

# 61055 SILICON PHOTOTRANSISTOR "PILL PACK"



06/23/03

**Features:**

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

**Applications:**

- Incremental Encoding
- Reflective Sensors
- Position Sensors
- Level Sensors

**DESCRIPTION**

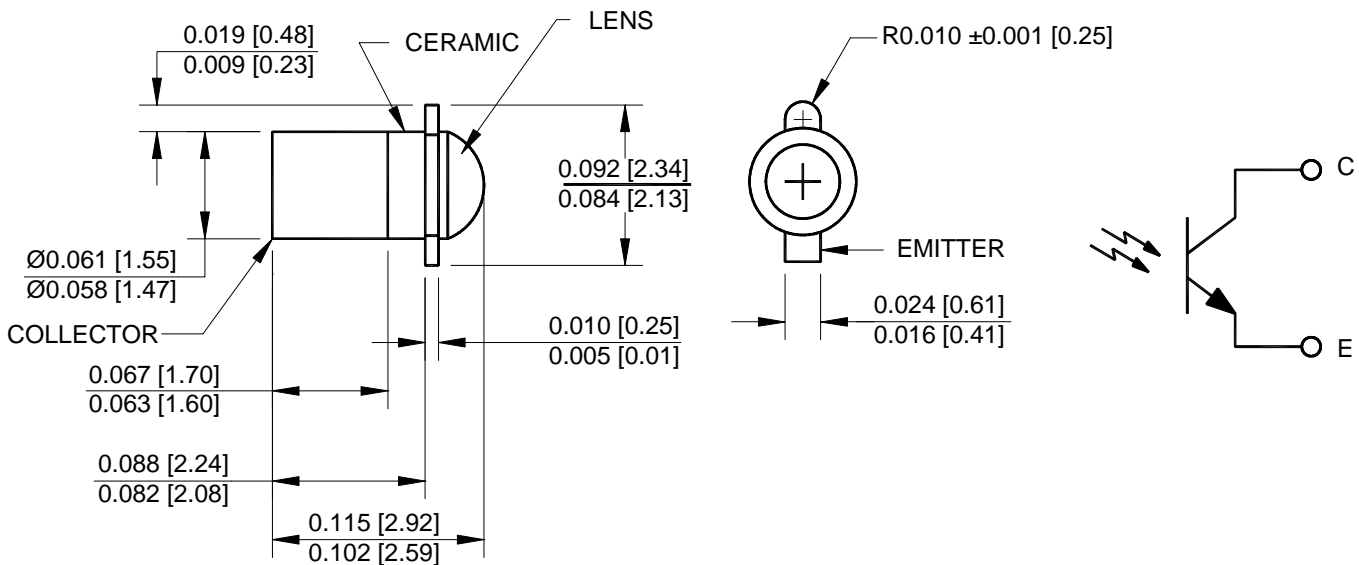
The **61055** is an N-P-N Planar Silicon Transistor in a package designed to be mounted in a double-clad printed circuit board. It is available in a range of sensitivities and is lensed for minimum response to stray light. High sensitivity, low dark current leakage, and low saturation voltage make this 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 .....	-55°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
Soldering Temperature (10 seconds) .....	240°C

**Package Dimensions**

**Schematic Diagram**



ALL DIMENSIONS ARE IN INCHES [MILLIMETERS]

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

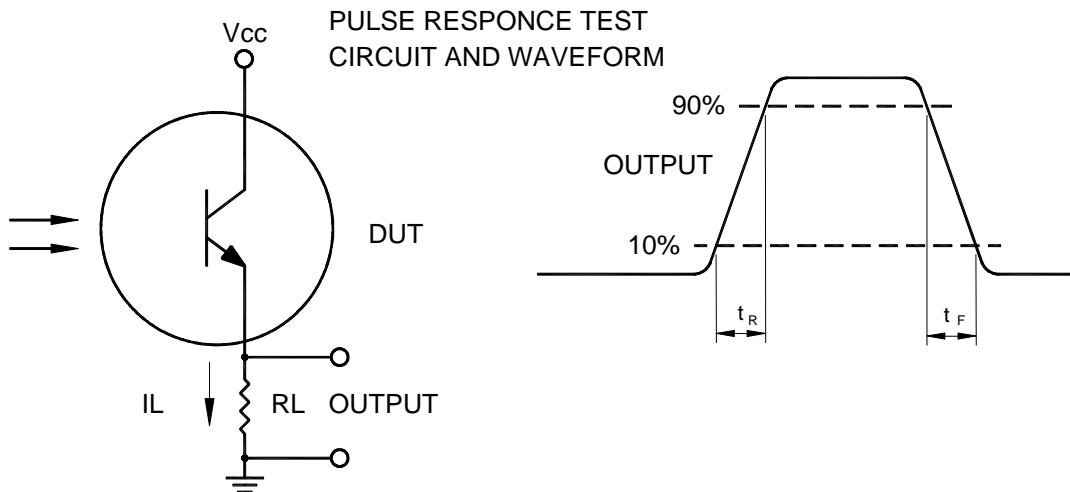
PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS	NOTE	
Light Current	61055-X01 61055-X02 61055-X03 61055-X04 61055-X05 61055-X06	$I_L$	0.5 2.0 4.0 7.0 12.0 20.0		3.0 5.0 8.0 12.0 20.0 --	mA	$V_{CE} = 5.0\text{V}, H = 20\text{Mw}/\text{cm}^2$	1
Dark Current	61055-X0X	$I_D$			25	nA	$V_{CE} = 30\text{V}, H = 0$	1
Collector-Emitter Breakdown Voltage	61055-X0X	$BV_{CEO}$	50			V	$I_C = 100\mu\text{A}$	
Emitter-Collector Breakdown Voltage	61055-X0X	$BV_{ECO}$	7			V	$I_E = 100\mu\text{A}$	
Light Current Rise Time, Fall Time	61055-X0X	$t_r, t_f$			20.0	$\mu\text{sec}$	$R_L = 1\text{K}\Omega, V_{CC} = 30\text{V}, I_L = 1.0\text{mA}$	
Saturation Voltage	61055-X0X	$V_{CE(sat)}$			0.3	V	$I_C = 0.4\text{mA}, H = 20\text{mW}/\text{cm}^2$	
Angular Response	61055-X0X	$\theta$		24		degrees	$R_L = 1\text{K}\Omega, V_{CC} = 5\text{V}, I_L = 1.0\text{mA}$	2

**NOTES:**

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

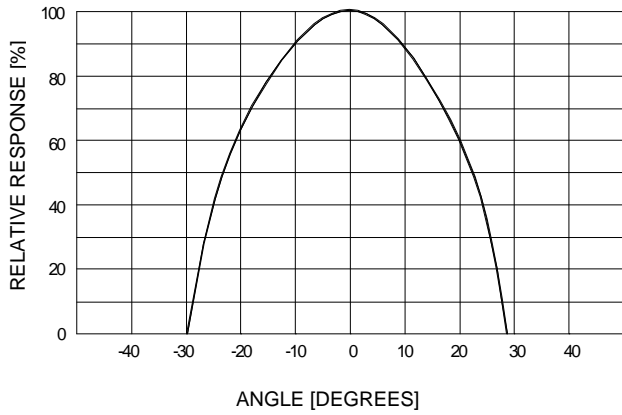
**SELECTION GUIDE**

PART NUMBER	PART DESCRIPTION	$I_L$ Range
61055-001	Commercial	0.5 to 3mA
66155-101	Screened	0.5 to 3mA
61055-002	Commercial	2 to 5mA
61055-102	Screened	2 to 5mA
61055-003	Commercial	4 to 8mA
61055-103	Screened	4 to 8mA
61055-004	Commercial	7 to 12mA
61055-104	Screened	7 to 12 mA
61055-005	Commercial	12to 20mA
61055-105	Screened	12 to 20mA
61055-006	Commercial	20 mA min
61055-106	Screened	20mA min

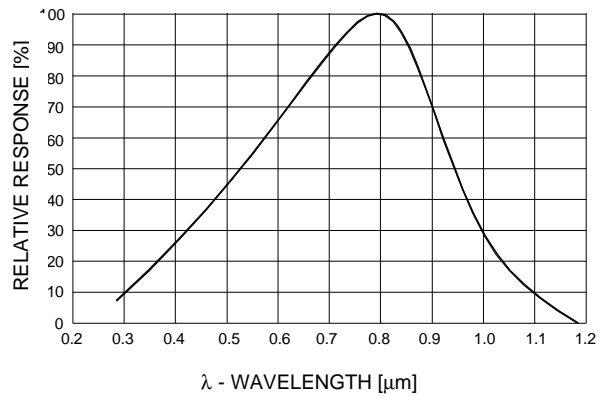


TYPICAL CHARACTERISTICS

ANGULAR RESPONSE



RELATIVE SPECTRAL RESPONSE



NORMALIZED LIGHT CURRENT versus TEMPERATURE

