

61054 SILICON PHOTOTRANSISTOR "GLASS-STICK" (TYPE GS 2020)



OPTOELECTRONIC PRODUCTS
DIVISION

Features:

- Hermetic, Non-hermetic versions
- High sensitivity
- Small cylindrical package

Applications:

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

DESCRIPTION

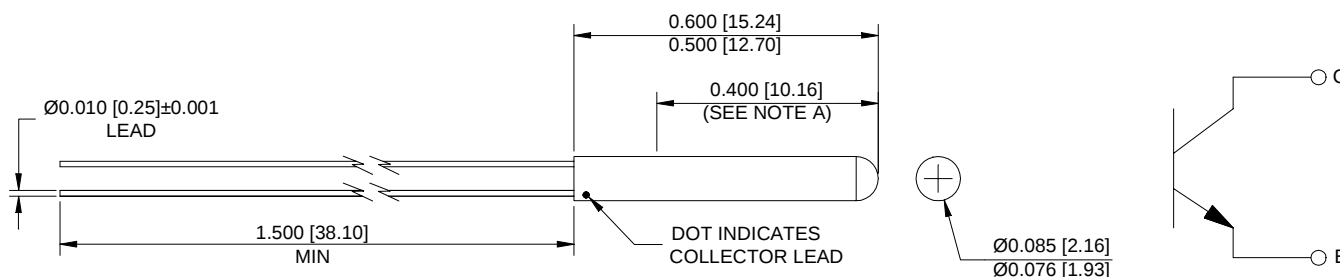
The **61054** is an N-P-N silicon phototransistor in a small diameter hard glass package. The dome shaped lens is flame formed and has a small acceptance angle (30° between half-power points) for low cross-talk between adjacent channels. Available binned to customer specifications or screened to MIL-PRF-19500.

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	6V
Power Dissipation (Derate at the rate of 0.5 mW/°C above 25°C)	50mW
Lead Soldering Temperature (3 minutes)	260°C

Package Dimensions

Schematic Diagram



NOTES:

- A - WITHIN THIS ZONE BODY DIA. IS .079±.003.
B - ALL DIMENSIONS ARE IN INCHES [MILLIMETERS]

SELECTION GUIDE

PART NUMBER	PART DESCRIPTION	I _L Range
61054-001	GS 2020-1 in glass-stick package (commercial)	1 - 3mA
61054-002	GS 2020-2 in glass-stick package (commercial)	1 - 3mA
61054-003	GS 2020-3 (LS400) in glass-stick package (commercial)	1+mA
61054-004	GS 2020-4 (TIL401) in glass-stick package (commercial)	0.5 - 3mA
61054-005	GS 2020-5 (TIL402) in glass-stick package (commercial)	2 - 6mA
61054-006	GS 2020-6 (TIL403) in glass-stick package (commercial)	5 - 10mA
61054-007	GS 2020-7 (TIL404) in glass-stick package (commercial)	8 - 16mA
61054-008	GS 2020-8 (TIL405) in glass-stick package (commercial)	10 - 20mA
61054-009	GS 2020-9 (TIL406) in glass-stick package (commercial)	15+mA

NOTES: 1. First digit in dash number indicates product level: - OXX indicates commercial

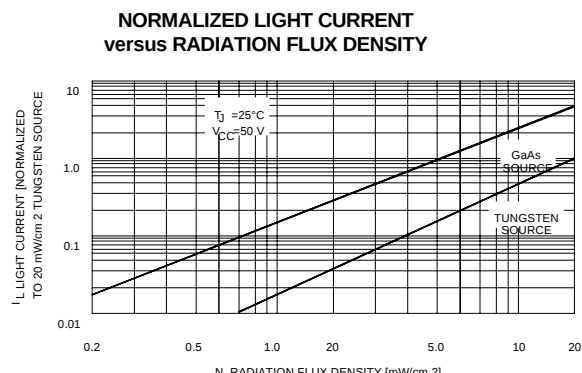
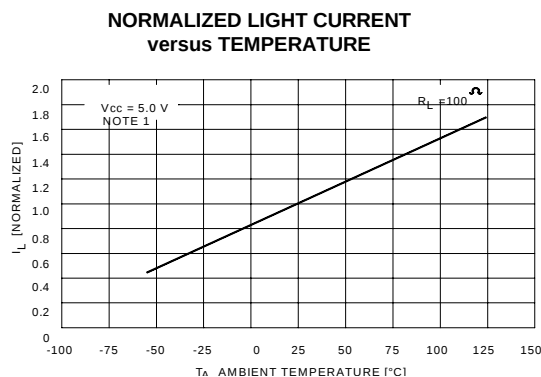
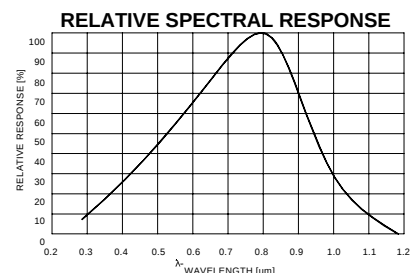
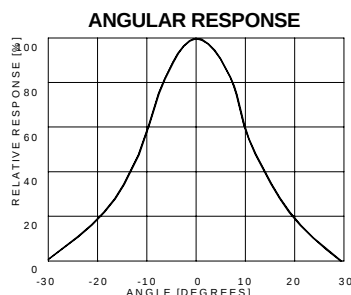
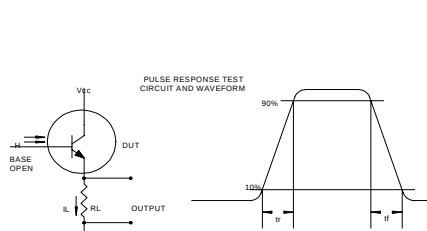
ELECTRICAL CHARACTERISTICS

T_A = 25°C unless otherwise specified.

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS	NOTE
Light Current	61054-X01	1.0		3.0		V _R = 5.0V, H = 9mW/cm ²	1, 3
	61054-X02	1.0		3.0			
	61054-X03	1.0		--			
	61054-X04	0.5		3.0			
	61054-X05	2.0		6.0			
	61054-X06	5.0		10			
	61054-X07	8.0		16			
	61054-X08	10		20			
	61054-X09	15		--			
Dark Current	61054-X01			100	nA	V _{CE} = 30V, H = 0	
	61054-X02 thru -X09			25			
Collector-Emitter Breakdown Voltage	61054-XXX	25			V	I _C = 100μA, H = 0	
	61054-X02 thru -X09	50					
Emitter-Collector Breakdown Voltage	61054-XXX	5				I _E = 100μA, H = 0	
	61054-X02	7			V		
	61054-X03 thru -X09	6					
Rise Time	61054-X0X		2.5		μs	V _{CE} = 5V, I _L = 1mA, R _L = 1kΩ	
Angular Response	61063-X01		15		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.
- Light current is measured with irradiance = 9mW/cm² at a wavelength of 0.7 to 1.0 μm determined by a Corning CS7 69 filter.



RECOMMENDED OPERATING CONDITIONS:

PARAMETER	SYMBOL	MIN	MAX	UNITS
Bias Voltage	V _{CE}	5	10	V
Irradiance (H)	H	8	20	mW/cm ²