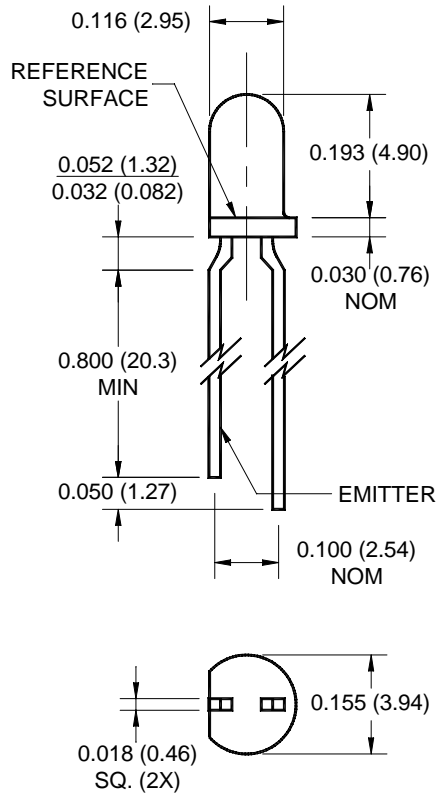
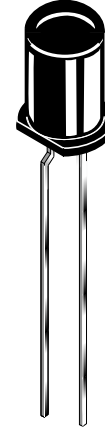


PACKAGE DIMENSIONS

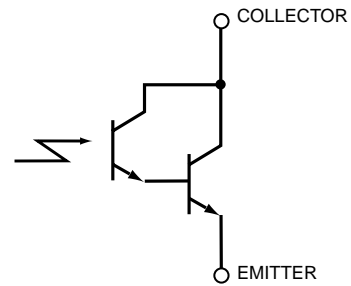


NOTES:

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

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

Parameter	Symbol	Rating	Unit
Operating Temperature	T_{OPR}	-40 to +100	$^\circ\text{C}$
Storage Temperature	T_{STG}	-40 to +100	$^\circ\text{C}$
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

1. Derate power dissipation linearly 2.00 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. Soldering iron 1/16" (1.6mm) minimum from housing.
5. $\lambda = 880$ nm, AlGaAs.

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	—	± 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

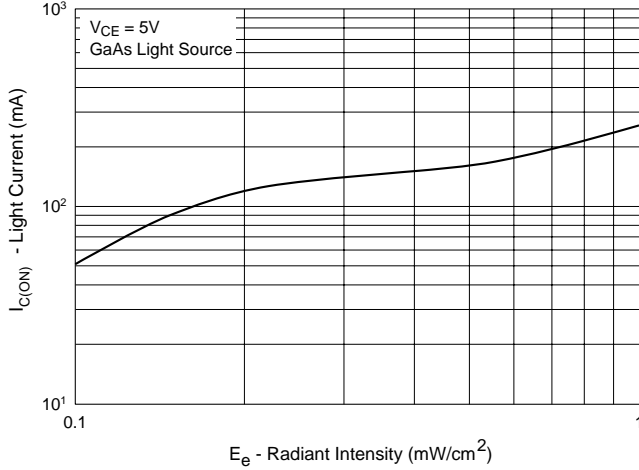


Figure 2. Angular Response Curve

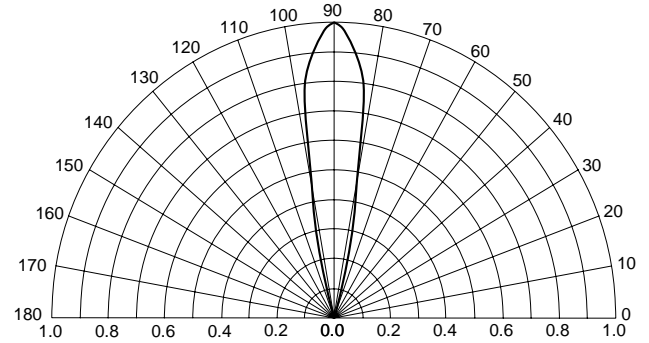


Figure 3. Dark Current vs. Collector - Emitter Voltage

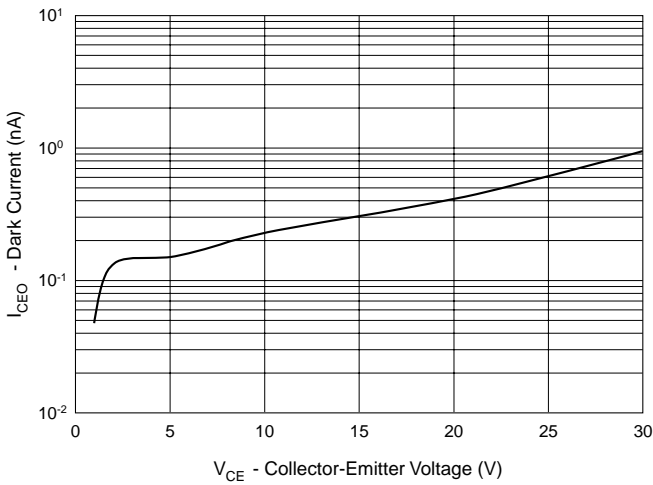


Figure 4. Light Current vs. Collector - Emitter Voltage

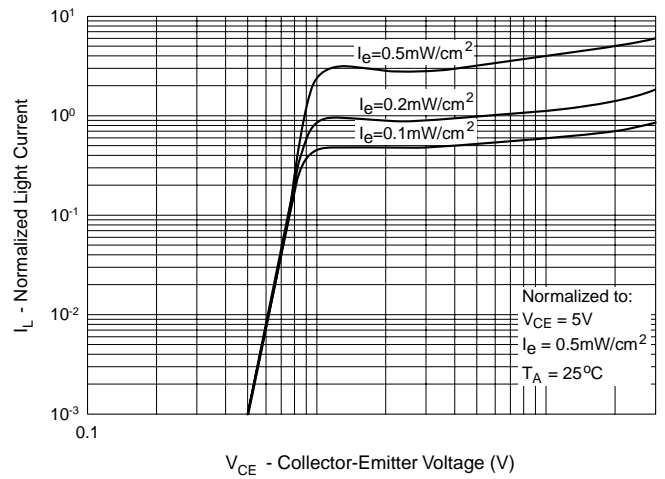
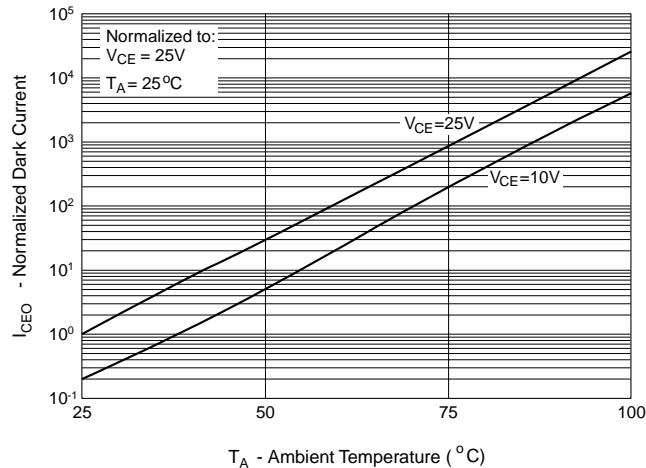


Figure 5. Dark Current vs. Ambient Temperature



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