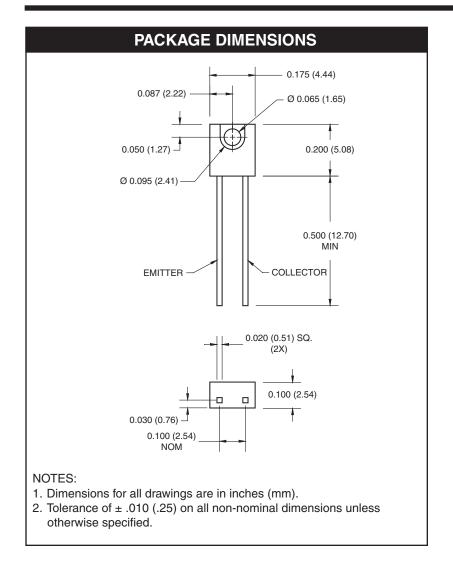
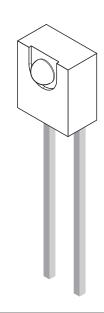
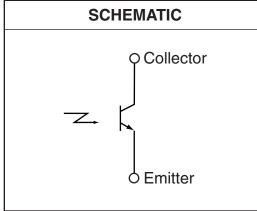


QSE113 QSE114







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:

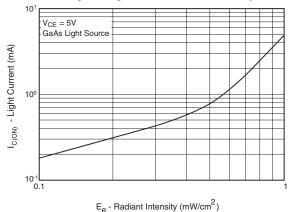
- 1. Derate power dissipation linearly 1.33 mW/°C above 25°C.
- 2. RMA flux is recommended.
- 3. Methanol or isopropyl alcohols are recommended as cleaning agents.
- 4. Soldering iron 1/16" (1.6 mm) minimum from housing.
- 5. λ = 880 nm (AlGaAs).

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	Ι _Ε = 100 μΑ	BV _{ECO}	5	_	_	V			
On-State Collector Current ⁽⁵⁾ QSE113	$E_{\rm e} = 0.5 \; {\rm mW/cm^2}, {\rm V_{CE}} = 5 \; {\rm V}$	I _{C(ON)}	0.25	_	1.50	mA			
On-State Collector Current ⁽⁵⁾ QSE114	$E_{\rm e} = 0.5 \; {\rm mW/cm^2}, {\rm V_{CE}} = 5 \; {\rm V}$	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	$I_C = 1$ mA, $V_{CC} = 5$ V, $R_L = 100$ Ω	t _r	_	8	_	μs			
Fall Time		t _f	_	8	_	μs			



QSE113 QSE114

Figure 1. Light Current vs. Radiant Intensity



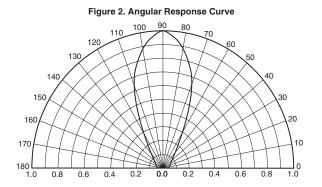


Figure 3. Dark Current vs. Collector - Emitter Voltage

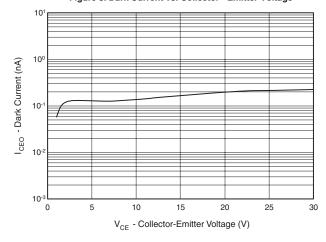


Figure 4. Light Current vs. Collector - Emitter Voltage

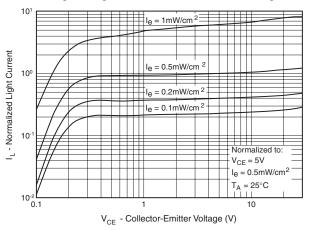
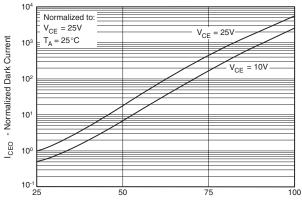


Figure 5. Dark Current vs. Ambient Temperature



T_A - Ambient Temperature (°C)



QSE113 QSE114

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