

61056

**PHOTODARLINGTON "PILL PACK"
(TYPE GS1030)**

Mii

**OPTOELECTRONIC PRODUCTS
DIVISION**

Features:

- Hermetically sealed
- High sensitivity
- Small package
- Suitable for high-density pc board mounting
- Spectrally matched to the 62000 series LED.

Applications:

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

DESCRIPTION

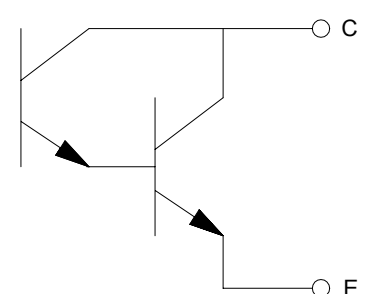
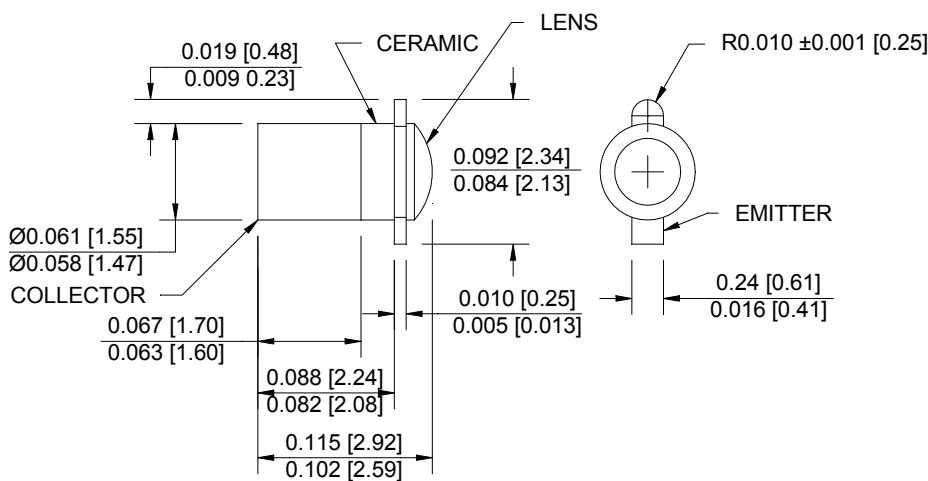
The **61056** is an N-P-N Planar Silicon Photodarlington Transistor in a package designed to be mounted in a double-clad printed circuit board and used in low light level applications. It is available in a range of sensitivities and is lensed for minimum response to stray light. High sensitivity, low dark current leakage, and low saturation voltage make this device ideal for interfacing with TTL circuits. Available custom binned to customer specifications 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



ALL DIMENSIONS ARE IN INCHES [MILLIMETERS]

ELECTRICAL CHARACTERISTICS $T_A = 25^\circ\text{C}$ unless otherwise specified.

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS	NOTE
Light Current	61056-X01 61056-X02 61056-X03	I_L	1 3 6	4 7 --	mA	$V_{CE} = 5.0\text{V}, H = 1.0\text{mW/cm}^2$	1
Dark Current	61056-XXX	I_D		250	nA	$V_{CE} = 10\text{V}, H = 0$	1
Collector-Emitter Breakdown Voltage	61056-XXX	BV_{CEO}	15		V	$I_C = 100\mu\text{A}$	
Emitter-Collector Breakdown Voltage	61056-XXX	BV_{ECO}	5		V	$I_E = 100\mu\text{A}$	
Light Current Rise Time	61056-X01 61056-X02 61056-X03	t_r		15 25 25	μs μs μs	$R_L = 100\Omega, V_{CE} = 5\text{V}, I_L = 1.0\text{mA}$	
Saturation Voltage	61056-X0X	$V_{CE(sat)}$		1.1	V	$I_C = 1\text{mA}, H = 1.0\text{mW/cm}^2$	
Angular Response	61056-X0X	θ		24	degrees		2

NOTES:6

- Irradiance in mW/cm^2 from a tungsten source at a color temperature of 2870K.
- The angle between incidence for peak response and incidence for 50% of peak response.

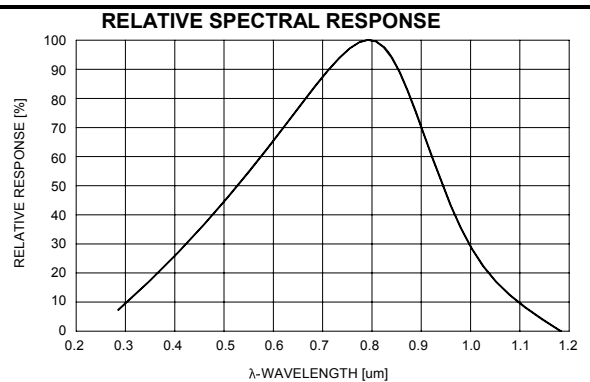
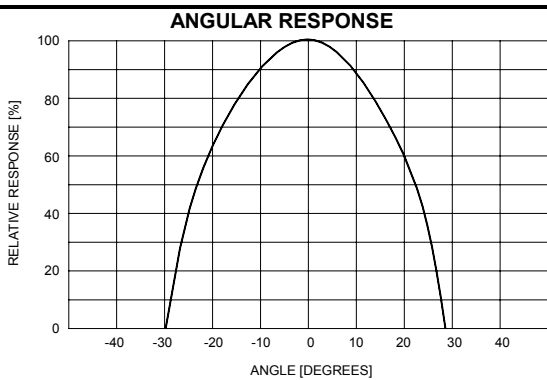
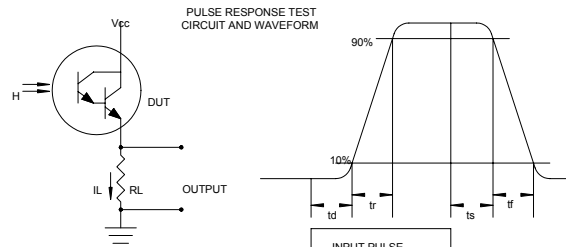
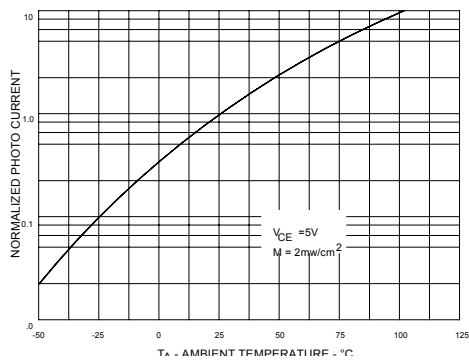


PHOTO CURRENT versus TEMPERATURE



RECOMMENDED OPERATING CONDITIONS:

PARAMETER	SYMBOL	MIN	MAX	UNITS
Bias Voltage-Collector/Emitter	I_F	5	10	mA
Irradiance (H)	H	15	25	mW/cm^2

SELECTION GUIDE

PART NUMBER	PART DESCRIPTION	I_L Range
61056-001	Silicon Photodarlington in pill package, commercial version	1 to 4mA
66156-101	Silicon Photodarlington in pill package (-55° to +100°C) with 100% screening	1 to 4mA
61056-002	Silicon Photodarlington in pill package, commercial version	3 to 7mA
61056-102	Silicon Photodarlington in pill package (-55° to +100°C) with 100% screening	3 to 7mA
61056-003	Silicon Photodarlington in pill package, commercial version	6+mA
61056-103	Silicon Photodarlington in pill package (-55° to +100°C) with 100% screening	6+mA