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QSB320TR
Surface Mount Silicon Infrared Phototransistor

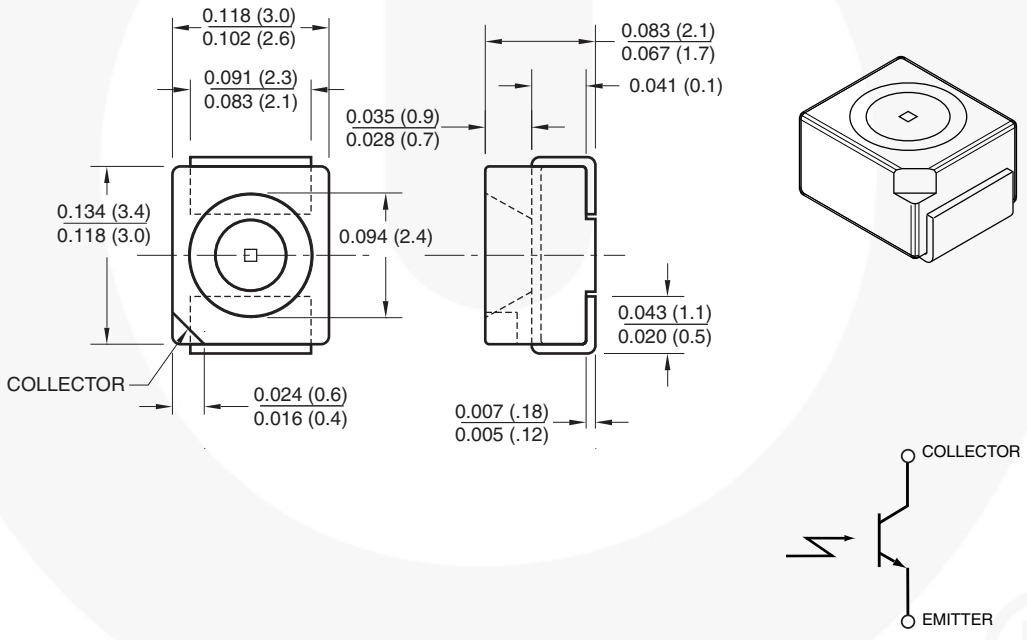
Features

- Surface Mount PLCC-2 Package
- Wide Reception Angle, 120°
- High Sensitivity
- Phototransistor Output

Descriptions

QSB320TR is a phototransistor in surface mount PLCC-2 Package.

Package Dimensions(1, 2)



Notes:

1. Dimensions for all drawings are in inches (mm).
2. Tolerance of ±0.010 (0.25) on all non-nominal dimensions unless otherwise specified.

Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Value	Unit
T_{OPR}	Operating Temperature	-55 to +100	°C
T_{STG}	Storage Temperature	-55 to +100	°C
T_{SOL-F}	Soldering Temperature (Flow)[4, 5]	260 for 10 sec	°C
V_{CE}	Collector Emitter Voltage	35	V
V_{EC}	Emitter Collector Voltage	5	V
I_C	Collector Current	15	mA
P_D	Power Dissipation[3]	165	mW

Notes:

3. Derate power dissipation linearly 2.2 mW/°C above 25°C.
4. RMA flux is recommended.
5. Methanol or isopropyl alcohols are recommended as cleaning agents.

Electrical / Optical Characteristics

Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
λ_{PS}	Peak Sensitivity Wavelength			880		nm
λ_{SR}	Wavelength Sensitivity Range		400		1000	nm
Θ	Reception Angle			120		°
I_D	Collector Emitter Dark Current	V_{CE} = 25 V, E_e = 0			200	nA
BV_{CEO}	Collector-Emitter Breakdown	I_C = 1 mA	30			V
BV_{ECO}	Emitter-Collector Breakdown	I_E = 100 μA	5			V
$I_{C(ON)}$	On-State Collector Current[6]	E_e = 0.1 mW/cm^2, V_{CE} = 5 V	16			μA
$V_{CE(SAT)}$	Saturation Voltage[6]	E_e = 0.5 mW/cm^2, I_C = 0.05 mA			0.3	V
t_r	Rise Time	I_C = 1 mA, V_{CC} = 5 V, R_L = 100 Ω		8		μs
t_f	Fall Time			8		μs

Note:

6. λ = 940 nm

Typical Performance Characteristics

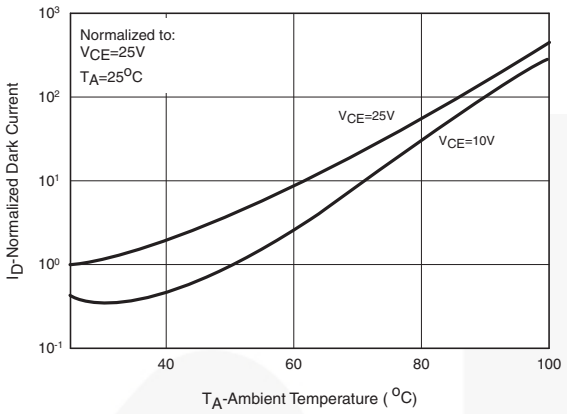


Figure 1. Dark Current vs. Ambient Temperature

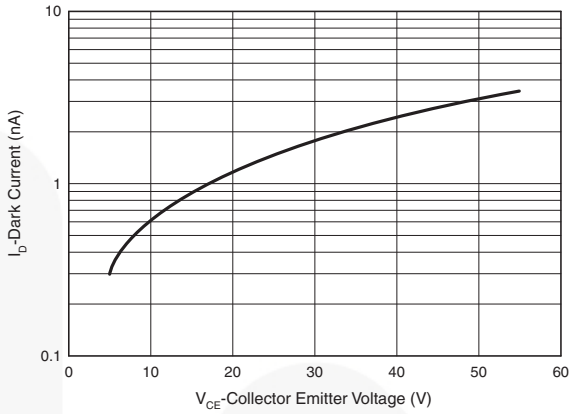


Figure 2. Dark Current vs. Collector Emitter Voltage

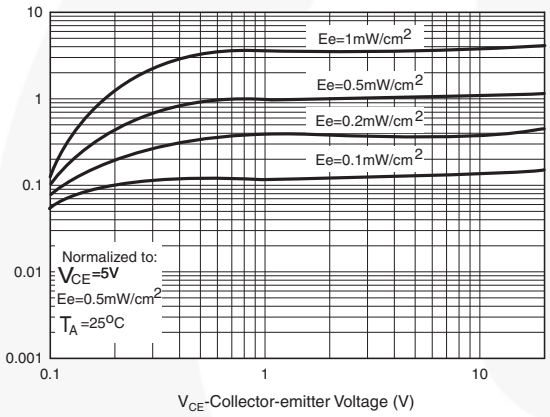


Figure 3. Light Current vs. Collector to Emitter Voltage

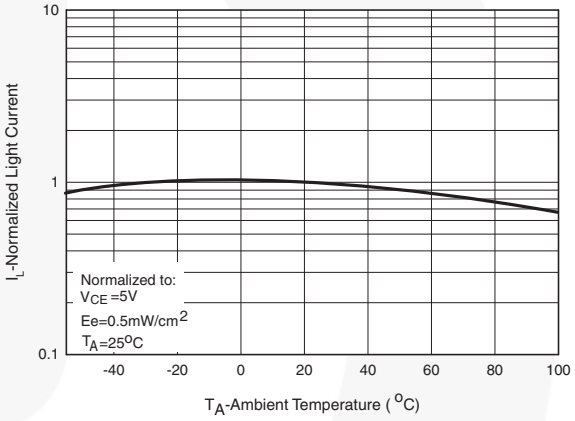


Figure 4. Light Current vs. Collector - Emitter Voltage

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