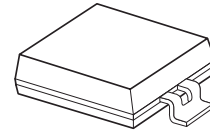


Surface-Mount Silicon Pin Photodiode

QSB34GR, QSB34ZR, QSB34CGR, QSB34CZR



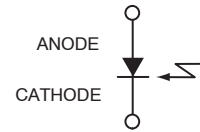
PLCC 2 LEAD
CASE 776AX

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 [†] |
|-------------|-----------------------|-----------------------------------|-----------------------|
| 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.

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 ≤ 5 s.

Recommended I_R Reflow Soldering Profile

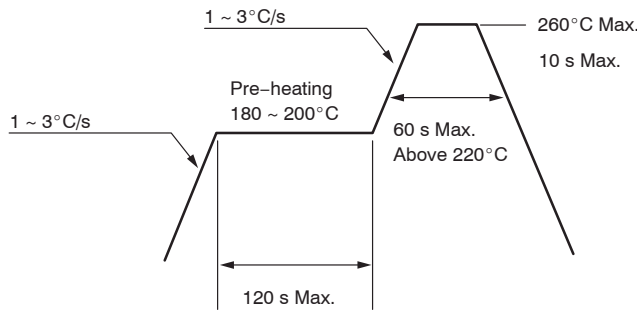


Figure 1. Recommended I_R Reflow Soldering Profile

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 |
| 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.

QSB34GR, QSB34ZR, QSB34CGR, QSB34CZR

TYPICAL PERFORMANCE CHARACTERISTICS

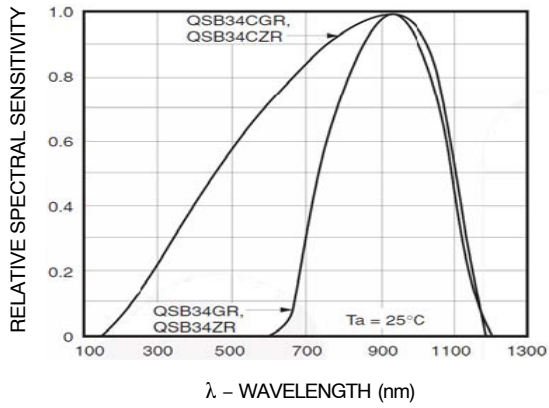


Figure 1. Relative Spectral Sensitivity vs. Wavelength

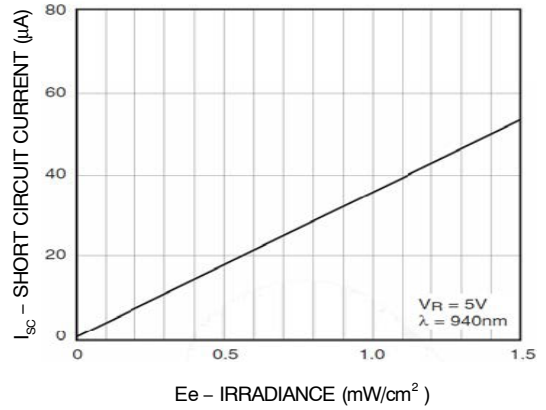


Figure 2. Short Circuit Current vs. Irradiance

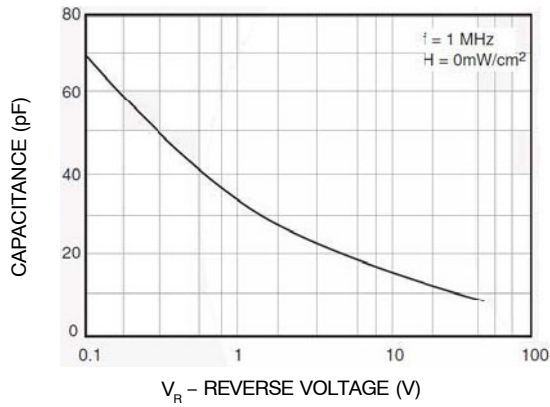


Figure 3. Capacitance vs. Reverse Voltage

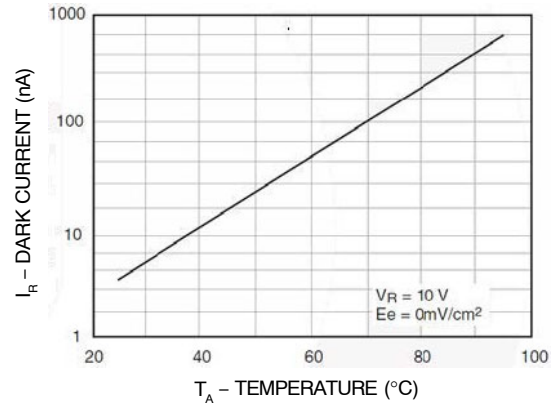


Figure 4. Dark Current vs. Temperature

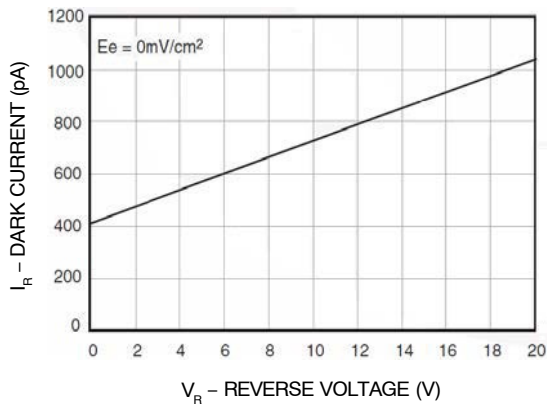


Figure 5. Dark Current vs. Reverse Voltage

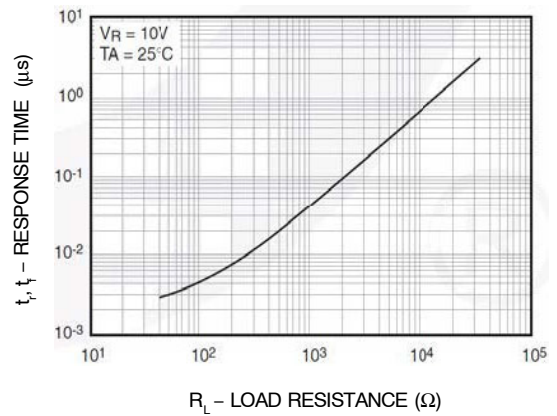
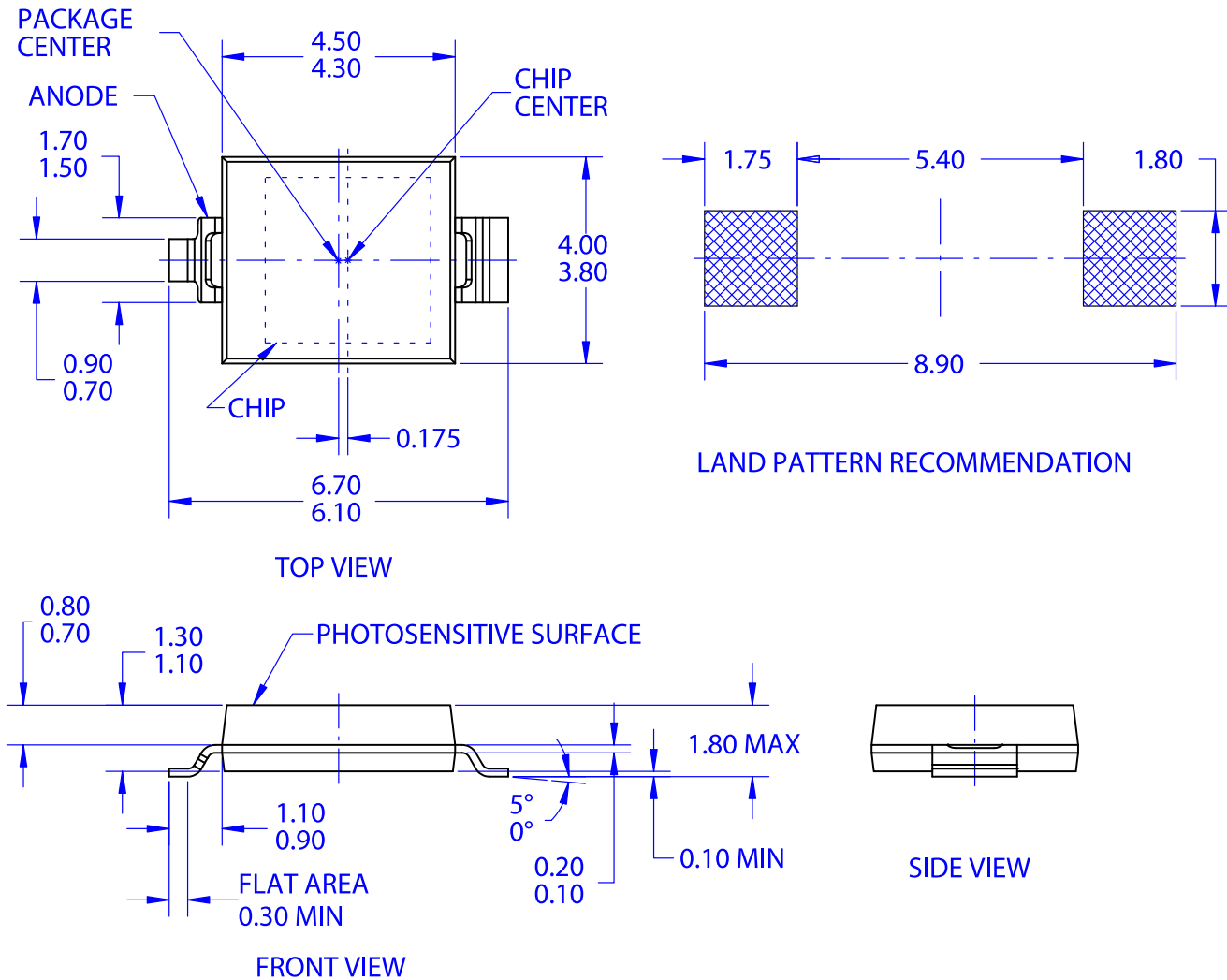


Figure 6. Response Time vs. Load Resistance

MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

PLCC 2 LEAD
CASE 776AX
ISSUE 0

DATE 28 FEB 2017



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 - C. DIMENSIONS DO NOT INCLUDE MOLD FLASH OR BURRS

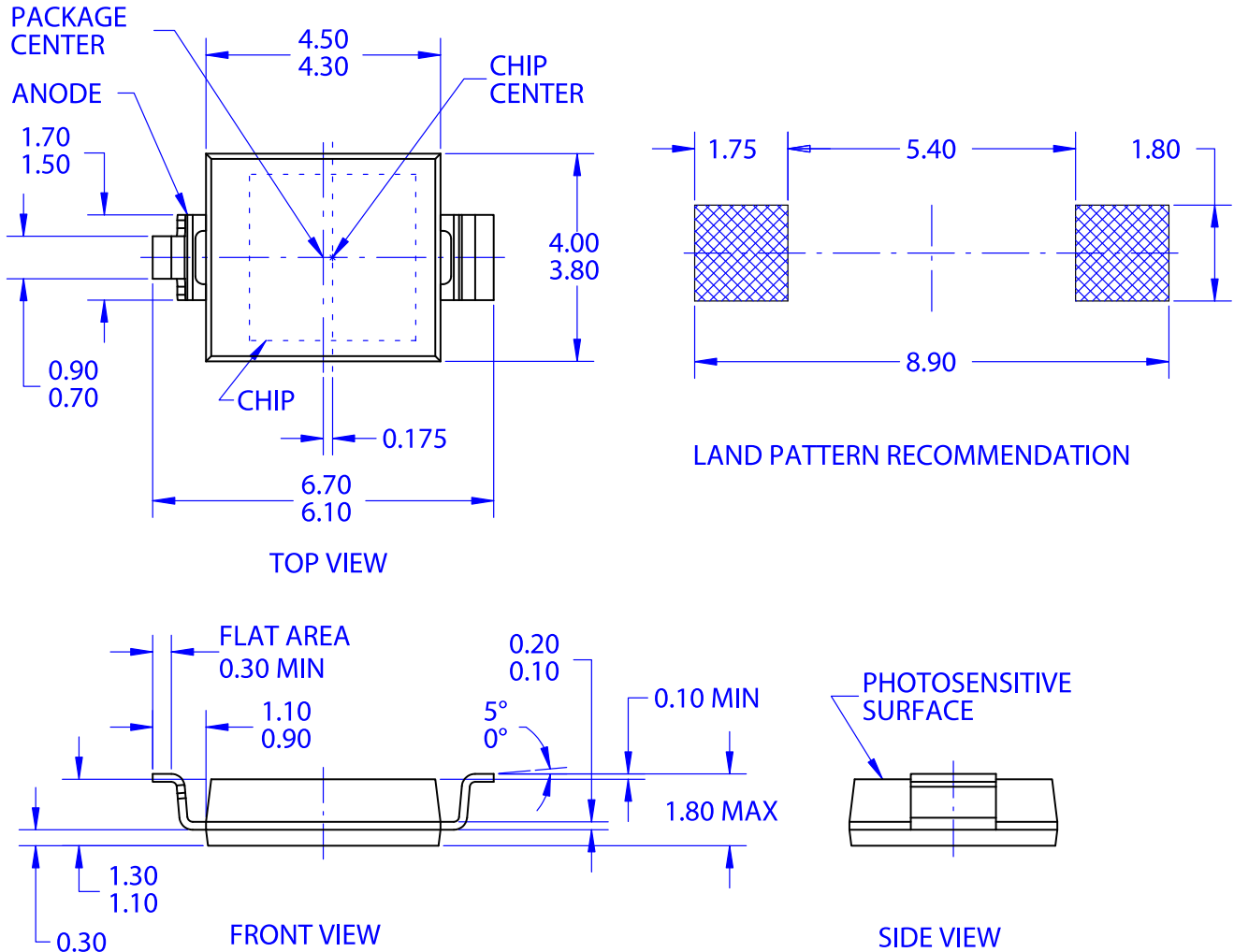
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MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

PLCC 2 LEAD
CASE 776AY
ISSUE O

DATE 28 FEB 2017



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