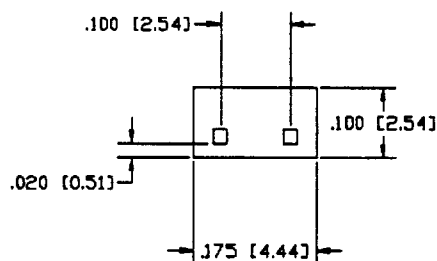
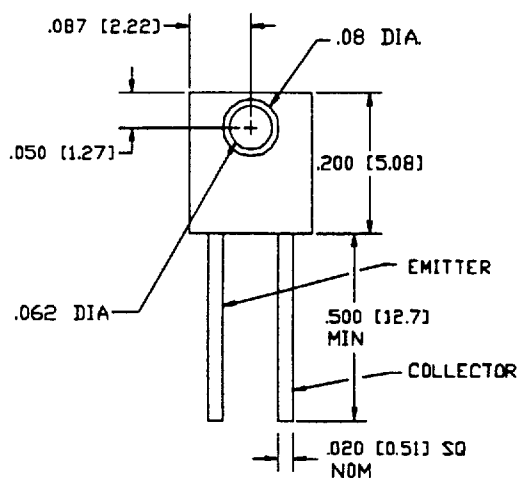


QSE112/113/114

PACKAGE DIMENSIONS



NOTES:
1. DIMENSIONS ARE IN INCHES [MM].
2. TOLERANCE IS ± 0.010 [.25]
UNLESS OTHERWISE SPECIFIED.

DESCRIPTION

The QSE11X family is a silicon phototransistor encapsulated in a wide angle, infrared transparent, dark blue, plastic sidelooker shell package.

FEATURES

- Tight production distribution with 3:1 min/max ratio.
- Steel lead frames for improved reliability in solder mounting.
- Good optical-to-mechanical alignment.
- Plastic package is infrared transparent and tinted to attenuate visible light.
- Mechanically and spectrally matched to the QEE113 and QEE123 LEDs.
- Dark blue shell body allows easy recognition from LED.

QSE112/113/114

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ Unless Otherwise Specified)

Storage Temperature	- 40°C to + 100°C
Operating Temperature	- 40°C to + 100°C
Soldering:	
Lead Temperature (Iron)	240°C for 5 sec. (2,3,4,5)
Lead Temperature (Flow)	260°C for 10 sec. (2,3,5)
Collector-Emitter Breakdown Voltage	30 Volts
Emitter-Collector Breakdown Voltage	5.0 Volts
Power Dissipation	100 mW ⁽¹⁾

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless Otherwise Specified)
(All measurements made under pulse conditions.)

Parameter	Symbol	Min.	Typ.	Max.	Units	Test Conditions
Collector-Emitter Breakdown	BV_{CEO}	30		---	V	$I_C = 1\text{ mA}$
Emitter-Collector Breakdown	BV_{ECO}	5.0		---	V	$I_E = 100\text{ }\mu\text{A}$
Collector-Emitter Leakage	I_{CEO}	---		100	nA	$V_{CE} = 10\text{ V}$
Reception Angle at 1/2 Sensitivity	ϕ	---	± 8	---	Degrees	$E_e = 0.5\text{ mW/cm}^2, V_{CE} = 5\text{ V}$
On-State Collector Current QSE112	$I_{C(ON)}$.32		.96	mA	$E_e = 0.5\text{ mW/cm}^2, V_{CE} = 5\text{ V}^{(6)}$
On-State Collector Current QSE113	$I_{C(ON)}$.64		1.92	mA	$E_e = 0.5\text{ mW/cm}^2, V_{CE} = 5\text{ V}^{(6)}$
On-State Collector Current QSE114	$I_{C(ON)}$	1.28		3.84	mA	$E_e = 0.5\text{ mW/cm}^2, V_{CE} = 5\text{ V}^{(6)}$
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	---		0.4	V	$I_C = 0.4\text{ mA}, E_e = 0.5\text{ mW/cm}^2$
Rise Time	t_r	---	8.0	---	μS	$I_C = .15\text{ mA}, V_{CC} = 5\text{ V}, R_L = 100\Omega$
Fall Time	t_f	---	8.0	---	μS	$I_C = .15\text{ mA}, V_{CC} = 5\text{ V}, R_L = 100\Omega$

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 tip 1/16" (1.6 mm) minimum from housing.
5. As long as leads are not under any stress or spring tension.
6. Light source is a GaAlAs LED emitting light at a peak wavelength of 880 nm.