

**61055****SILICON PHOTOTRANSISTOR "PILL PACK"**
**OPTOELECTRONIC PRODUCTS  
DIVISION**

08/12/2009

**Features:**

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

**Applications:**

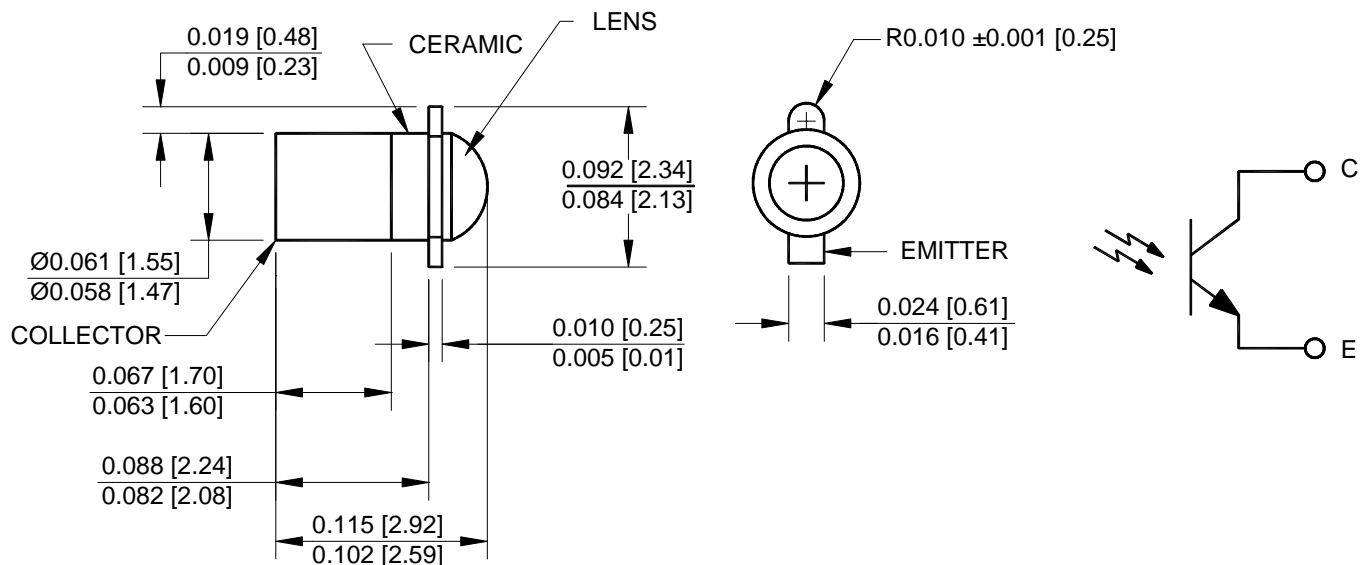
- Incremental Encoding
- Reflective Sensors
- Position Sensors
- Level Sensors

**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.....	50 V
Emitter-Collector Voltage.....	7 V
Power Dissipation (Derate at the rate of 0.5 mW/°C above 25°C).....	50 mW
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.

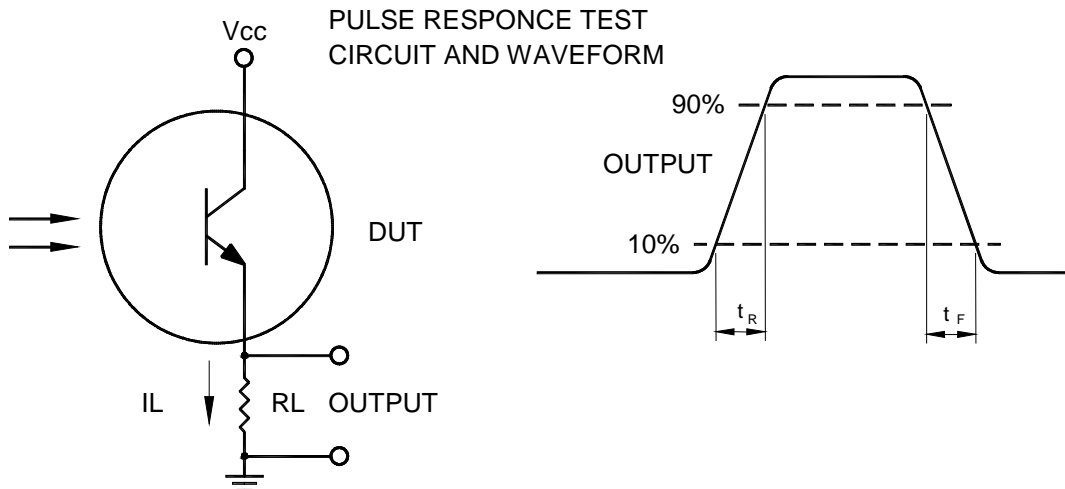
PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS	NOTE
Light Current	61055-X01	0.5		3.0	mA	$V_{CE} = 5.0\text{ V}, H = 20\text{ mW/cm}^2$	1
	61055-X02	2.0		5.0			
	61055-X03	4.0		8.0			
	61055-X04	7.0		12.0			
	61055-X05	12.0		20.0			
	61055-X06	20.0		-			
	61055-305	4.0		-			
Dark Current	61055-X0X	$I_D$		25	nA	$V_{CE} = 30\text{ V}, H = 0$	1
Collector-Emitter Breakdown Voltage	61055-X0X	$BV_{CEO}$	50		V	$I_C = 100\text{ }\mu\text{A}$	
Emitter-Collector Breakdown Voltage	61055-X0X	$BV_{ECO}$	7		V	$I_E = 100\text{ }\mu\text{A}$	
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	$I_C = 0.4\text{ mA}, H = 20\text{ mW/cm}^2$	
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  $\text{mW/cm}^2$  from a tungsten source at a color temperature of  $2870^\circ\text{K}$ .
2. The angle between incidence for peak response and incidence for 50% of peak response.

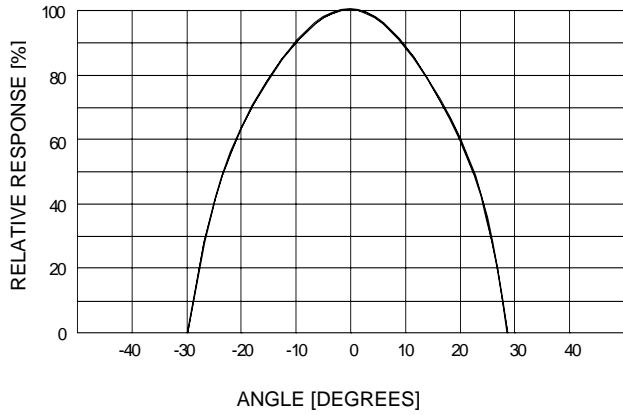
**SELECTION GUIDE**

PART NUMBER	PART DESCRIPTION	$I_L$ Range
61055-001	Commercial	0.5 to 3 mA
66155-101	Screened to JANTX level	0.5 to 3 mA
61055-002	Commercial	2 to 5 mA
61055-102	Screened to JANTX level	2 to 5 mA
61055-003	Commercial	4 to 8 mA
61055-103	Screened to JANTX level	4 to 8 mA
61055-004	Commercial	7 to 12 mA
61055-104	Screened to JANTX level	7 to 12 mA
61055-005	Commercial	12 to 20 mA
61055-105	Screened to JANTX level	12 to 20 mA
61055-006	Commercial	20 mA min
61055-106	Screened to JANTX level	20 mA min
61055-305	Screened to JANS level	4 mA min

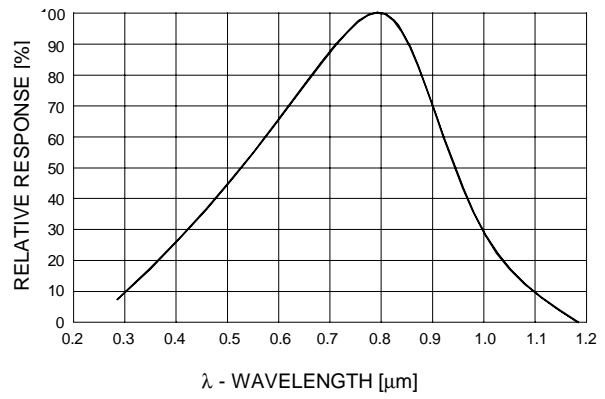


TYPICAL CHARACTERISTICS

ANGULAR RESPONSE



RELATIVE SPECTRAL RESPONSE



NORMALIZED LIGHT CURRENT versus TEMPERATURE

