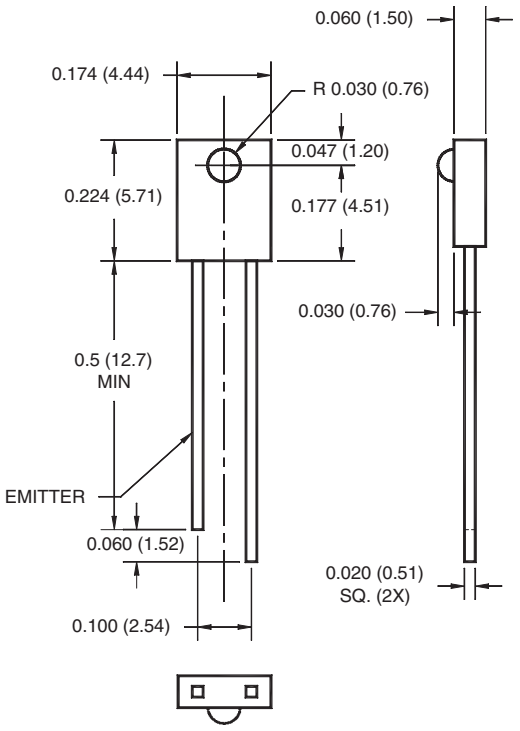
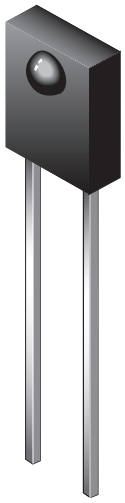
PLASTIC SILICON INFRARED PHOTOTRANSISTOR

QSE213 QSE214

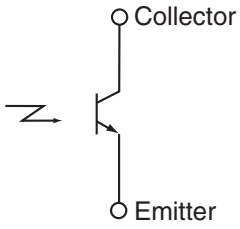
PACKAGE DIMENSIONS



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



SCHEMATIC



DESCRIPTION

The QSE213/QSE214 is a silicon phototransistor encapsulated in a medium angle, infrared transparent, black thin plastic side-looker package.

FEATURES

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

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ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise specified)

Parameter	Symbol	Rating	Unit
Operating Temperature	T_{OPR}	-40 to +100	°C
Storage Temperature	T_{STG}	-40 to +100	°C
Soldering Temperature (Iron)(2,3,4)	T_{SOL-I}	240 for 5 sec	°C
Soldering Temperature (Flow)(2,3)	T_{SOL-F}	260 for 10 sec	°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°C unless otherwise specified)

Parameter	Test Conditions		Symbol	Min	Typ	Max	Units
Peak Sensitivity			λ_{PS}	—	880	—	nM
Reception Angle			Θ	—	±25	—	Deg.
Collector Emitter Dark Current	V_{CE} = 10 V, E_e = 0		I_D	—	—	100	nA
Collector Emitter Breakdown	I_C = 1 mA		BV_{CEO}	30	—	—	V
Emitter Collector Breakdown	I_E = 100 µA		BV_{ECO}	5	—	—	V
On-State Collector Current	E_e = 0.5 mW/cm^2, V_{CE} = 5 V	(QSE213)	$I_{C(ON)}$	0.2	—	1.50	mA
		(QSE214)		1.00	—	—	
Saturation Voltage	V_{CE} = 5 V(5) E_e = 0.5 mW/cm^2, I_C = 0.1 mA(5)		$V_{CE(SAT)}$	—	—	0.4	V
Rise Time	V_{CC} = 5V, R_L = 100Ω, I_C = 1mA		t_r	—	8	—	µs
Fall Time			t_f	—	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.

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TYPICAL PERFORMANCE CURVES

Fig.1 Dark Current vs. Collector Emitter Voltage

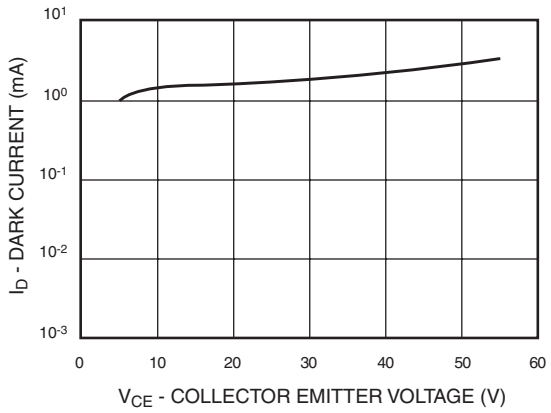


Fig.2 Radiation Diagram

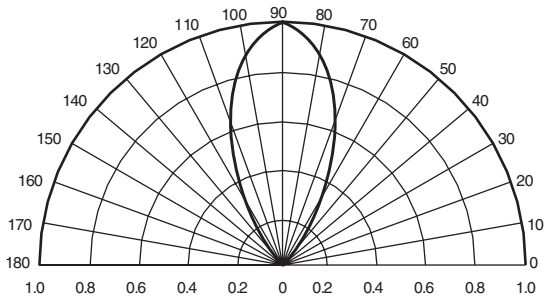


Fig.3 Light Current vs. Ambient Temperature

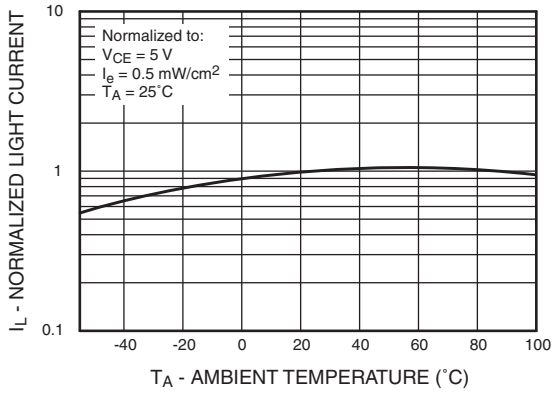


Fig.4 Light Current vs. Collector to Emitter Voltage

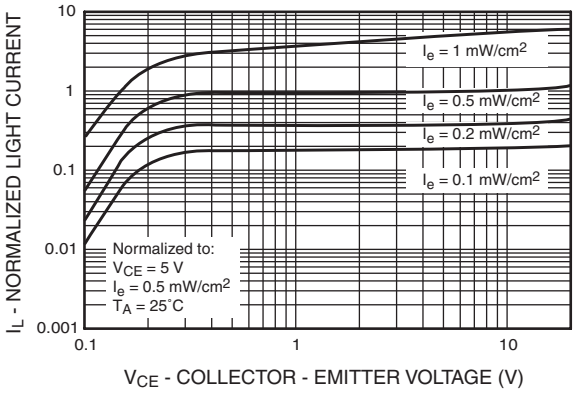
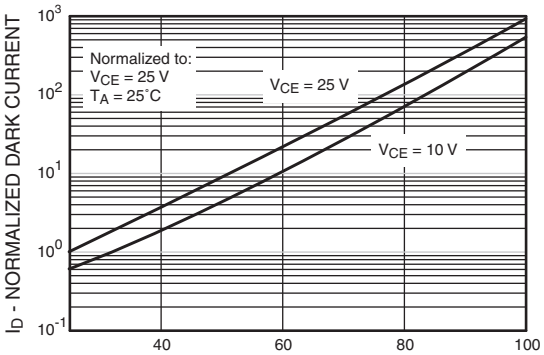


Fig.5 Dark Current vs. Ambient Temperature



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