

**DESCRIPTION**

The QSB363C is a silicon phototransistor encapsulated in a clear transparent T-3/4 package.

**FEATURES**

- NPN Silicon Phototransistor
- T-3/4 (2mm) Surface Mount Package
- Medium Wide Beam Angle, 24°
- Clear Plastic Package
- Matched Emitters: QEB363 or QEB373
- Tape & Reel Option (See Tape & Reel Specifications)
- Lead Form Options: Gullwing, Yoke, Z-Bend

**ABSOLUTE MAXIMUM RATINGS** ( $T_A = 25^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Rating	Unit
Operating Temperature	$T_{OPR}$	-40 to +85	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-40 to +85	$^\circ\text{C}$
Soldering Temperature (Iron) <sup>(2,3,4)</sup>	$T_{SOL-I}$	240 for 5 sec	$^\circ\text{C}$
Soldering Temperature (Flow) <sup>(2,3)</sup>	$T_{SOL-F}$	260 for 10 sec	$^\circ\text{C}$
Collector Emitter Voltage	$V_{CE}$	30	V
Emitter Collector Voltage	$V_{EC}$	5	V
Power Dissipation <sup>(1)</sup>	$P_D$	100	mW

**NOTES**

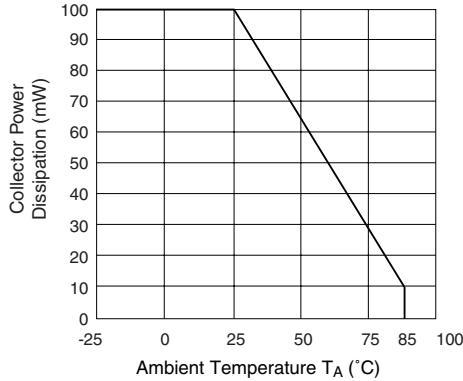
1. Derate power dissipation linearly 1.33 mW/ $^\circ\text{C}$  above 25 $^\circ\text{C}$ .
2. RMA flux is recommended.
3. Methanol or isopropyl alcohols are recommended as cleaning agents.
4. Pulse conditions:  $t_p = 100 \mu\text{s}$ ,  $T = 10 \text{ ms}$ .
5.  $\lambda = 940 \text{ nm}$ , GaAs.

**ELECTRICAL / OPTICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$ )

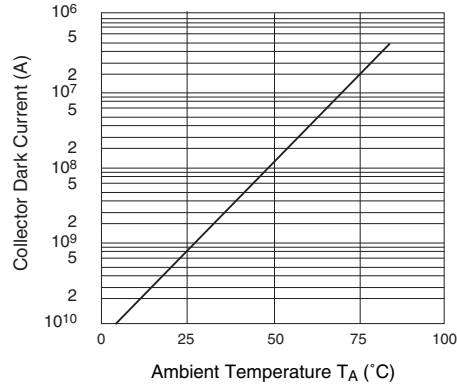
PARAMETER	TEST CONDITIONS	SYMBOL	MIN.	TYP.	MAX.	UNITS
Peak Sensitivity Wavelength		$\lambda_{PS}$	—	880	—	nm
Reception Angle		$\Theta$	—	$\pm 12$	—	Deg.
Dark Current	$V_{CE} = 10 \text{ V}$ , $E_e = 0$	$I_D$	—	—	100	nA
Collector-Emitter Breakdown	$I_C = 1 \text{ mA}$	$BV_{CEO}$	30	—	—	V
Emitter-Collector Breakdown	$I_E = 100 \mu\text{A}$	$BV_{ECO}$	4	—	—	V
On-State Collector Current	$E_e = 0.5 \text{ mW/cm}^2$ $V_{CE} = 5 \text{ V}^{(5)}$	$I_C(\text{on})$	0.7	—	—	mA
Saturation Voltage	$E_e = 0.5 \text{ mW/cm}^2$ $I_C = 0.1 \text{ mA}^{(5)}$	$V_{CE(\text{SAT})}$	—	—	0.4	V
Rise Time	$V_{CC} = 5 \text{ V}$ , $R_L = 100 \Omega$	$t_r$	—	5	—	$\mu\text{s}$
Fall Time	$I_C = 0.2 \text{ mA}$	$t_f$	—	5	—	$\mu\text{s}$

**TYPICAL PERFORMANCE CURVES**

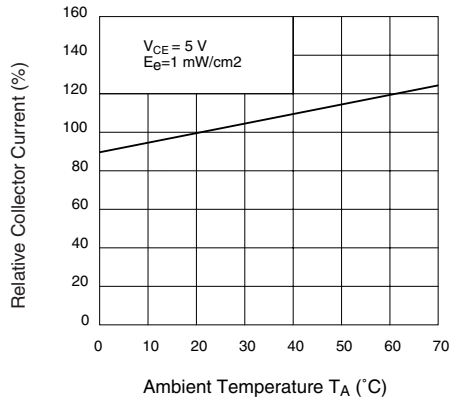
**Fig. 1 Collector Power Dissipation vs. Ambient Temperature**



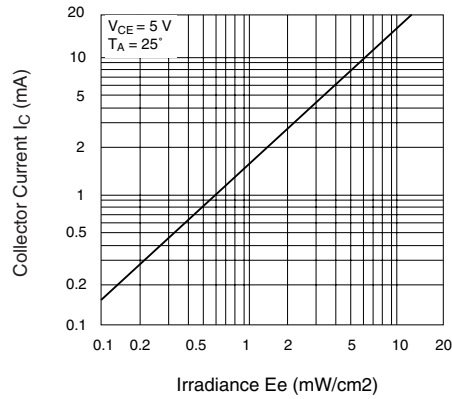
**Fig. 2 Collector Dark Current vs. Ambient Temperature**



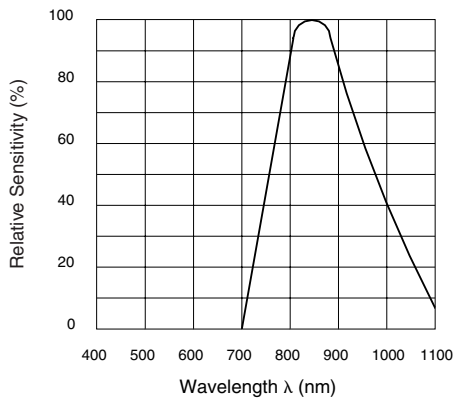
**Fig. 3 Relative Collector Current vs. Ambient Temperature**



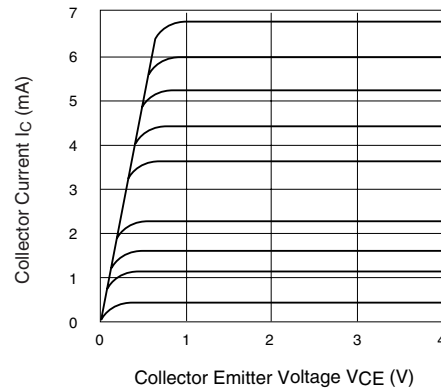
**Fig. 4 Collector Current vs. Irradiance**



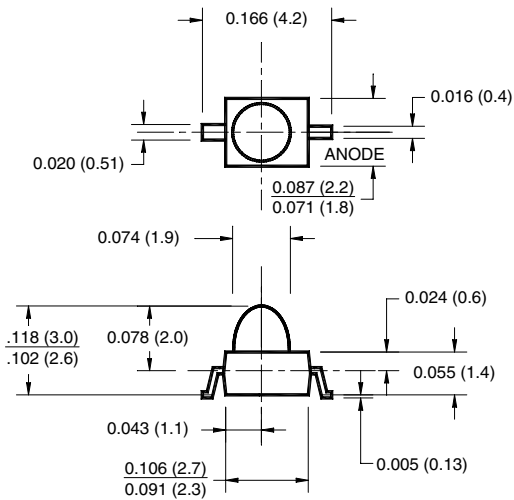
**Fig. 5 Spectral Sensitivity**



**Fig. 6 Collector Current vs. Collector Emitter Voltage**



**GULL WING LEAD CONFIGURATION**



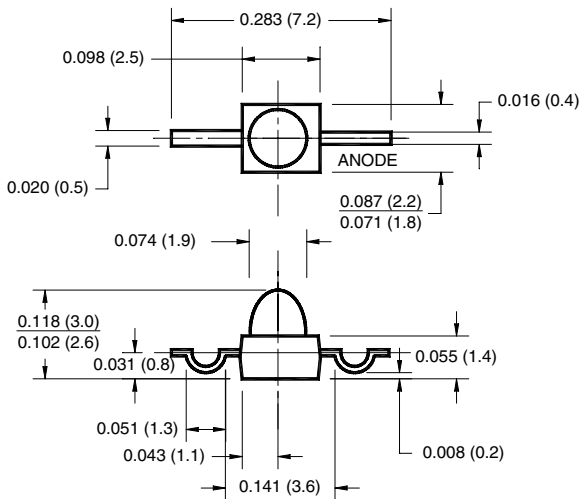
**FEATURES**

- Three lead forming options: Gull Wing, Yoke and Z-Bend
- Compatible with automatic placement equipment
- Supplied on tape and reel or in bulk packaging
- Compatible with vapor phase reflow solder processes

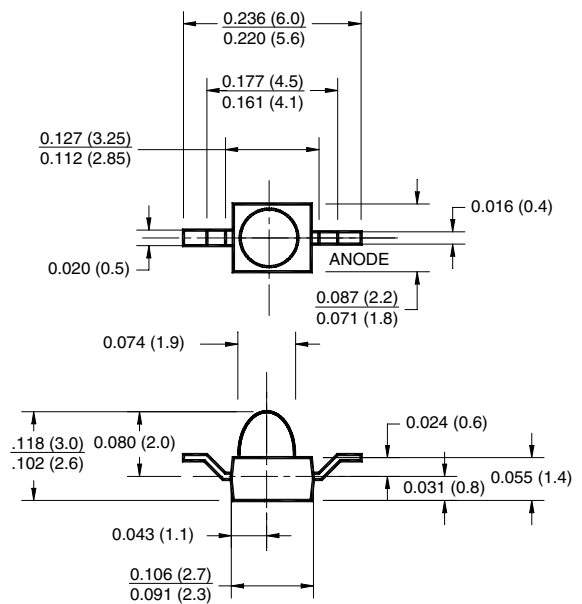
NOTES: (Applies to all package drawings)

1. Dimensions are in inches (mm).
2. Tolerance of  $\pm .010$  (.25) on all non nominal dimensions unless otherwise specified.

**YOKE LEAD CONFIGURATION**



**Z-BEND LEAD CONFIGURATION**



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