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QSE1103 Plastic Silicon Photosensor

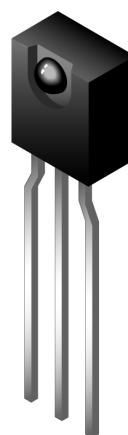
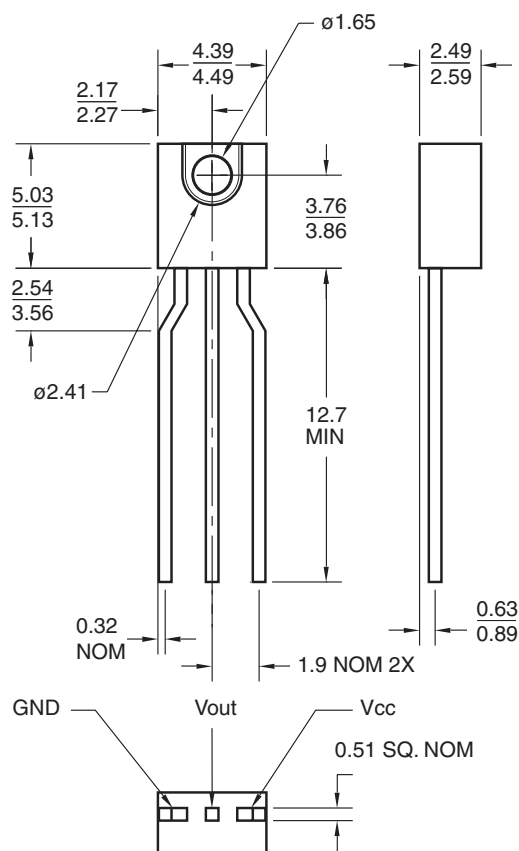
Features

- Bipolar silicon IC
- Package type: Sidelooker
- Medium wide reception angle, 50°
- Package material and color: black epoxy
- Daylight filter
- High sensitivity

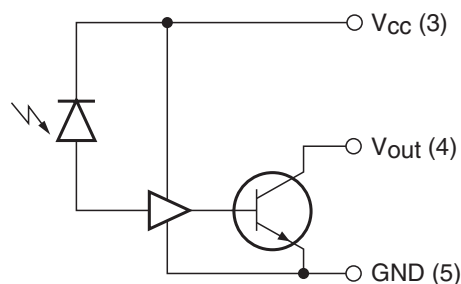
Description

The QSE1103 is a detector IC which features a photodiode, an amplifier, and an open collector output stage.

Package Dimensions



Schematic



Notes:

1. Dimensions for all drawings are in millimeters.

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

Symbol	Parameter	Rating	Unit
T_{OPR}	Operating Temperature	-40 to +85	$^\circ\text{C}$
T_{STG}	Storage Temperature	-40 to +100	$^\circ\text{C}$
T_{SOL-I}	Soldering Temperature (Iron) ^(2,3,4)	240 for 5 sec	$^\circ\text{C}$
T_{SOL-F}	Soldering Temperature (Flow) ^(2,3)	260 for 10 sec	$^\circ\text{C}$
I_O	Output Current	50	mA
V_{CC}	Supply Voltage	4.5 to 5.5	V
V_O	Output Voltage	7	V
P_D	Power Dissipation ⁽¹⁾	100	mW

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

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
E_e	Threshold Irradiance ⁽⁵⁾				8	mW/cm^2
I_{OH}	High Level Output Current	$V_{CC} = 5.5\text{V}$, $V_{OH} = 5.5\text{V}$, $E_e = 0$			2	μA
V_{OL}	Low Level Output Voltage	$I_{OL} = 13\text{mA}$, $V_{CC} = 5.5\text{V}$, $E_e = 1.0\text{mW}/\text{cm}^2$ ⁽⁵⁾			0.6	V
I_{CCH}	High Level Supply Current	$V_{CC} = 5.5\text{V}$, $E_e = 0$			15	mA
I_{CCL}	Low Level Supply Current	$V_{CC} = 5.5\text{V}$, $E_e = 1.0\text{mW}/\text{cm}^2$ ⁽⁵⁾			18	mA
t_r	Output Rise Time (10–90%)	$R_L = 350\Omega$, $C_L = 15\text{pF}$		25		ns
t_f	Output Fall Time (90–10%)	$R_L = 350\Omega$, $C_L = 15\text{pF}$		20		ns

Notes:

1. Derate power dissipation linearly $2.50\text{mW}/^\circ\text{C}$ above 25°C .
2. RMA flux is recommended.
3. Methanol or isopropyl alcohols are recommended as cleaning agents.
4. Soldering iron 1/16" (1.6mm) minimum from housing.
5. $\lambda = 880\text{nm}$ (AlGaAs).

Typical Performance Curves

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