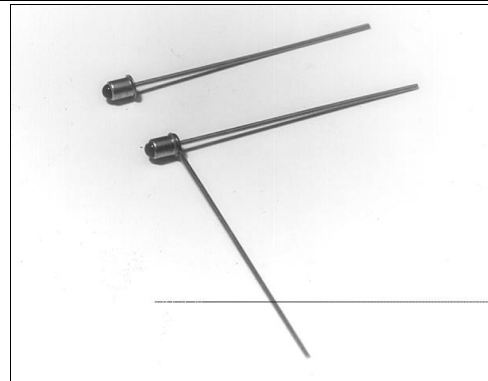


SD1410

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



INFRA-63.TIF

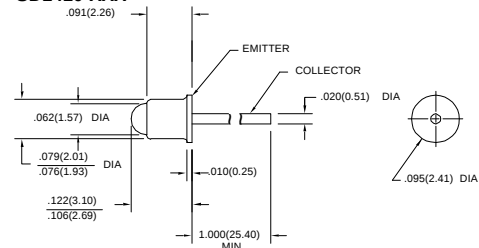
DESCRIPTION

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)

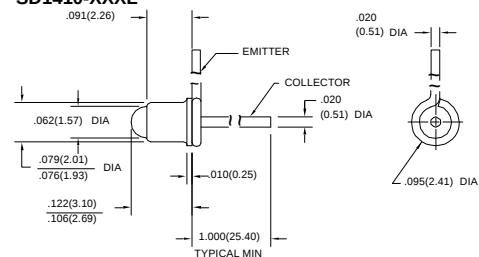
Tolerance 3 plc decimals $\pm 0.005(0.12)$
2 plc decimals $\pm 0.020(0.51)$

SD1410-XXX



DIM_20a.ds4

SD1410-XXXL



DIM_20b.ds4

SD1410

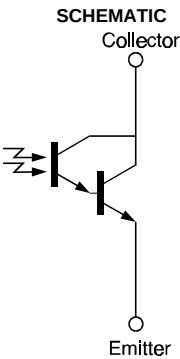
Silicon Photodarlington

ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)						
PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Light Current SD1410-001, SD1410-001 L SD1410-002, SD1410-002 L SD1410-003, SD1410-003 L SD1410-004, SD1410-004 L	I _L	0.6 2.0 4.0 8.0			mA	V _{CE} =5 V H=0.2 mW/cm ² (1)
Collector Dark Current	I _{CEO}			250	nA	V _{CE} =10 V, H=0
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	15			V	I _C =100 µA
Emitter-Collector Breakdown Voltage	V _{(BR)ECO}	5.0			V	I _E =100 µA
Collector-Emitter Saturation Voltage	V _{CE(SAT)}			1.1	V	I _C =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	V _{CC} =5 V, I _L =1 mA R _L =100 Ω

Notes
1. The radiation source is a tungsten lamp operating at a color temperature of 2870°K.
2. 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)
Operating Temperature Range	-55°C to 125°C
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.



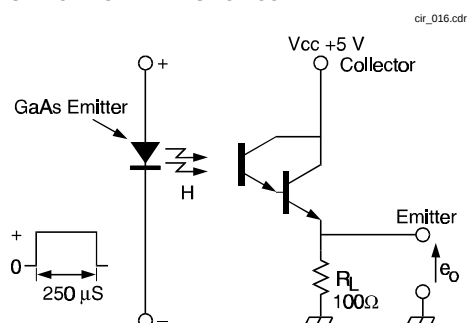
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SD1410

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SWITCHING TIME TEST CIRCUIT



SWITCHING WAVEFORM

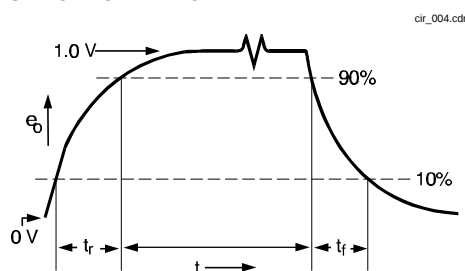


Fig. 1 Responsivity vs Angular Displacement

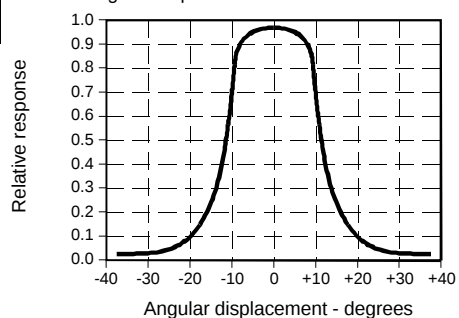


Fig. 2 Spectral Responsivity

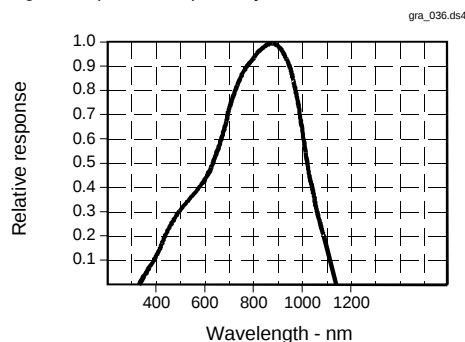
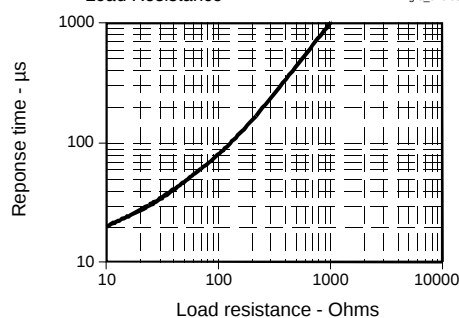


Fig. 3 Non-Saturated Switching Time vs Load Resistance



All Performance Curves Show Typical Values

SD1410
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