

61010	PHOTODARLINGTON "PIGTAIL" (TYPE GS3030)	 OPTOELECTRONIC PRODUCTS DIVISION
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Features: • Hermetically sealed • High Sensitivity • Small Package • Suitable for High-Density PC Board Mounting • Spectrally Matched to the 62017 Series LED.	Applications: • Incremental Encoding • Reflective Sensors • Position Sensors • Level Sensors
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DESCRIPTION

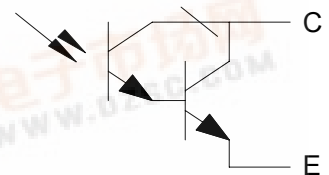
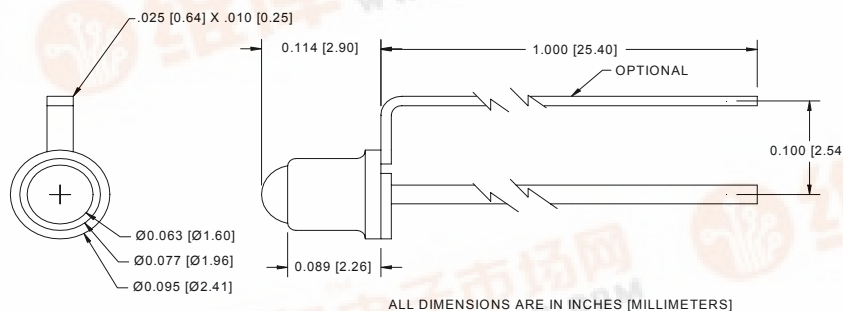
The **61010** is an N-P-N Planar Silicon Photodarlington Transistor in a package designed to be mounted in a single-clad printed circuit board. Its large effective aperture and narrow angular response make this a highly sensitive device with minimum response to off-axis or stray light. This sensor is also available with a lead attached to the case so that it may be connected without the use of a printed circuit board. Available in custom binned to customer specifications and/or screened to MIL-PRF-19500.

ABSOLUTE MAXIMUM RATINGS

Storage Temperature.....	-65°C to +150°C
Operating Temperature (See part selection guide for actual operating temperature)	-65°C to +125°C
Collector-Emitter Voltage.....	50V
Emitter-Collector Voltage.....	7V
Power Dissipation (Derate at the rate of 0.5 mW/°C above 25°C)	50mW
Lead Soldering Temperature (3 minutes)	240°C

Package Dimensions

Schematic Diagram



61010

SILICON PHOTODARLINGTON "PIGTAIL" (TYPE GS3030)

ELECTRICAL CHARACTERISTICS

T_A = 25°C unless otherwise specified.

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS	NOTE
Light Current	61010-X01 61010-X02 61010-X03	0.6 2 4		2.5 5 --	mA	V _{CE} = 5.0V, H = 0.2 mW/cm ²	1
Dark Current	61010-XXX			250	nA	V _{CE} = 10V, H = 0	
Collector-Emitter Breakdown Voltage	61010-XXX	BV _{CEO}	15		V	I _C = 100μA	
Emitter-Collector Breakdown Voltage	61010-XXX	BV _{ECO}	5		V	I _E = 100μA	
Light Current Rise Time	61010-X01 61010-X02 61010-X03		15 20 20		μs μs μs	R _L = 100Ω, V _{CC} = 5V, I _L = 1.0mA	
Saturation Voltage	61010-X0X	V _{CE(sat)}	1.1		V	I _C = 1mA, H = 0.2 mW/cm ²	
Angular Response	61010-X0X	θ	12		degrees		2

NOTES:

- Irradiance 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.

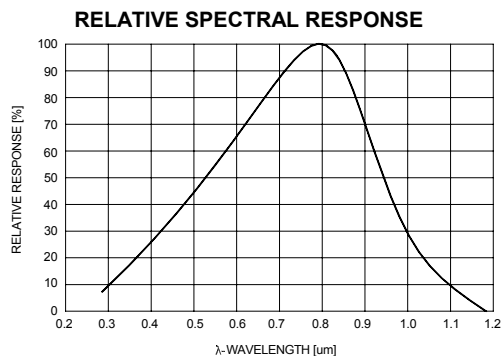
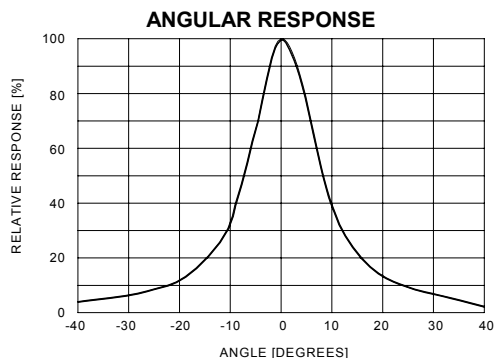
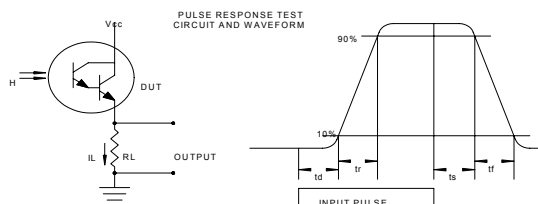
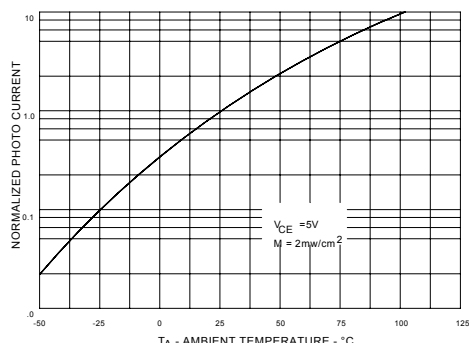


PHOTO CURRENT versus TEMPERATURE



RECOMMENDED OPERATING CONDITIONS:

PARAMETER	SYMBOL	MIN	MAX	UNITS
Bias Voltage-Collector/Emitter	V _{CE}	5	10	mA
Irradiance (H)	H	0.2	1	mW/cm ²

SELECTION GUIDE

PART NUMBER	PART DESCRIPTION	I _L Range
61010-001	Silicon Photodarlington in pigtail package, commercial version	1 to 4mA
61010-101	Silicon Photodarlington in pigtail package (-55° to +125°C) with 100% screening	1 to 4mA
61010-002	Silicon Photodarlington in pigtail package, commercial version	3 to 7mA
61010-102	Silicon Photodarlington in pigtail package (-55° to +125°C) with 100% screening	3 to 7mA
61010-003	Silicon Photodarlington in pigtail package, commercial version	+6mA
61010-103	Silicon Photodarlington in pigtail package (-55° to +125°C) with 100% screening	+6mA