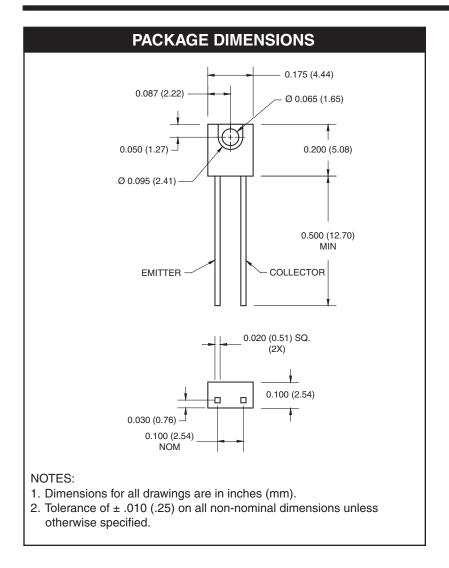
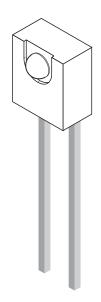
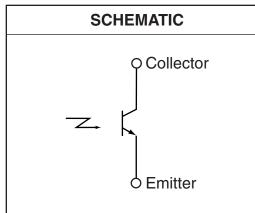


QSE113 QSE114







DESCRIPTION

The QSE113/114 is a silicon phototransistor encapsulated in a wide angle, infrared transparent, black plastic sidelooker package.

FEATURES

- · NPN silicon phototransistor
- · Package type: Sidelooker
- Medium wide reception angle, 50°
- · Package material and color: black epoxy
- · Matched emitter: QEE113
- Daylight filter
- · High sensitivity



QSE113 QSE114

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					

NOTES:

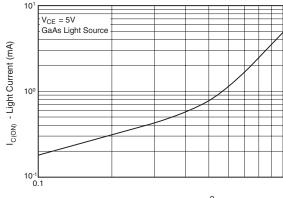
- 1. Derate power dissipation linearly 1.33 mW/°C above 25°C.
- 2. RMA flux is recommended.
- 3. Methanol or isopropyl alcohols are recommended as cleaning agents.
- 4. Soldering iron 1/16" (1.6 mm) minimum from housing.
- 5. $\lambda = 880 \text{ nm (AlGaAs)}$.

ELECTRICAL / OPTICAL CHARACTERISTICS (T _A =25°C unless otherwise specified)								
Parameter	Test Conditions	Symbol	Min	Тур	Max	Units		
Peak Sensitivity		λ_{PS}	_	880	_	nM		
Reception Angle		Θ	_	±25	_	Deg.		
Collector Emitter Dark Current	$V_{CE} = 10 \text{ V}, E_{e} = 0$	I _{CEO}	_	_	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 ⁽⁵⁾ QSE113	$E_{e} = 0.5 \text{ mW/cm}^{2}, V_{CE} = 5 \text{ V}$	I _{C(ON)}	0.25	_	1.50	mA		
On-State Collector Current ⁽⁵⁾ QSE114	$E_{e} = 0.5 \text{ mW/cm}^{2}, V_{CE} = 5 \text{ V}$	I _{C(ON)}	1.00	_	_	mA		
Saturation Voltage ⁽⁵⁾	$E_e = 0.5 \text{ mW/cm}^2$, $I_C = 0.1 \text{ mA}$	V _{CE(SAT)}	_	_	0.4	V		
Rise Time	$I_C = 1 \text{mA}, V_{CC} = 5 \text{V}, R_L = 100 \Omega$	t _r	_	8	_	μs		
Fall Time		t _f	_	8	_	μs		



QSE113 QSE114

Figure 1. Light Current vs. Radiant Intensity



E_e - Radiant Intensity (mW/cm²)

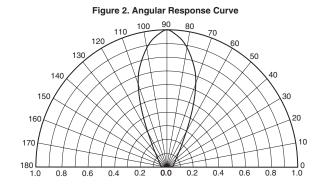


Figure 3. Dark Current vs. Collector - Emitter Voltage

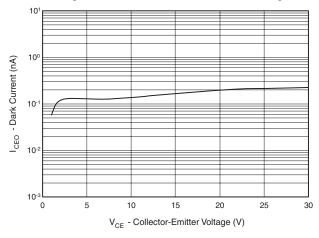


Figure 4. Light Current vs. Collector - Emitter Voltage

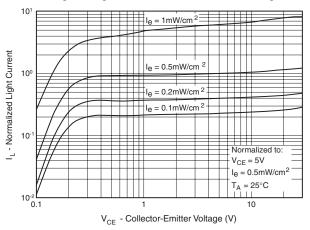
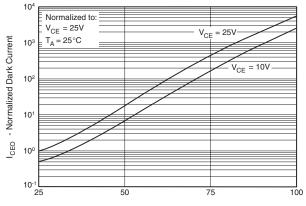


Figure 5. Dark Current vs. Ambient Temperature



T_A - Ambient Temperature (°C)



QSE113 QSE114

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