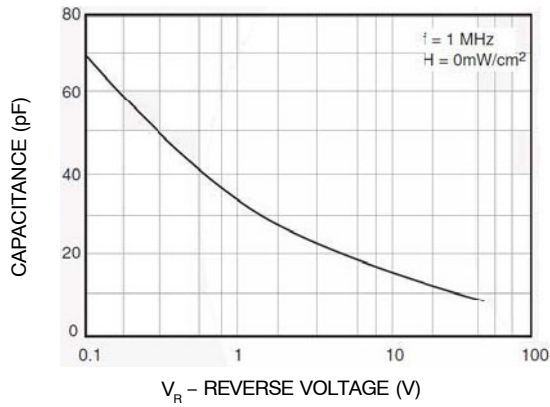
## TYPICAL PERFORMANCE CHARACTERISTICS



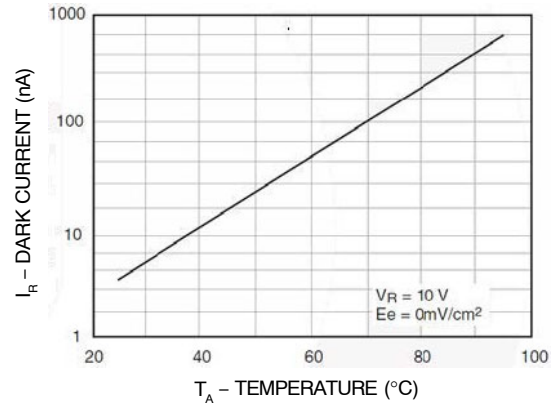
**Figure 1. Relative Spectral Sensitivity vs. Wavelength**



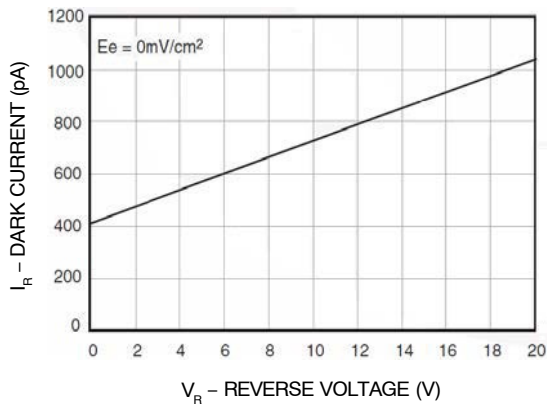
**Figure 2. Short Circuit Current vs. Irradiance**



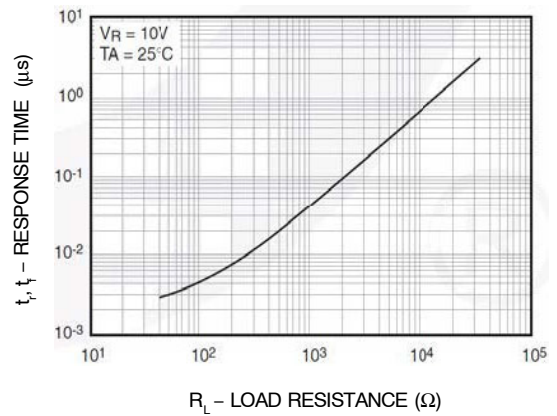
**Figure 3. Capacitance vs. Reverse Voltage**



**Figure 4. Dark Current vs. Temperature**



**Figure 5. Dark Current vs. Reverse Voltage**



**Figure 6. Response Time vs. Load Resistance**

# MECHANICAL CASE OUTLINE

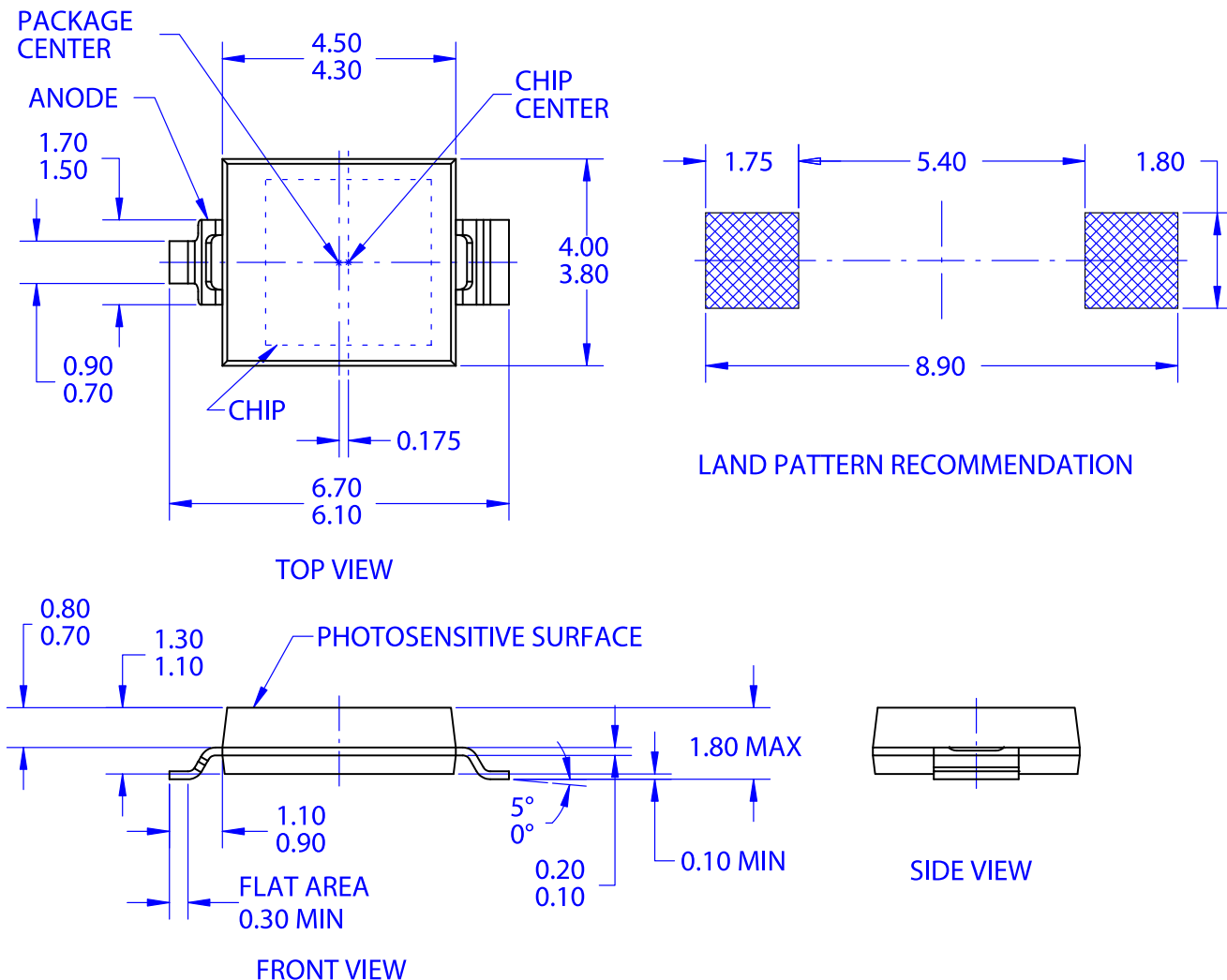
## PACKAGE DIMENSIONS

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PLCC 2 LEAD  
CASE 776AX  
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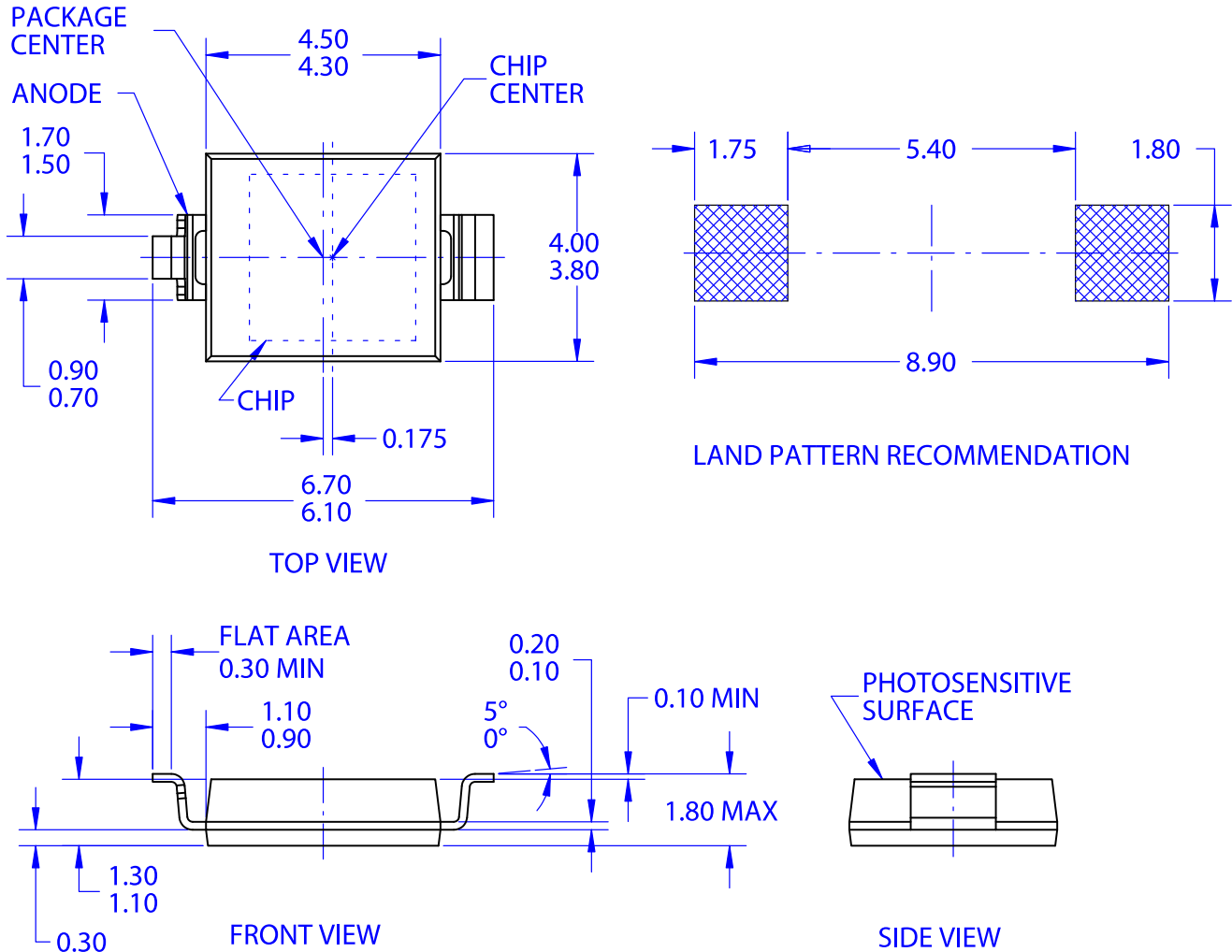
**MECHANICAL CASE OUTLINE**  
**PACKAGE DIMENSIONS**

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**PLCC 2 LEAD**  
**CASE 776AY**  
**ISSUE O**

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