

05/29/03

### Features:

- Hermetically sealed
- High sensitivity
- Small package
- Suitable for high-density PC board mounting

### Applications:

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

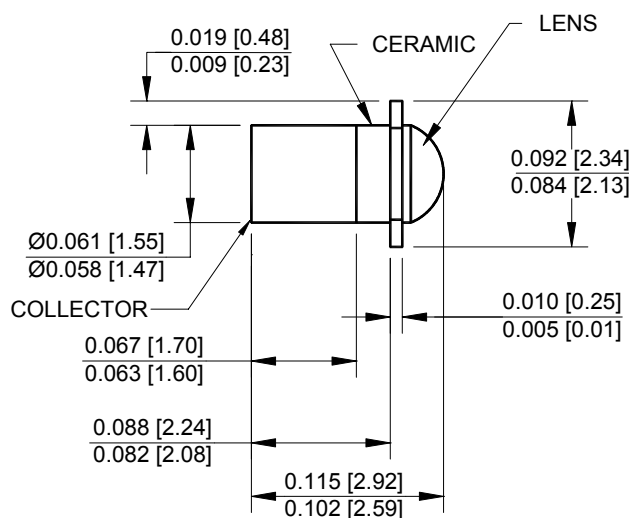
### DESCRIPTION

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

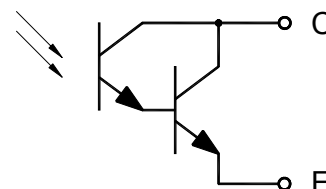
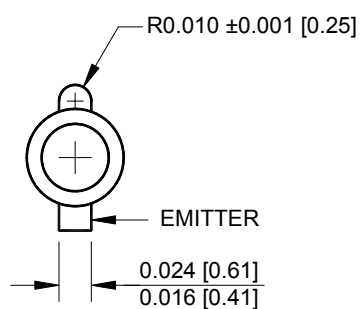
Collector-Emitter Voltage.....	15V
Emitter-Collector Voltage.....	5V
Power Dissipation (Derate at the rate of 0.5 mW/°C above 25°C) .....	50mW
Operating Temperature .....	-55°C to +125°C
Storage Temperature.....	-65°C to +150°C
Lead Soldering Temperature (10 seconds) .....	240°C

## Package Dimensions



ALL DIMENSIONS ARE IN INCHES [MILLIMETERS]

### Schematic Diagram



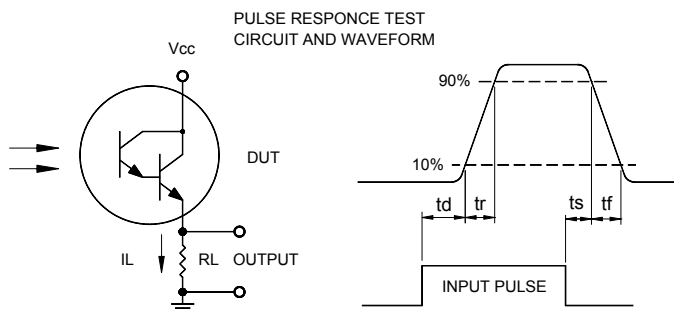
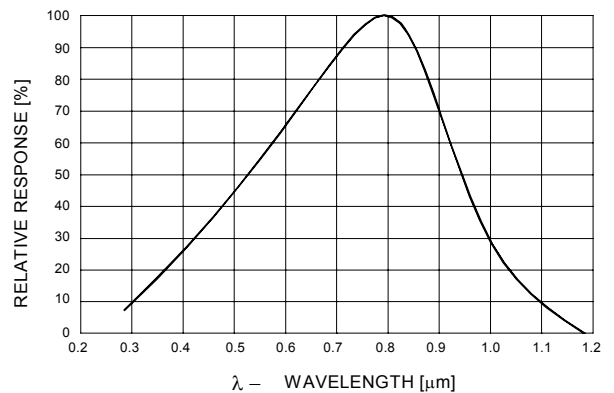


**ELECTRICAL CHARACTERISTICS**  $T_A = 25^\circ\text{C}$  unless otherwise specified.

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS	NOTE
Light Current	61056-X01 61056-X02 61056-X03	1 3 6		4 7 -	mA	$V_{CE} = 5.0\text{V}$ , $H = 1.0\text{mW/cm}^2$	1
Dark Current	61056-X0X			250	nA	$V_{CE} = 10\text{V}$ , $H = 0$	1
Collector-Emitter Breakdown Voltage	61056-X0X	$BV_{CEO}$	15		V	$I_C = 100\mu\text{A}$	
Emitter-Collector Breakdown Voltage	61056-X0X	$BV_{ECO}$	5		V	$I_E = 100\mu\text{A}$	
Light Current Rise Time	61056-X0X	$t_r$		50	$\mu\text{s}$	$R_L = 100\Omega$ , $V_{CE} = 5\text{V}$ , $I_L = 20\text{mA}$	
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	$\theta$	24		degrees		2

**NOTES:**

- Irradiance (H) in  $\text{mW/cm}^2$  from a tungsten source at a color temperature of 2870K.
- The angle between incidence for peak response and incidence for 50% of peak response.

**ANGULAR RESPONSE****RELATIVE SPECTRAL RESPONSE****SELECTION GUIDE**

PART NUMBER	PART DESCRIPTION	$I_L$ Range
61056-001	Commercial	1 to 4mA
66156-101	Screened	1 to 4mA
61056-002	Commercial	3 to 7mA
61056-102	Screened	3 to 7mA
61056-003	Commercial	6 mA (min)
61056-103	Screened	6 mA (min)