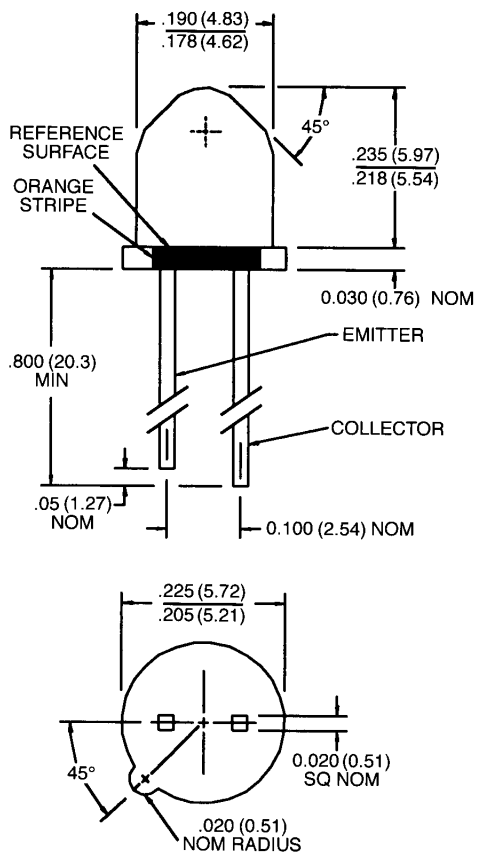


PACKAGE DIMENSIONS



ST2147

DESCRIPTION

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

FEATURES

- Steel lead frames for improved reliability in solder mounting.
- Good optical-to-mechanical alignment.
- Narrow reception angle.
- Plastic package is infrared transparent black to attenuate visible light.
- Mechanically and spectrally matched to the QED523 LED.
- Black plastic body allows easy recognition from LED.

NOTES:

1. DIMENSIONS ARE IN INCHES (mm).
2. TOLERANCE IS $\pm .010$ (.25) UNLESS OTHERWISE SPECIFIED.
3. TAB DENOTES EMITTER.



PLASTIC SILICON PHOTODARLINGTON

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ Unless Otherwise Specified)	
Storage Temperature	-40°C to + 100°C
Operating Temperature	-40°C to + 100°C
Soldering:	
Lead Temperature (Iron)	240°C for 5 sec. ^(2,3,4,5)
Lead Temperature (Flow)	260°C for 10 sec. ^(2,3,5)
Collector-Emitter Breakdown Voltage	30 Volts
Emitter-Collector Breakdown Voltage	5.0 Volts
Power Dissipation	100 mW ⁽¹⁾

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless Otherwise Specified) (All measurements made under pulse conditions.)						
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
Collector-Emitter Breakdown	BV_{CEO}	30	—	—	V	$I_C = 1.0\text{ mA}$
Emitter-Collector Breakdown	BV_{ECO}	5.0	—	—	V	$I_E = 100\ \mu\text{A}$
Collector-Emitter Leakage	I_{CEO}	—	—	100	nA	$V_{CE} = 10\text{ V}$
Reception Angle at ½ Sensitivity	θ	—	±20	—	Degrees	
On-State Collector Current	$I_{C(ON)}$	5.0	—	—	mA	$E_e = 0.125\text{ mW/cm}^2$, $V_{CE} = 5\text{V}^{(6)}$
Saturation Voltage	$V_{CE(SAT)}$	—	—	1.0	V	$I_C = 2.0\text{mA}$, $E_e = 0.125\text{ mW/cm}^2^{(6)}$
Rise Time	t_r	—	20	—	μS	$I_C = .15\text{mA}$, $V_{CC} = 5\text{V}$, $R_L = 100\Omega$
Fall Time	t_f	—	50	—	μS	$I_C = .15\text{mA}$, $V_{CC} = 5\text{V}$, $R_L = 100\Omega$

NOTES
<ol style="list-style-type: none"> 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. Soldering iron tip 1/16" (1.6 mm) minimum from housing. 5. As long as leads are not under any stress or spring tension. 6. Light source is an AlGaAs LED emitting light at a peak wavelength of 880 nm.