

61053 SILICON PHOTOTRANSISTOR "PIGTAIL" (TYPE GS3020)

Mii
OPTOELECTRONIC PRODUCTS
DIVISION

Features:

- Hermetically sealed
- High sensitivity
- Pigtail version available
- Suitable for high-density pc board mounting
- Spectrally matched to the 62017 Series LED.

Applications:

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

DESCRIPTION

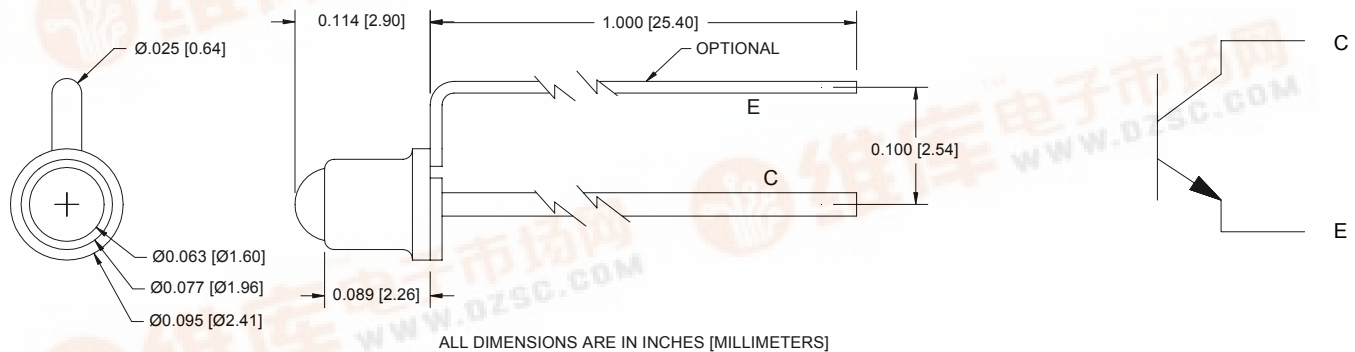
The **61053** is an N-P-N Planar Silicon phototransistor in a package designed to be mounted in a double-clad printed circuit board. It is available in a range of sensitivities and is lensed for minimum response to stray light. High sensitivity, low dark current leakage, and low saturation voltage make this device ideal for interfacing with TTL circuits. This sensor is also available with a lead attached to the case so that it may be connected without the use of printed circuit boards. 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



61053

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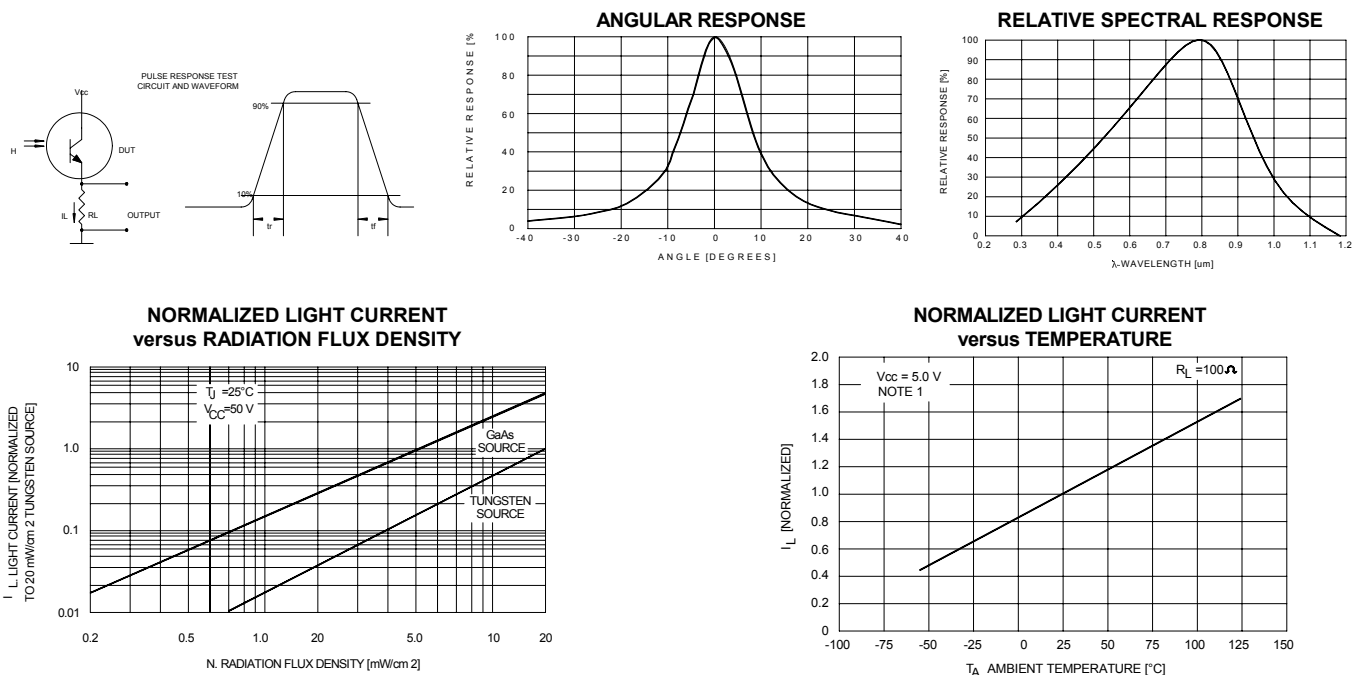
ELECTRICAL CHARACTERISTICS

T_A = 25°C unless otherwise specified.

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS	NOTE
Light Current	61053-X01 61053-X02 61053-X03 61053-X04	I _L	0.7 1.5 3.0 6.0	2.0 4.0 7.0 --	mA	V _{CE} = 5.0V, H = 5 mW/cm ²	1
Dark Current	61053-XXX	I _D		25	nA	V _{CE} = 30V, H = 0	
Collector-Emitter Breakdown Voltage	61053-XXX	BV _{CEO}	50		V	I _C = 100μA	
Emitter-Collector Breakdown Voltage	61053-XXX	BV _{ECO}	7		V	I _E = 100μA	
Light Current Rise Time	61053-X01 61053-X02 61053-X03 61053-X04	t _r		2.0 3.0 5.0 7.0		R _L = 1KΩ, V _{CC} = 5V, I _L = 1.0mA	
Saturation Voltage	61053-X01	V _{CE(sat)}		0.3	V	I _C = 0.4mA, H = 5 mW/cm ²	
Angular Response	61053-X01	θ		12	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.



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
61053-001	Silicon Phototransistor in coax package, commercial version	0.7 to 2mA
66153-101	Silicon Phototransistor in coax package (-55° to +100°C) with 100% screening	0.7 to 2mA
61053-002	Silicon Phototransistor in pill package, commercial version	1.5 to 4mA
61053-102	Silicon Phototransistor in pill package (-55° to +100°C) with 100% screening	1.5 to 4mA
61053-003	Silicon Phototransistor in pill package, commercial version	3 to 7mA
61053-103	Silicon Phototransistor in pill package (-55° to +100°C) with 100% screening	3 to 7mA
61053-004	Silicon Phototransistor in pill package, commercial version	6+mA
61053-104	Silicon Phototransistor in pill package (-55° to +100°C) with 100% screening	6+mA

NOTE: Add L following dash number (e.g. -004L) to indicate loop lead.