

61050**TO -46 PHOTODARLINGTON**

6/30/03

Features:

- Hermetically sealed
- Maximum sensitivity
- Base lead provided for conventional biasing
- Narrow viewing angle

Applications:

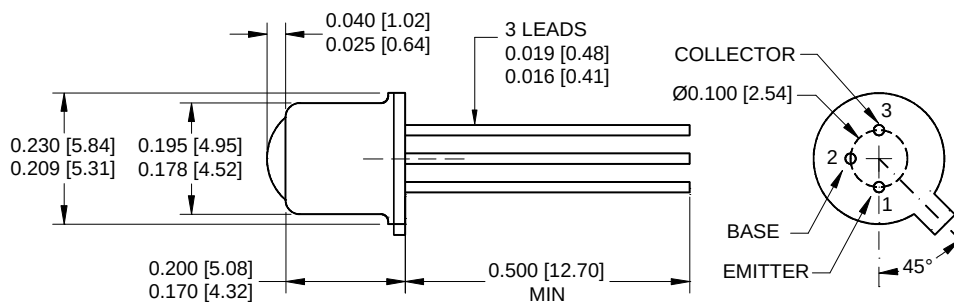
- Incremental encoding
- Reflective sensors
- Position sensors
- Level sensors

DESCRIPTION

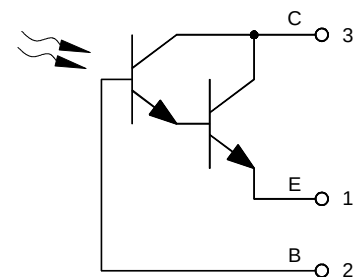
The **61050** is an N-P-N Planar Silicon photodarlington in a lensed TO-46 three-lead package. Photodarlington devices are ideal in applications requiring more current gain than is possible using a phototransistor. Available custom binned to customer specifications or screened to MIL-PRF-19500.

ABSOLUTE MAXIMUM RATINGS

Collector-Emitter Voltage.....	35V
Emitter-Collector Voltage.....	7V
Continuous Collector Current	50mA
Power Dissipation (Derate at the rate of 2.5 mW/°C above 25°C)	250mW
Storage Temperature.....	-65°C to +150°C
Operating Temperature (See part selection guide for actual operating temperature)	-55°C to +125°C
Lead Soldering Temperature (10 seconds, 1/16" from case)	240°C

Package Dimensions

ALL DIMENSIONS ARE IN INCHES [MILLIMETERS]

Schematic Diagram

THE COLLECTOR IS IN ELECTRICAL CONTACT WITH THE CASE.

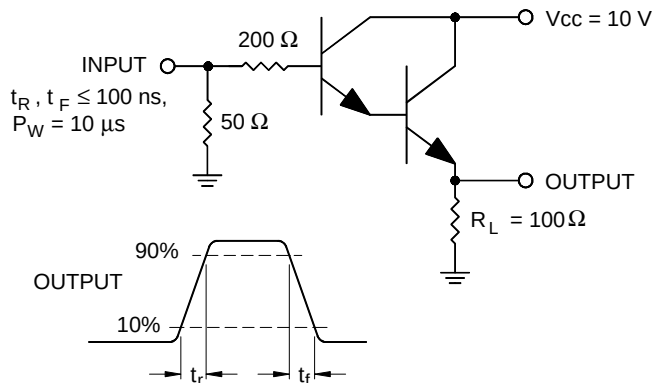
ELECTRICAL CHARACTERISTICST_A = 25°C unless otherwise specified.

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS	NOTE
Light Current	-X01 -X02 -X03 -X04	40 60 80 100			mA	V _{CE} = 5.0V, H = 1 mW/cm ²	1
Dark Current	I _D			1.0	μA	V _{CE} = 10V, H = 0	
Collector-Emitter Breakdown Voltage	BV _{CEO}	35			V	I _C = 100μA	
Emitter-Collector Breakdown Voltage	BV _{ECO}	7			V	I _E = 100μA	
Saturation Voltage	V _{CE(sat)}			1.2	V	I _C = 1.0 mA, H = 1 mW/cm ²	
Angular Response	θ		10		degrees		2
Transistor Rise and Fall Time	t _r , t _f			30	μs	V _{cc} = 10V, I _c = 1 mA	

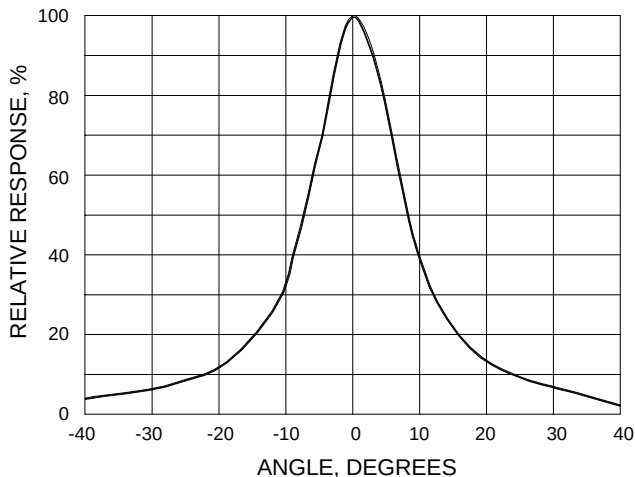
NOTES:

- Irradiance (H) in mW/cm² from a tungsten source at a color temperature of 2870K..
- The angle between incidence for peak response and incidence for 50% of peak response.

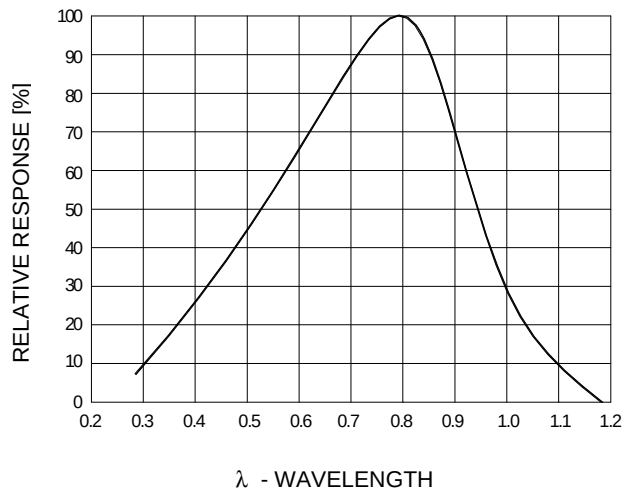
PULSE RESPONSE
TEST CIRCUIT AND SWITCHING TIME



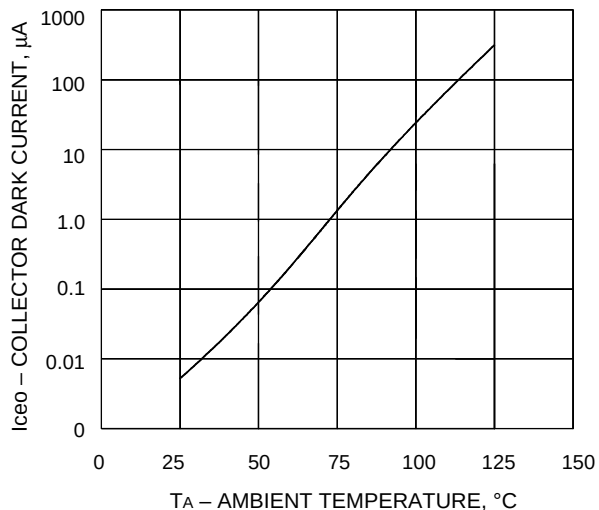
ANGULAR RESPONSE



RELATIVE SPECTRAL RESPONSE



COLLECTOR DARK CURRENT
VS
AMBIENT TEMPERATURE



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TO-46 PHOTODARLINGTON**SELECTION GUIDE**

PART NUMBER	PART DESCRIPTION	I _L Range
61050-001	Commercial	40mA min
61050-101	Screened	40mA min
61050-002	Commercial	60mA min
61050-102	Screened	60mA min
61050-003	Commercial	80mA min
61050-103	Screened	80mA min
61050-004	Commercial	100mA min
61050-104	Screened	100mA min