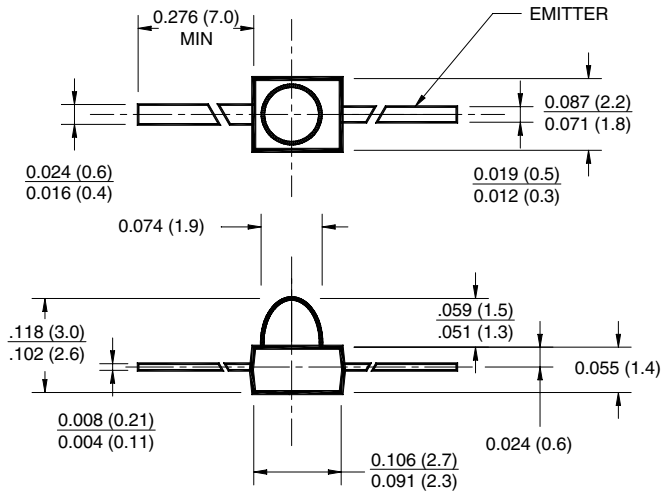
FAIRCHILD
SEMICONDUCTOR®

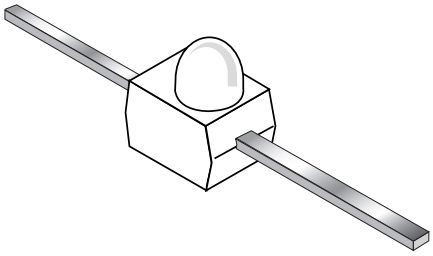
SUBMINIATURE PLASTIC SILICON PHOTOTRANSISTOR

QSB363C

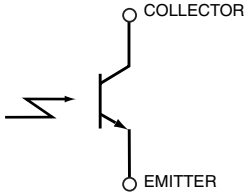
PACKAGE DIMENSIONS



NOTES:
1. Dimensions are in inches (mm).
2. Tolerance of ± .010 (.25) on all non nominal dimensions unless otherwise specified.



SCHEMATIC



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

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ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise specified)

Parameter	Symbol	Rating	Unit
Operating Temperature	T_{OPR}	-40 to +85	°C
Storage Temperature	T_{STG}	-40 to +85	°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. Pulse conditions: tp = 100 μs, T = 10 ms.
5. λ = 940 nm, GaAs.

ELECTRICAL / OPTICAL CHARACTERISTICS (T_A =25°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 V, Ee = 0	I_D	—	—	100	nA
Collector-Emitter Breakdown	I_C = 1 mA	BV_{CEO}	30	—	—	V
Emitter-Collector Breakdown	I_E = 100 µA	BV_{ECO}	4	—	—	V
On-State Collector Current	Ee = 0.5 mW/cm2 V_{CE} = 5 V(5)	I_C(on)	0.7	—	—	mA
Saturation Voltage	Ee = 0.5 mW/cm2 I_C = 0.1 mA(5)	$V_{CE\ (SAT)}$	—	—	0.4	V
Rise Time	V_{CC} = 5 V, R_L = 100 Ω	t_r	—	5	—	μs
Fall Time	I_C = 0.2 mA	t_f	—	5	—	μs

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TYPICAL PERFORMANCE CURVES

Fig. 1 Collector Power Dissipation vs. Ambient Temperature

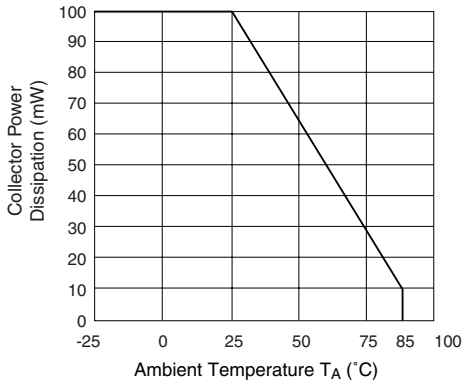


Fig. 2 Collector Dark Current vs. Ambient Temperature

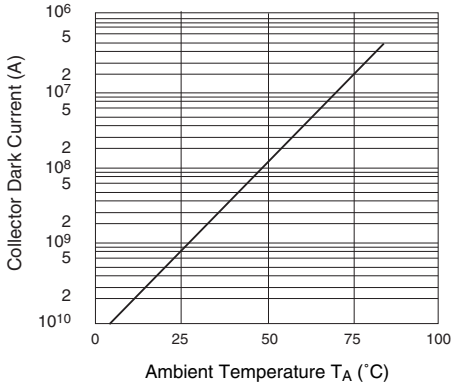


Fig. 3 Relative Collector Current vs. Ambient Temperature

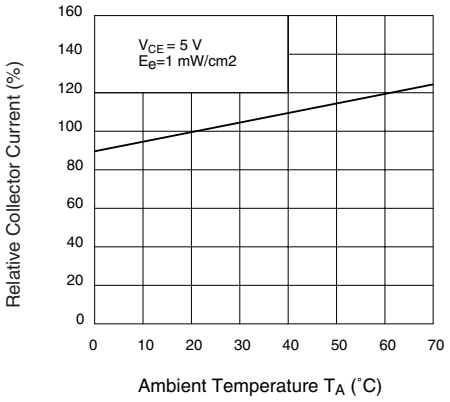


Fig. 4 Collector Current vs. Irradiance

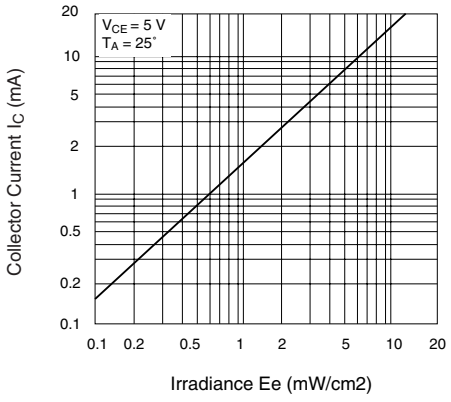


Fig. 5 Spectral Sensitivity

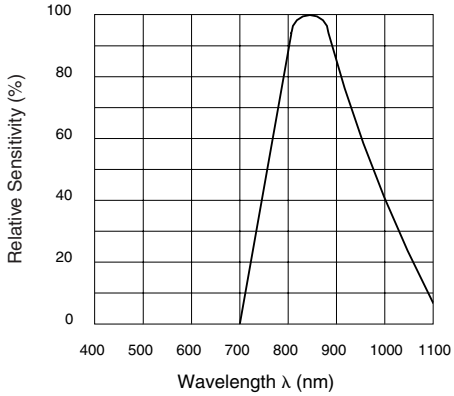
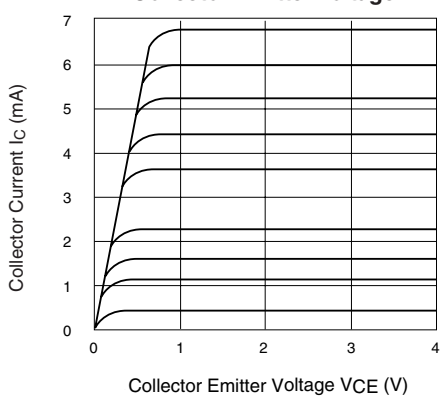


Fig. 6 Collector Current vs. Collector Emitter Voltage



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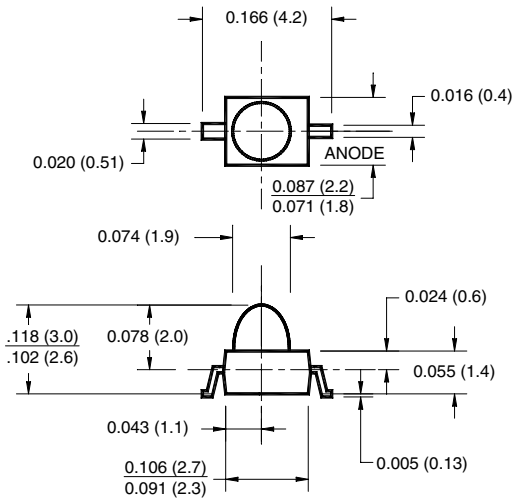
GULL WING LEAD CONFIGURATION

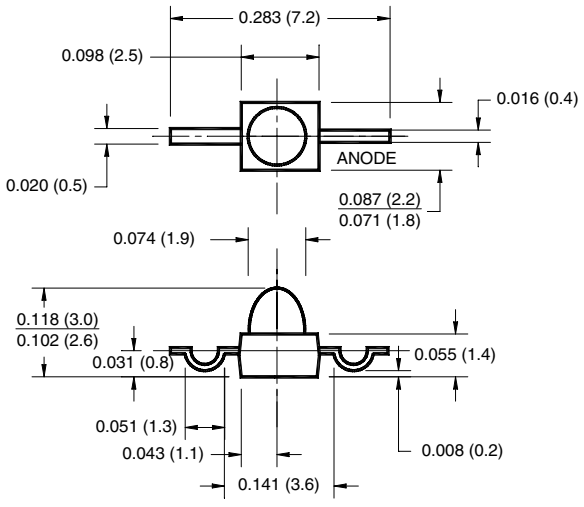


FEATURES

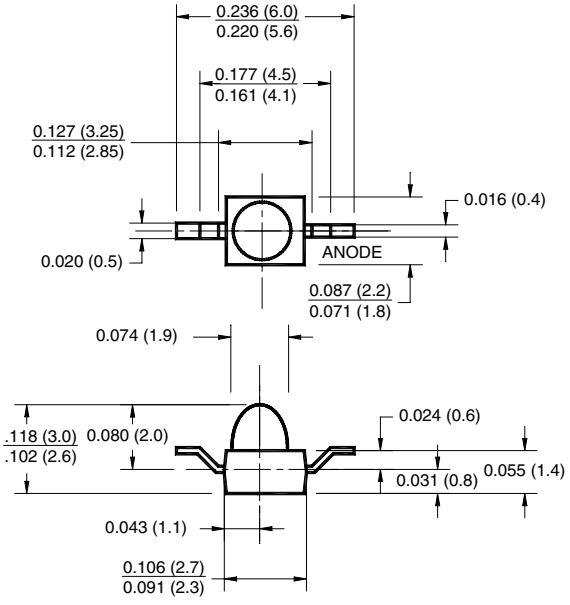
- Three lead forming options: Gull Wing, Yoke and Z-Bend
- Compatible with automatic placement equipment
- Supplied on tape and reel or in bulk packaging
- Compatible with vapor phase reflow solder processes

NOTES: (Applies to all package drawings)
1. Dimensions are in inches (mm).
2. Tolerance of ± .010 (.25) on all non nominal dimensions unless otherwise specified.

YOKE LEAD CONFIGURATION



Z-BEND LEAD CONFIGURATION



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