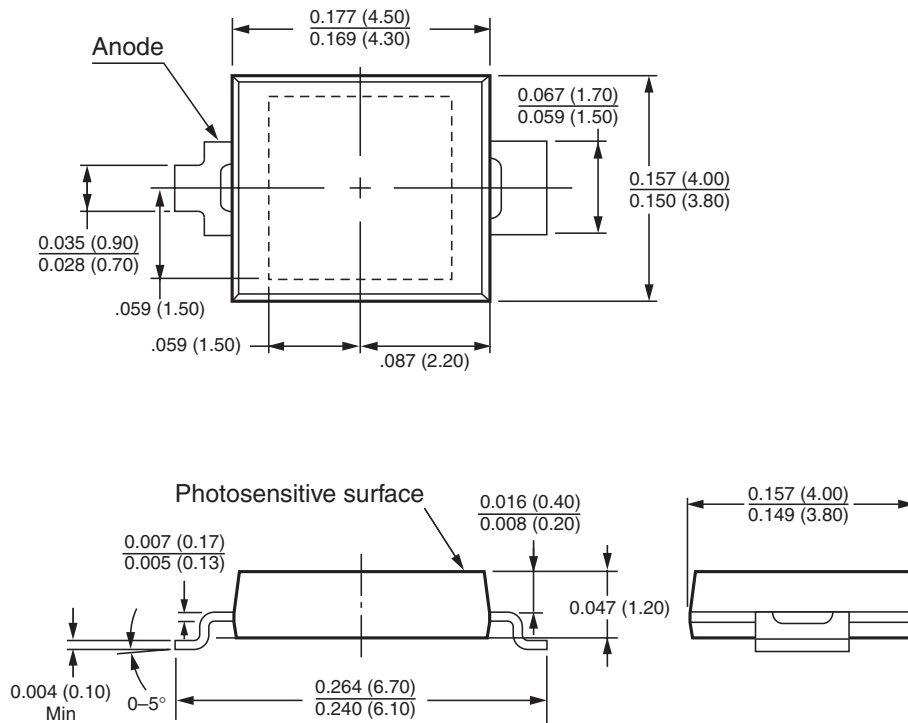


QSB34GR, QSB34ZR, QSB34CGR, QSB34CZR Surface Mount Silicon Pin Photodiode

Features

- Daylight Filter (QSB34GR and QSB34ZR only)
- Surface Mount Packages:
 - QSB34GR/QSB34CGR for overmount board
 - QSB34ZR/QSB34CZR for undermount board
- Fast PIN Photodiode
- Wide Reception Angle, 120°
- Large Chip Size = .014 in² (9 mm²)
- High Sensitivity
- Low Capacitance
- Available in 0.470" (12mm) width tape on 7" (178mm) diameter reel; 1,000 units per reel

Package Dimensions, QSB34GR



Note:

1. Dimensions for all drawings are in inches (mm).
2. Tolerance of ±.005 (.13) on all non-nominal dimensions unless otherwise specified.

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

Symbol	Parameter	Rating	Unit
T_{OPR}	Operating Temperature	-25 to +85	$^\circ\text{C}$
T_{STG}	Storage Temperature	-40 to +85	$^\circ\text{C}$
T_{SOL}	Soldering Temperature	260	$^\circ\text{C}$
V_R	Reverse Voltage	32	V
P_C	Power Dissipation at (or below) 25°C Free Air Temperature	150	mW

Note:

- Soldering time ≤ 5 seconds

Electrical/Optical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
V_R	Reverse Voltage	$I_R = 0.1\text{mA}$	32			V
$I_{R(D)}$	Dark Reverse Current	$V_R = 10\text{V}$			30	nA
λ_{PK}	Peak Sensitivity	$V_R = 5\text{V}$		940		nm
Θ	Reception Angle @ 1/2 Power			± 60		$^\circ$
I_{PH}	Photo Current	$E_e = 1.0\text{mW/cm}^2, V_{CE} = 5\text{V}^{(4)}$	25	37		μA
C	Capacitance	$V_R = 3\text{V}$		25		pF
t_r	Rise Time	$V_R = 10\text{V}, R_L = 50\Omega$		50		ns
t_f	Fall Time	$V_R = 10\text{V}, R_L = 50\Omega$		50		ns
$\lambda_{0.5}$	Spectral Sensitivity QSB34GR, QSB34ZR QSB34CGR, QSB34CZR		730 400		1100 1100	nm

Typical Performance Curves

Fig. 1 Relative Spectral Sensitivity vs. Wavelength

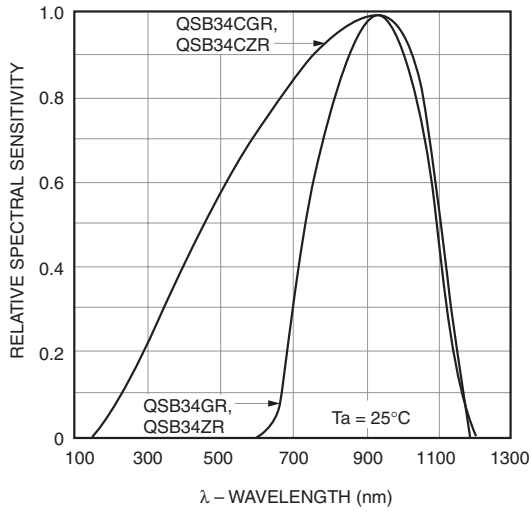


Fig. 2 Short Circuit Current vs. Irradiance

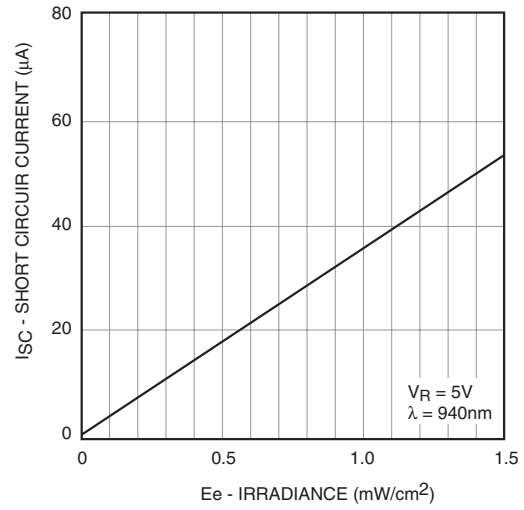


Fig. 3 Capacitance vs. Reverse Voltage

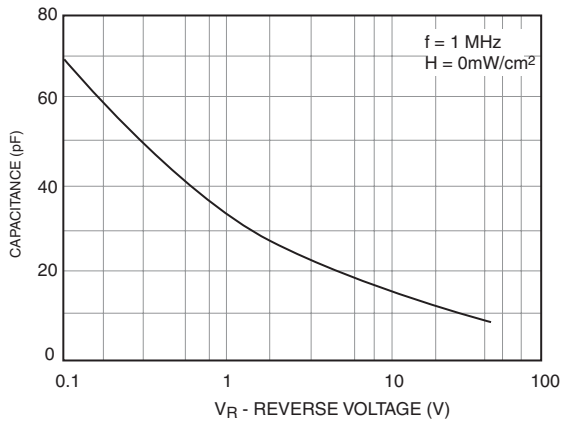


Fig. 4 Dark Current vs. Temperature

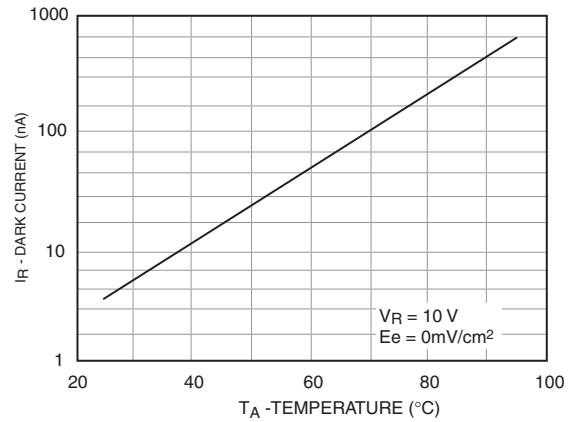


Fig. 5 Dark Current vs. Reverse Voltage

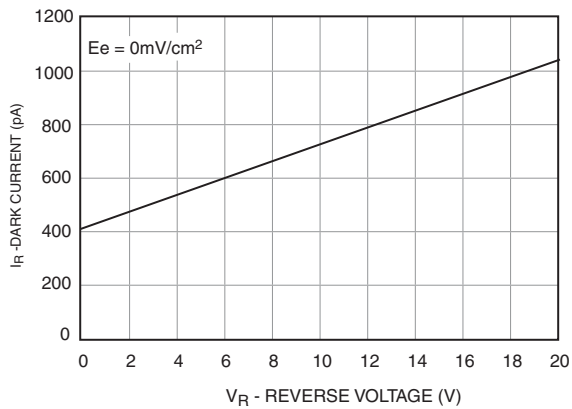
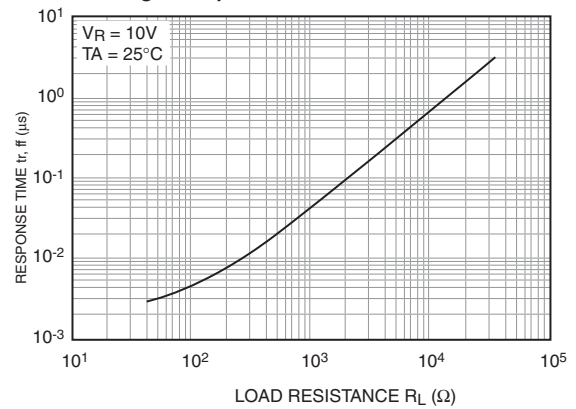
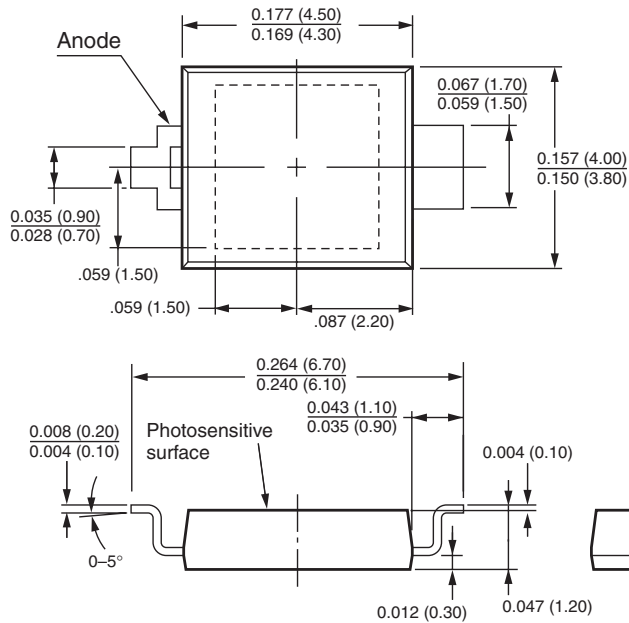


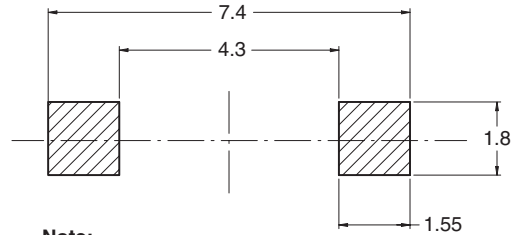
Fig. 6 Response Time vs. Load Resistance



Package Dimensions, QSB34ZR



Recommended Solder Screen Pattern (For Reference Only)

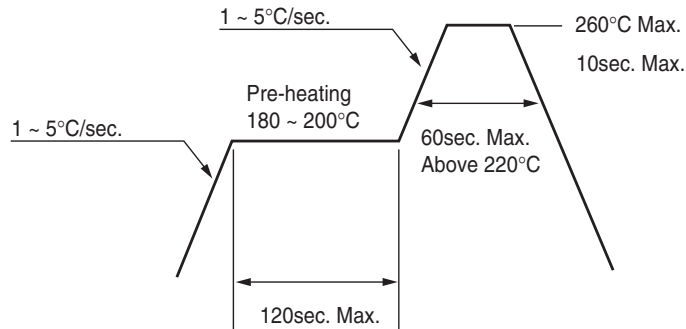


- Note:**
 1. All dimensions in mm
 2. Pattern applies to both QSB34GR and QSB34Z

Note:

1. Dimensions for all drawings are in inches (mm).
2. Tolerance of ± 0.005 (.13) on all non-nominal dimensions unless otherwise specified.

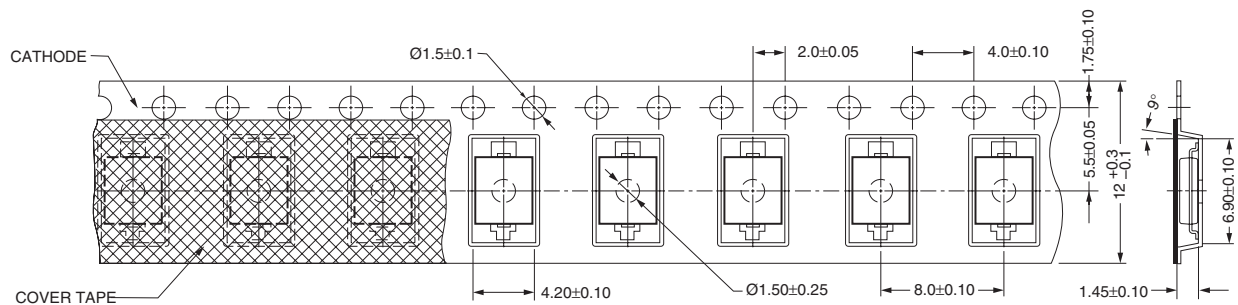
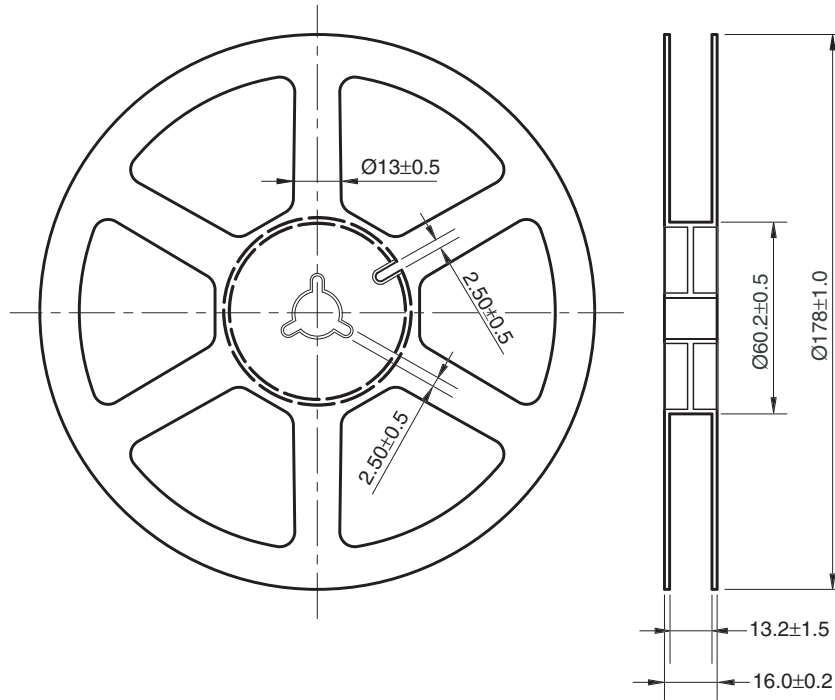
Recommend IR Reflow Soldering Profile



Ordering Information

Option	Description
QSB34GR	Gullwing, 1000 units per reel
QSB34ZR	Z-Bend reversed, 1000 units per reel
QSB34CGR	Gullwing, 1000 units per reel
QSB34CZR	Z-Bend reversed, 1000 units per reel

Tape & Reel Dimensions



Unit: mm

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EnSigna™	LittleFET™	PowerTrench®	TCM™	
FACT®	MICROCOUPLER™	QFET®	TinyBoost™	
FAST®	MicroFET™	QS™	TinyBuck™	
FASTr™	MicroPak™	QT Optoelectronics™	TinyPWM™	
FPS™	MICROWIRE™	Quiet Series™	TinyPower™	
FRFET™	MSX™	RapidConfigure™	TinyLogic®	
	MSXPro™	RapidConnect™	TINYOPTO™	
Across the board. Around the world.™		µSerDes™	TruTranslation™	
The Power Franchise®		ScalarPump™	UHC®	
Programmable Active Droop™				

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PRODUCT STATUS DEFINITIONS

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No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.
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