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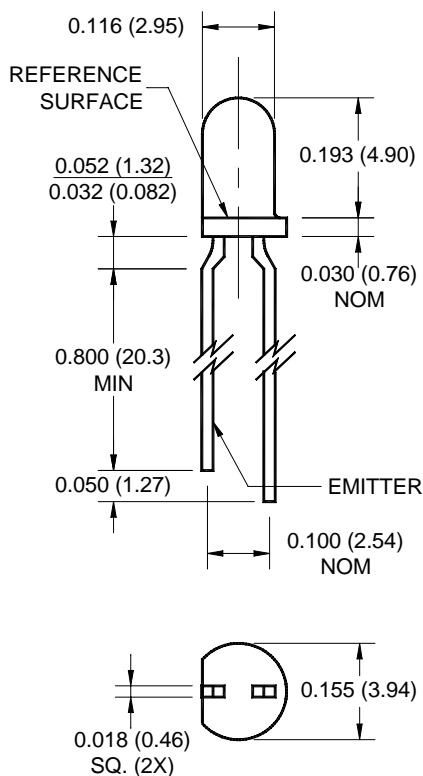
[Fairchild Semiconductor](#)

[QSC133](#)

For any questions, you can email us directly:

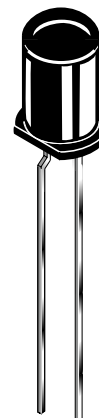
sales@integrated-circuit.com

PACKAGE DIMENSIONS

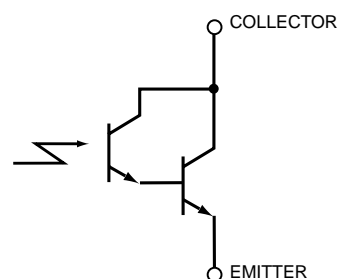


NOTES:

1. Dimensions for all drawings are in inches (mm).
2. Tolerance of $\pm .010 (.25)$ on all non-nominal dimensions unless otherwise specified.
3. Orange stripe on the flange.



SCHEMATIC



DESCRIPTION

The QSC133 is a silicon photodarlington encapsulated in an infrared transparent, black T-1 package.

FEATURES

- NPN Silicon Photodarlington
- Package Type: T-1 (3mm lens diameter)
- Matched Emitter: QECXXX
- Narrow Reception Angle, 16°
- Daylight Filter
- Package material and color: black epoxy
- High Sensitivity



PLASTIC SILICON INFRARED PHOTODARLINGTON

QSC133

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

Parameter	Symbol	Rating	Unit
Operating Temperature	T _{OPR}	-40 to +100	°C
Storage Temperature	T _{STG}	-40 to +100	°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

1. Derate power dissipation linearly 2.00 mW/°C above 25°C.
2. RMA flux is recommended.
3. Methanol or isopropyl alcohols are recommended as cleaning agents.
4. Soldering iron 1/16" (1.6mm) minimum from housing.
5. λ = 880 nm, AlGaAs.

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	—	±8	—	Deg.
Collector-Emitter Dark Current	V _{CE} = 10 V, E _e = 0	I _{CEO}	—	—	100	nA
Collector-Emitter Breakdown	I _C = 1 mA	BV _{CEO}	30	—	—	V
Emitter-Collector Breakdown	I _E = 100 μA	BV _{ECO}	5	—	—	V
On-State Collector Current ⁽⁵⁾	E _e = 0.25 mW/cm ² , V _{CE} = 5 V	I _{C(ON)}	8.00	—	—	mA
Saturation Voltage ⁽⁵⁾	E _e = 0.25 mW/cm ² , I _C = 0.4 mA	V _{CE(sat)}	—	—	1.0	V
Rise Time	V _{CC} = 5 V, R _L = 100 Ω, I _C = 0.15 mA	t _r	—	20	—	μs
Fall Time		t _f	—	50	—	

Figure 1. Light Current vs. Radiant Intensity

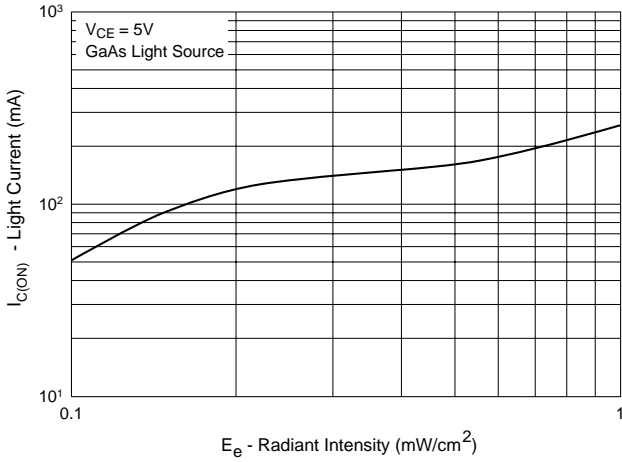


Figure 2. Angular Response Curve

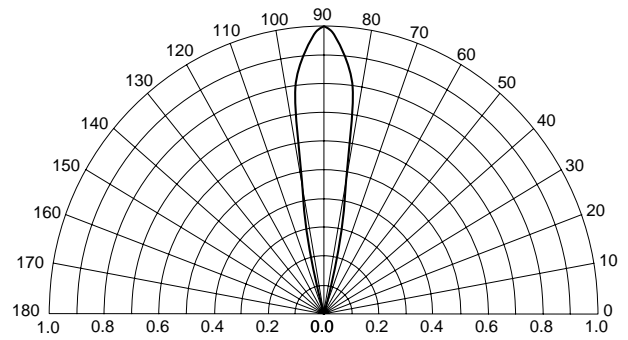


Figure 3. Dark Current vs. Collector - Emitter Voltage

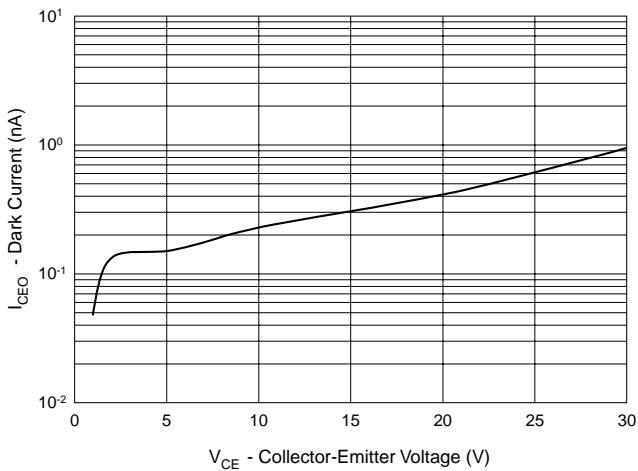


Figure 4. Light Current vs. Collector - Emitter Voltage

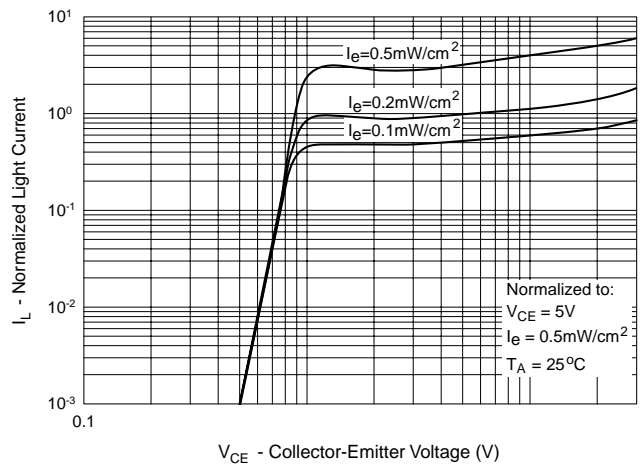
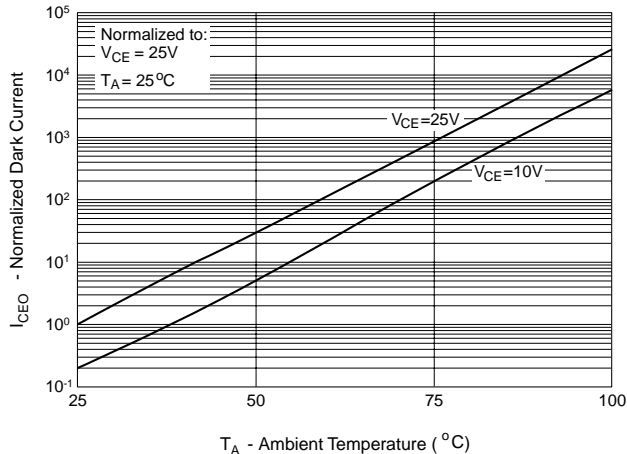


Figure 5. Dark Current vs. Ambient Temperature





PLASTIC SILICON INFRARED PHOTODARLINGTON

QSC133

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