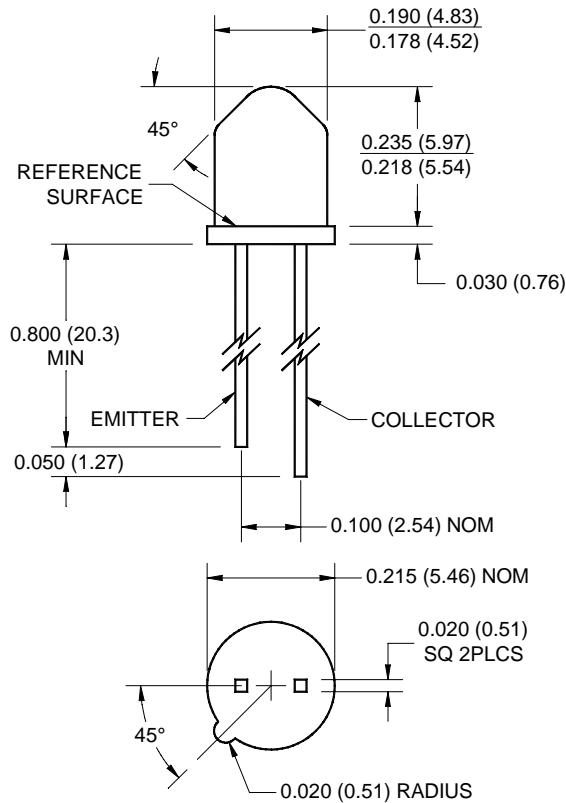
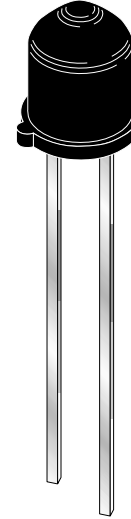


PACKAGE DIMENSIONS

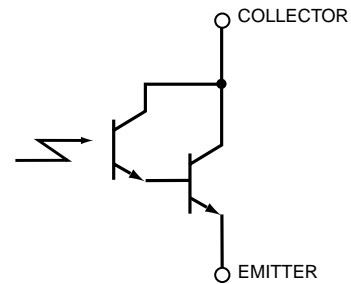


NOTES:

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 QSD733 is a silicon photodarlington encapsulated in an infrared transparent, black TO-18 package.

FEATURES

- NPN Silicon Photodarlington
- Package Type: Plastic TO-18
- Matched Emitter: QED523
- Narrow Reception Angle, 40°
- 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 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. 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	—	± 20	—	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⁾	$E_e = 0.125$ mW/cm ² , $V_{CE} = 5$ V	$I_{C(ON)}$	5.0	—	—	mA
Saturation Voltage ⁽⁵⁾	$E_e = 0.125$ mW/cm ² , $I_C = 2.0$ 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

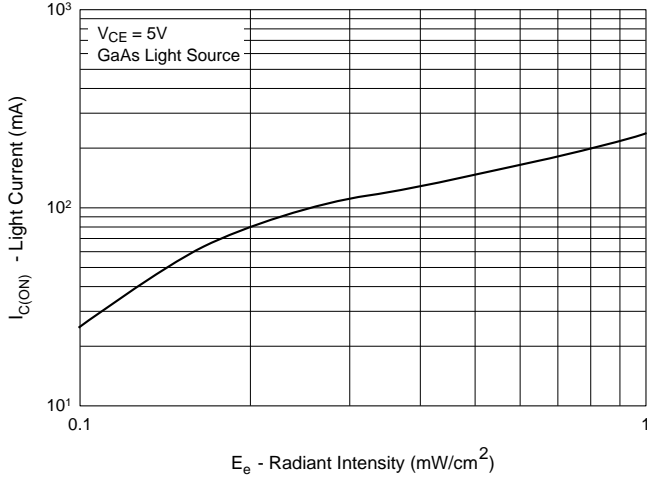


Figure 2. Angular Response Curve

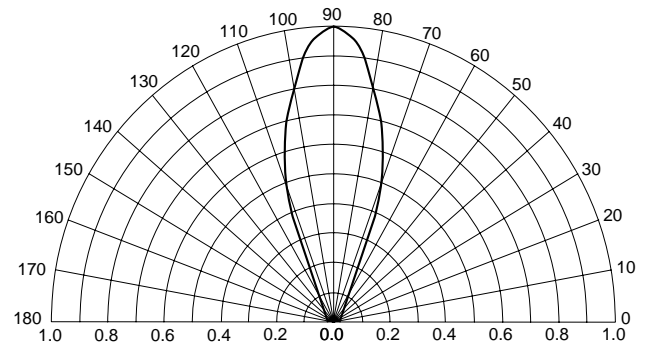


Figure 3. Dark Current vs. Collector - Emitter Voltage

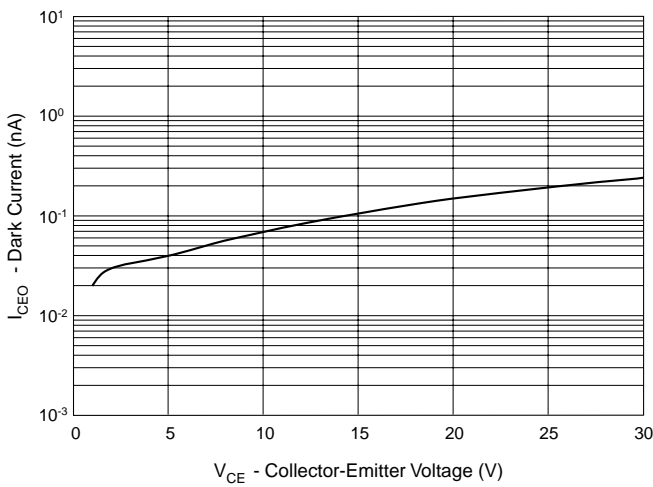


Figure 4. Light Current vs. Collector - Emitter Voltage

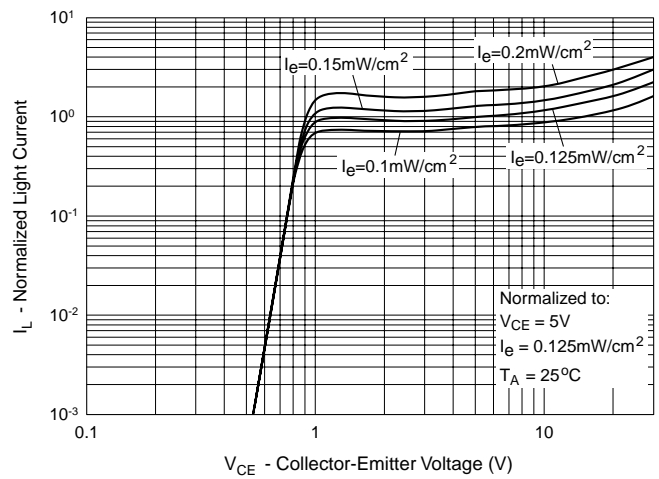
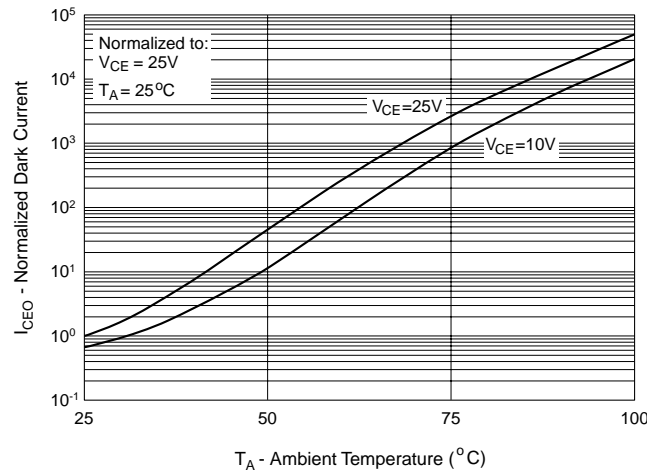


Figure 5. Dark Current vs. Ambient Temperature



DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE PRESIDENT OF FAIRCHILD SEMICONDUCTOR CORPORATION. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in labeling, can be reasonably expected to result in a significant injury of the user.
2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

Fairchild Semiconductor

SEARCH | [Parametric](#) | [Cross Reference](#) | [Inventory](#)
[space](#) [Product Folders and](#) [Applica](#)

find products

[Home](#) >> [Find products](#) >>

- [Products groups](#)
- [Analog and Mixed](#)
- [Signal](#)
- [Discrete](#)
- [Interface](#)
- [Logic](#)
- [Microcontrollers](#)
- [Non-Volatile](#)
- [Memory](#)
- [Optoelectronics](#)
- [Markets and applications](#)
- [New products](#)
- [Product selection and parametric search](#)
- [Cross-reference search](#)

- [technical information](#)
- [buy products](#)
- [technical support](#)
- [my Fairchild](#)
- [company](#)

QSD733
 Plastic Silicon Infrared Photodarlington

Contents
[General description](#) | [Features](#) | [Product status/pricing/packaging](#)

General description

The QSD733 is a silicon photodarlington encapsulated in an infrared transparent, black TO-18 package.

[back to top](#)

Features

- NPN silicon phototransistor
- Package type: Plastic TP-18
- Matched emitter: QED523
- Narrow reception angle, 40°
- Daylight filter
- Package material and color: black epoxy
- High sensitivity

[back to top](#)

Product status/pricing/packaging

Product	Product status	Pricing*	Inventory check & ordering	Package type	Packing method
QSD733	Full Production	\$0.16	Purchase	TO-18	BULK
QSD733C	Full Production	N/A	Purchase	TO-18	BULK

* Fairchild 1,000 piece Budgetary Pricing

[back to top](#)

Datasheet
[Download this datasheet](#)
[PDF](#)
[e-mail this datasheet](#)
[\[E-\]](#)
 This page
[Print version](#)

Related Links
[Request samples](#)
[Dotted line](#)
[How to order products](#)
[Dotted line](#)
[Product Change Notices \(PCNs\)](#)
[Dotted line](#)
[Support](#)
[Dotted line](#)
[Distributor and field sales representatives](#)
[Dotted line](#)
[Quality and reliability](#)
[Dotted line](#)
[Design tools](#)

[Home](#) | [Find products](#) | [Technical information](#) | [Buy products](#) |
[Support](#) | [Company](#) | [Contact us](#) | [Site index](#) | [Privacy policy](#)

[© Copyright 2002 Fairchild Semiconductor](#)
