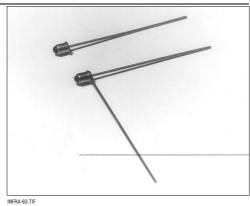
Silicon Photodarlington

FEATURES

- Compact metal can coaxial package
- 24° (nominal) acceptance angle
- · High output currents
- · Wide sensitivity ranges
- Wide operating temperature range (- 55°C to +125°C)
- Mechanically and spectrally matched to SE1450 and SE1470 infrared emitting diodes



DESCRIPTION

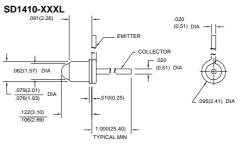
The SD1410 is an NPN silicon photodarlington mounted in a glass lensed metal can coaxial package. The package may have a tab or second lead welded to the can as an optional feature (SD1410-XXXL). Both leads are flexible and may be formed as required to fit various mounting configurations.

OUTLINE DIMENSIONS in inches (mm)

3 plc decimals ±0.005(0.12) 2 plc decimals ±0.020(0.51)

SD1410-XXX COLLECTOR .062(1.57) DIA

DIM_20a.ds4



DIM_20b.ds4



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ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Light Current	lL.				mA	V _{CE} =5 V
SD1410-001, SD1410-001 L		0.6				H=0.2 mW/cm ^{2 (1)}
SD1410-002, SD1410-002 L		2.0				
SD1410-003, SD1410-003 L		4.0				
SD1410-004, SD1410-004 L		8.0				
Collector Dark Current	Iceo			250	nA	V _{CE} =10 V, H=0
Collector-Emitter Breakdown Voltage	V _(BR) CEO	15			V	Ic=100 μA
Emitter-Collector Breakdown Voltage	V _{(BR)ECO}	5.0			V	I _E =100 μA
Collector-Emitter Saturation Voltage	VCE(SAT)			1.1	V	Ic=1 mA
						H=1 mW/cm ²
Angular Response (2)	Ø		24		degr.	I _F =Constant
Rise And Fall Time	t _r , t _f		75		μs	Vcc=5 V, I _L =1 mA
						$R_L=100 \Omega$

Notes

- The radiation source is a tungsten lamp operating at a color temperature of 2870°K.
 Angular response is defined as the total included angle between the half sensitivity points.

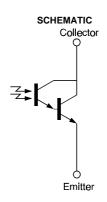
ABSOLUTE MAXIMUM RATINGS

(25°C Free-Air Temperature unless otherwise noted) Collector-Emitter Voltage 15 V Emitter-Collector Voltage 5 V Power Dissipation 75 mW (1) -55°C to 125°C Operating Temperature Range Storage Temperature Range -65°C to 150°C Soldering Temperature (10 sec) 260°C

Notes

1. Derate linearly from 25°C free-air temperature at the rate of

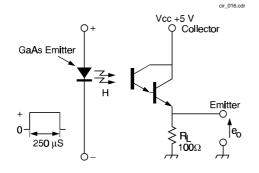
0.71 mW/°C.



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SWITCHING TIME TEST CIRCUIT



SWITCHING WAVEFORM

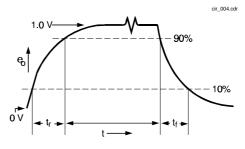


Fig. 1 Responsivity vs

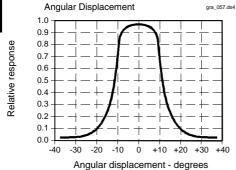


Fig. 2 Spectral Responsivity

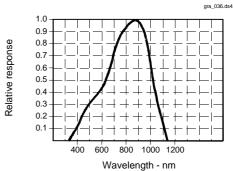
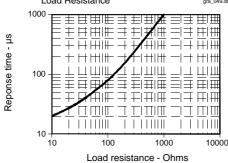


Fig. 3 Non-Saturated Switching Time vs Load Resistance



All Performance Curves Show Typical Values



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