

QSE243

Low Light Rejection Plastic Silicon Infrared PhotoTransistor

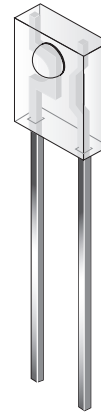
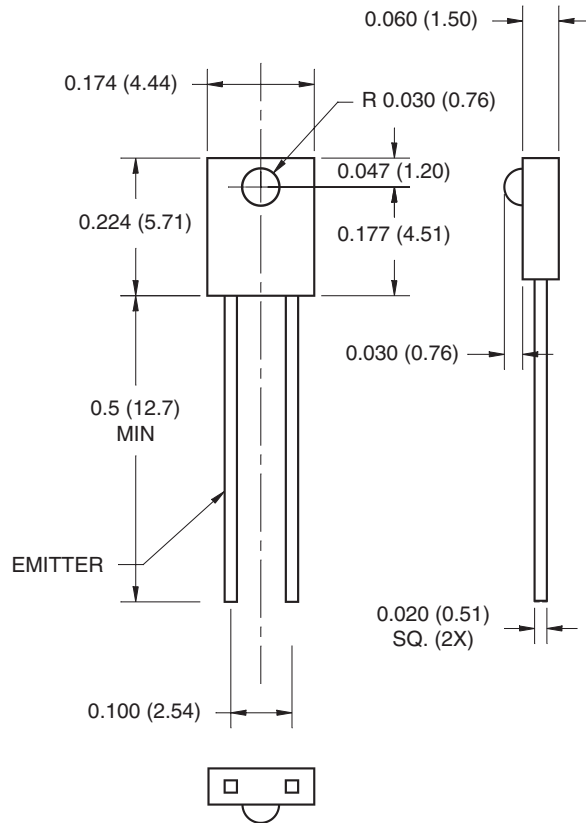
Features

- NPN Silicon Phototransistor with internal base-emitter resistance
- Package Type: Sidelooker
- Medium Reception Angle, 50°
- Clear Plastic Package
- Matching Emitter: QEE213

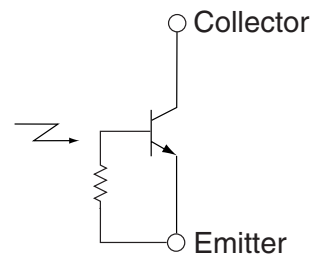
Description

The QSE243 is a silicon phototransistor with low light level rejection, encapsulated in a medium angle, thin clear plastic sidelooker package.

Package Dimensions



Schematic



NOTES:

1. Dimensions for all drawings are in inches (mm).
2. Tolerance of $\pm .010$ (.25) on all non-nominal dimensions unless otherwise specified.

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

Parameter	Symbol	Rating	Unit
Operating Temperature	T_{OPR}	-40 to +100	$^\circ\text{C}$
Storage Temperature	T_{STG}	-40 to +100	$^\circ\text{C}$
Soldering Temperature (Iron) ^(2,3,4)	$T_{\text{SOL-I}}$	240 for 5 sec	$^\circ\text{C}$
Soldering Temperature (Flow) ^(2,3)	$T_{\text{SOL-F}}$	260 for 10 sec	$^\circ\text{C}$
Collector-Emitter Voltage	V_{CE}	30	V
Emitter-Collector Voltage	V_{EC}	5	V
Power Dissipation ⁽¹⁾	P_{D}	100	mW

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

Parameter	Test Conditions	Symbol	Min	Typ	Max	Units
Peak Sensitivity		λ_{PS}	—	880	—	nm
Reception Angle		Q	—	± 25	—	Deg.
Collector Emitter Dark Current	$V_{\text{CE}} = 15 \text{ V}, E_e = 0$	I_{D}	—	—	100	nA
Collector Emitter Breakdown	$I_{\text{C}} = 100 \mu\text{A}$	BV_{CEO}	30	—	—	V
Saturation Voltage	$E_e = 1 \text{ mW/cm}^2, I_{\text{C}} = 0.1 \text{ mA}^{(5)}$	$V_{\text{CE(SAT)}}$	—	—	0.4	V
Rise Time	$V_{\text{CC}} = 5 \text{ V}, R_{\text{L}} = 1000 \text{ V}$	t_{r}	—	15	—	μs
Fall Time	$I_{\text{C}} = 1 \text{ mA}$	t_{f}	—	15	—	μs
Light Current Slope ⁽⁶⁾	$V_{\text{CE}} = 5 \text{ V}, E_{e1} = 1 \text{ mW/cm}^2^{(5)}$ $E_{e2} = 0.5 \text{ mW/cm}^2^{(5)}$	I_{LS}	1.0			mA/mW/cm^2
Knee Point ^(5,7)	$V_{\text{CE}} = 5 \text{ V}$	E_{ek}		0.125		mW/cm^2

Notes:

- Derate power dissipation linearly 1.33 mW/ $^\circ\text{C}$ above 25 $^\circ\text{C}$.
- RMA flux is recommended.
- Methanol or isopropyl alcohols are recommended as cleaning agents.
- Soldering iron 1/16" (1.6 mm) minimum from housing.
- $\lambda = 950 \text{ nm}$ GaAs.
- The slope is defined by $(I_{\text{C1}} - I_{\text{C2}}) / (E_{e1} - E_{e2})$ where I_{C1} is the collector current at E_{e1} and I_{C2} the collector current at E_{e2} .
- Knee point is defined as being required to increase I_{C} to 50 μA .

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