

# SILICON PHOTOTRANSISTOR "PIGTAIL" 61053 (TYPE GS 3020)

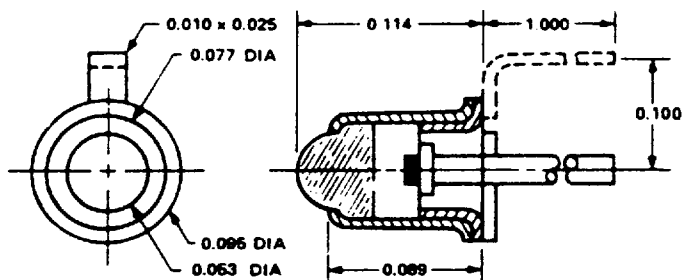


## GENERAL DESCRIPTION

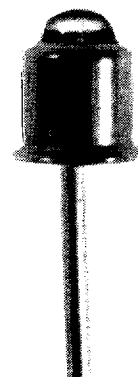
MINIATURE LIGHT SENSOR WITH NARROW ANGULAR RESPONSE  
GLASS/METAL WELDED HERMETIC PACKAGED

Mii 61053 is an N-P-N Planar Silicon Photodarlington Transistor in a lensed coaxial package designed to be mounted in a single-clad printed circuit board. Its large effective aperture and narrow angular response make this a highly sensitive device with minimum response to off-axis or stray light. This sensor is also available with a lead attached to the case so that it may be connected without the use of a printed circuit board. Available screened to MIL-S-19500.

## PHYSICAL DESCRIPTION



ALL DIMENSIONS ARE IN INCHES.



## OPTICAL/ELECTRICAL CHARACTERISTICS AT 25°C

PARAMETER	LIGHT CURRENT		DARK CURRENT	COLLECTOR BREAKDOWN	EMITTER BREAKDOWN	LIGHT CURRENT RISE TIME	SATURATION VOLTAGE	ANGULAR RESPONSE
TEST CONDITION	$V_{CE} = 5.0V$ * $H = 5 \text{ mW/cm}^2$		$V_{CE} = 30V$ $H = 0$	$I_C = 100 \mu A$	$I_E = 100 \mu A$	$R_L = 1000\Omega$ $V_{oc} = 5V$ $I_L = 1.0mA$	$I_C = 0.4 \text{ ma}$ $H$ as shown	Note 1
SYMBOL	$I_L$		$I_D$	$BV_{CEO}$	$BV_{ECO}$	$t_r$	$V_{CE}(\text{sat})$	$\theta$
UNIT	mA		nA	VOLTS	VOLTS	$\mu \text{ sec}$	VOLTS	degrees
	MIN	MAX	MAX	MIN	MIN	TYP	TYP	TYP
GS 3020-1	0.7	2.0	25	50	7	2.0	0.3	12
GS 3020-2	1.5	4.0	25	50	7	3.0	0.3	12
GS 3020-3	3.0	7.0	25	50	7	5.0	0.3	12
GS 3020-4	6.0	-	25	50	7	7.0	0.3	12

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

**SILICON PHOTOTRANSISTOR, TYPE GS 3020, Continued**

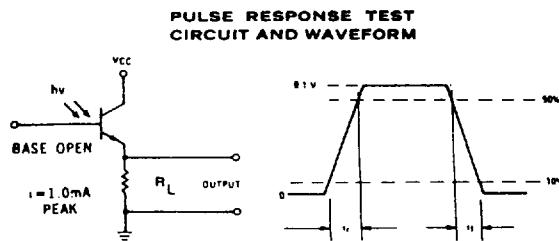
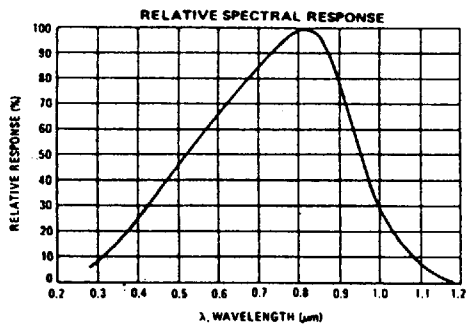
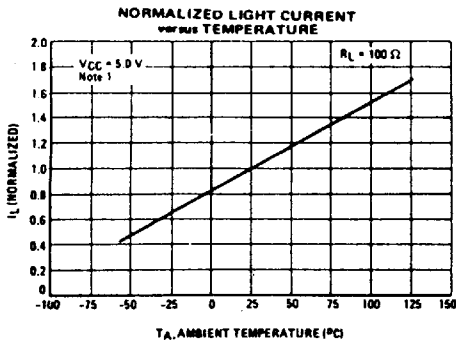
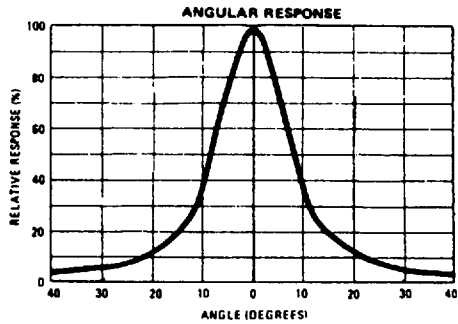
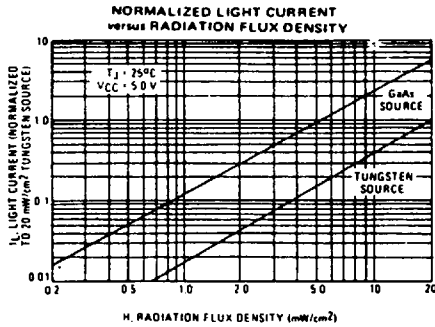
**61053 SILICON PHOTOTRANSISTOR**

**ABSOLUTE MAXIMUM RATINGS** 25°C FREE AIR TEMPERATURE UNLESS NOTED

Collector-Emitter Voltage . . . . .	50 V
Emitter-Collector Voltage . . . . .	7 V
Total Device Dissipation at (or below) 25°C Free-Air Temperature (See Note)	50 m W
Operating Free-Air Temperature Range . . . . .	-65°C to +125°C
Storage Temperature Range . . . . .	-65°C to +150°C
Soldering Temperature (3 minutes) . . . . .	240°C

NOTE: Derate linearly to 125°C free-air temperature at the rate of 0.5 mW/°C.

**TYPICAL CHARACTERISTICS**



For unsaturated rise time measurements, radiation is provided by a pulsed GaAs (gallium-arsenide) LED ( $\lambda=0.9\mu\text{m}$ ) with a pulse width equal to or greater than 200 microseconds.

