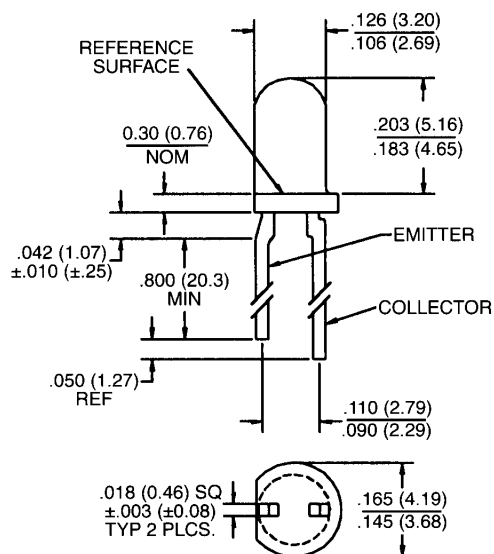




## PLASTIC SILICON PHOTOTRANSISTOR

### QSC112/113/114

#### PACKAGE DIMENSIONS



ST2142

#### NOTES:

1. DIMENSIONS ARE IN INCHES (mm).
2. TOLERANCE IS ±.010 (.25) UNLESS OTHERWISE SPECIFIED.
3. FLAT DENOTES CATHODE.

#### DESCRIPTION

The QSC11X is a silicon phototransistor encapsulated in an infrared transparent, black T-1 package.

#### FEATURES

- Tight production distribution.
- Steel lead frames for improved reliability in solder mounting.
- Good optical-to-mechanical alignment.
- Plastic package is infrared transparent black to attenuate visible light.
- Mechanically and spectrally matched to the QECXXX LED.
- Black plastic body allows easy recognition from LED.



## PLASTIC SILICON PHOTOTRANSISTOR

### 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. <sup>(2,3,4,5)</sup>
Lead Temperature (Flow)	260°C for 10 sec. <sup>(2,3,5)</sup>
Collector-Emitter Breakdown Voltage	30 Volts
Emitter-Collector Breakdown Voltage	5.0 Volts
Power Dissipation	100 mW <sup>(1)</sup>

### 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	$I_C = 1.0\text{ mA}$
Emitter-Collector Breakdown	$BV_{ECO}$	5.0	—	—	V	$I_E = 100\ \mu\text{A}$
Collector-Emitter Leakage	$I_{CEO}$	—	—	100	nA	$V_{CE} = 10\text{ V}$
Reception Angle at 1/2 Sensitivity	$\theta$	—	$\pm 8$	—	Degrees	
On-State Collector Current QSC112	$I_{C(ON)}$	1.0	—	4.0	mA	$E_e = 0.5\text{ mW/cm}^2, V_{CE} = 5\text{V}^{(6)}$
On-State Collector Current QSC113	$I_{C(ON)}$	2.4	—	9.6	mA	$E_e = 0.5\text{ mW/cm}^2, V_{CE} = 5\text{V}^{(6)}$
On-State Collector Current QSC114	$I_{C(ON)}$	4.0	—	—	mA	$E_e = 0.5\text{ mW/cm}^2, V_{CE} = 5\text{V}^{(6)}$
Rise Time	$t_r$	—	5.0	—	$\mu\text{S}$	$I_C = 2\text{ mA}, V_{CC} = 5\text{ V}, R_L = 100\ \Omega$
Fall Time	$t_f$	—	5.0	—	$\mu\text{S}$	$I_C = 2\text{ mA}, V_{CC} = 5\text{ V}, R_L = 100\ \Omega$
Saturation Voltage	$V_{CE(SAT)}$	—	—	0.40	V	$I_C = 0.50\text{ mA}, E_e = 0.5\text{ mW/cm}^2^{(6)}$

### NOTES

- Derate power dissipation linearly 1.33 mW/°C above 25°C.
- RMA flux is recommended.
- Methanol or Isopropyl alcohols are recommended as cleaning agents.
- Soldering iron tip 1/16" (1.6 mm) minimum from housing.
- As long as leads are not under any stress or spring tension.
- Light source is an AlGaAs LED emitting light at a peak wavelength of 880 nm.