

DESCRIPTION

The QSB363 is a silicon phototransistor encapsulated in a black infrared transparent T-3/4 package.

FEATURES

- NPN Silicon Phototransistor
- T-3/4 (2mm) Surface Mount Package
- Medium Wide Beam Angle, 24°
- Black Plastic Package
- Matched Emitters: QEB363 or QEB373
- Daylight Filter
- 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) ^(2,3,4)	T_{SOL-I}	240 for 5 sec	$^\circ\text{C}$
Soldering Temperature (Flow) ^(2,3)	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 ⁽¹⁾	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		λ_{PS}	—	880	—	nm
Reception Angle		Θ	—	± 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	—	μs
Fall Time	$I_C = 0.2 \text{ mA}$	t_f	—	5	—	μs

TYPICAL PERFORMANCE CURVES

Fig. 1 Collector Power Dissipation vs. Ambient Temperature

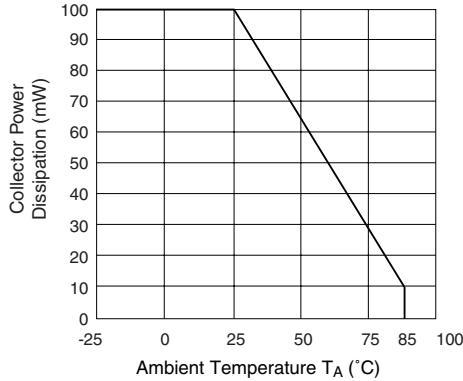


Fig. 2 Collector Dark Current vs. Ambient Temperature

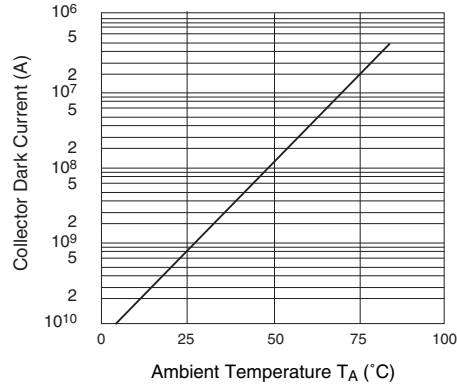


Fig. 3 Relative Collector Current vs. Ambient Temperature

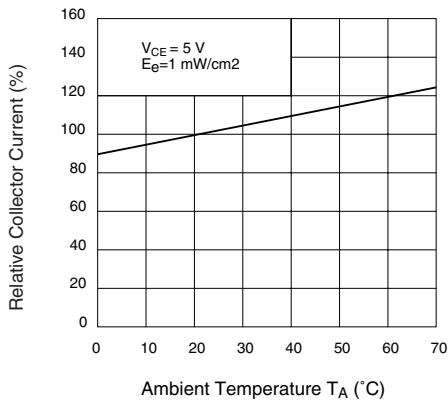


Fig. 4 Collector Current vs. Irradiance

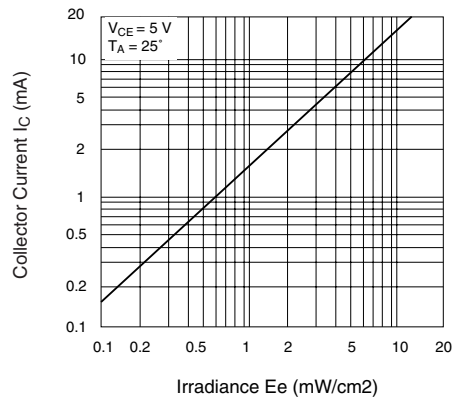


Fig. 5 Spectral Sensitivity

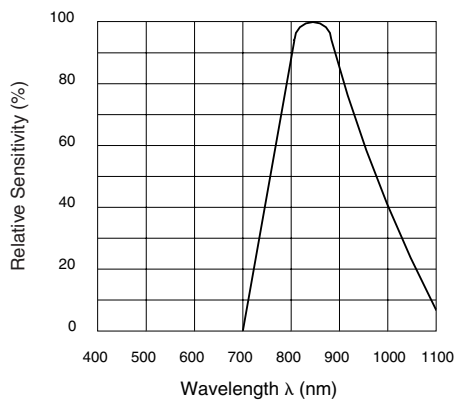
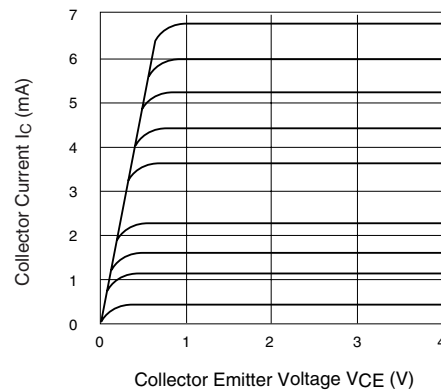


Fig. 6 Collector Current vs. Collector Emitter Voltage



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