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March 2006

QSE213C/QSE214C
Plastic Silicon Infrared Phototransistor

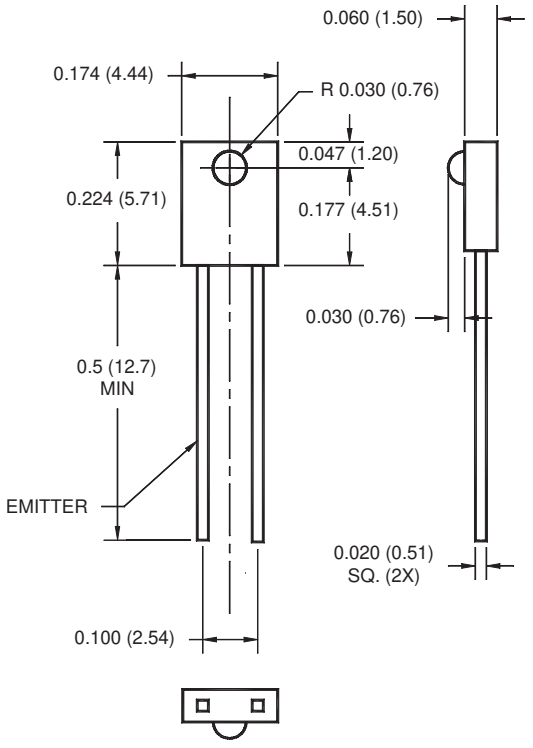
Features

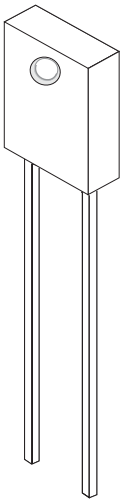
- NPN Silicon Phototransistor
- Package Type: Sidelooker
- Medium Reception Angle, 50°
- Daylight Filter
- Clean Epoxy Package
- Matching Emitter: QEE213

Description

The QSE213C/QSE214C is a silicon phototransistor encapsulated in a medium angle, infrared transparent, clear thin plastic sidelooker package.

Package Dimensions

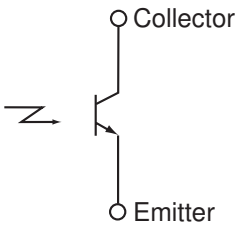




Notes:

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

Schematic



Absolute Maximum Ratings (T_A = 25°C unless otherwise specified)

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

Electrical/Optical Characteristics (T_A =25°C unless otherwise specified)

Symbol	Parameter	Test Conditions		Min	Typ	Max	Units
λ_{PS}	Peak Sensitivity			—	880	—	nM
Q	Reception Angle			—	±25	—	°
I_D	Collector Emitter Dark Current	V_{CE} = 10 V, E_e = 0		—	—	100	nA
BV_{CEO}	Collector Emitter Breakdown	I_C = 1mA		30	—	—	V
BV_{ECO}	Emitter Collector Breakdown	I_E = 100µA		5	—	—	V
$I_{C(ON)}$	On-State Collector Current	E_e = 0.5 mW/cm^2, V_{CE} = 5V	(QSE213C)	0.2	—	1.50	mA
			(QSE214C)	1.00	—	—	
$V_{CE(SAT)}$	Saturation Voltage	V_{CE} = 5 V[5], E_e = 0.5mW/cm^2, I_C = 0.1mA[5]		—	—	0.4	V
t_r	Rise Time	V_{CC} = 5V, R_L = 100Ω, I_C = 1mA		—	8	—	µs
t_f	Fall Time			—	8	—	

Notes:

1. Derate power dissipation linearly 1.33 mW/°C above 25°C.
2. RMA flux is recommended.
3. Methanol or isopropyl alcohols are recommended as cleaning agents.
4. Soldering iron 1/16" (1.6 mm) minimum from housing.
5. λ = 950 nm GaAs.

Typical Performance Curves

Fig. 1 Dark Current vs. Collector Emitter Voltage

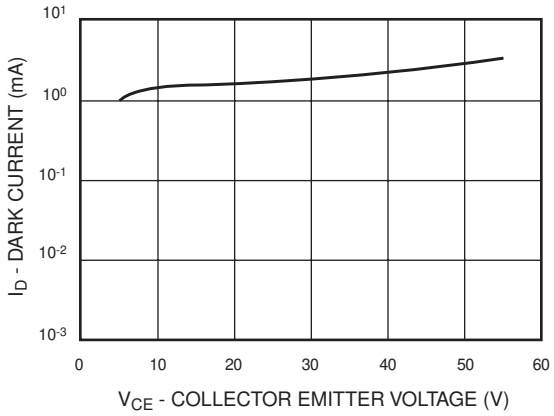


Fig. 2 Radiation Diagram

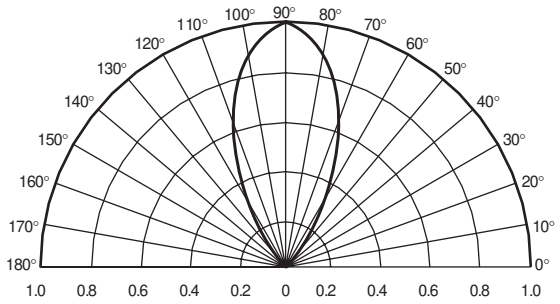


Fig. 3 Light Current vs. Ambient Temperature

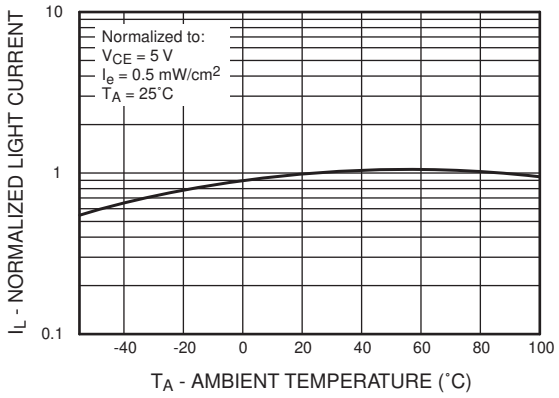


Fig. 4 Light Current vs. Collector to Emitter Voltage

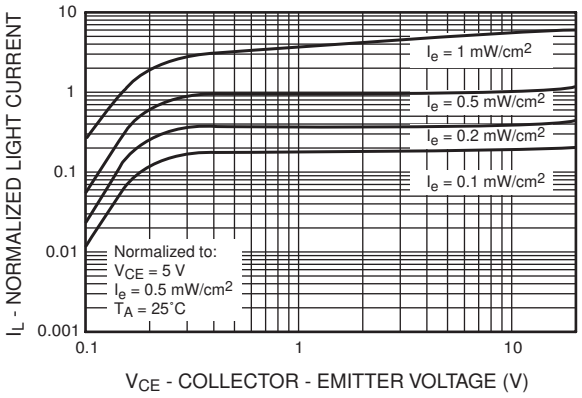
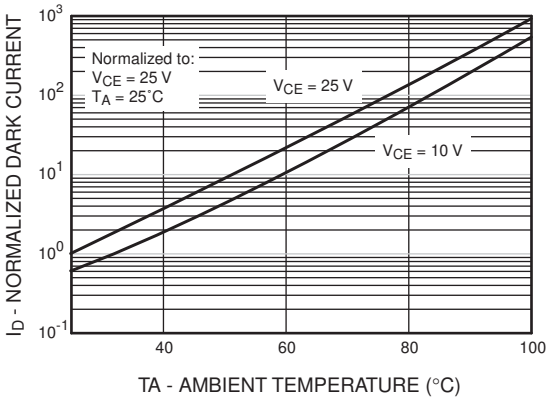


Fig. 5 Dark Current vs. Ambient Temperature



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EnSigna™	ImpliedDisconnect™	OCXPro™	ScalarPump™	UniFET™
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FACT Quiet Series™		OPTOPLANAR™	SMART START™	Wire™
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		PowerEdge™	SuperSOT™-3	

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Rev. I18