

SILICON PHOTOTRANSISTOR "PIGTAIL" 61053 (TYPE GS 3020)



GENERAL DESCRIPTION

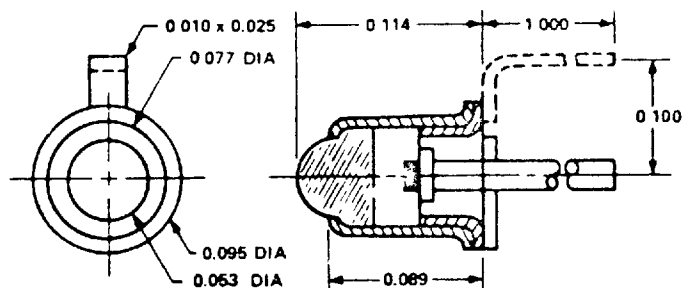
T-41.61

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

Mii 61053 is an N-P-N Silicon Phototransistor 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



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	$V_{CE} = 5.0V$ $H = 5 \text{ mW/cm}^2$		$V_{CE} = 30V$ $H = 0$	$I_C = 100 \mu A$	$I_E = 100 \mu A$	$H_L = 1000 \text{ lx}$ $V_{CC} = 5V$ $I_L = 1.0 \text{ mA}$	$I_C = 0.4 \text{ ma}$ H as shown	Note 1
SYMBOL	I_L		I_D	BV_{CEO}	BV_{ECO}	t_r	$V_{CE}(\text{sat})$	θ
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	3.0	-	25	50	7	7.0	0.3	12

* Irradiance in mW/cm^2 from a tungsten source at a color temperature of 2870°K

1 The angle between incidence for peak response and incidence for 50% of peak response

SILICON PHOTOTRANSISTOR, TYPE GS 3020, *Continued*

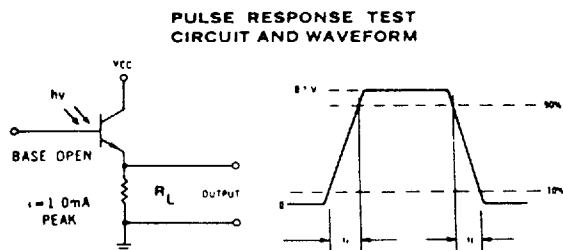
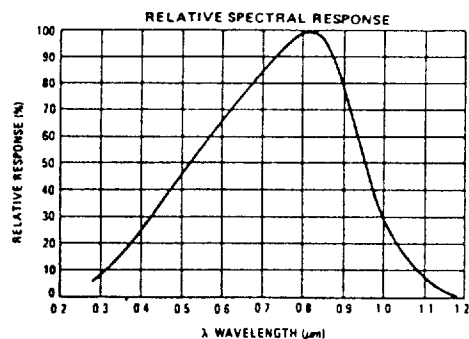
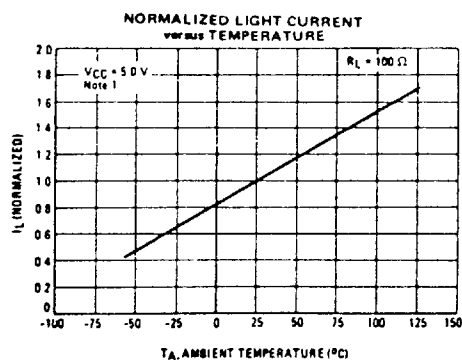
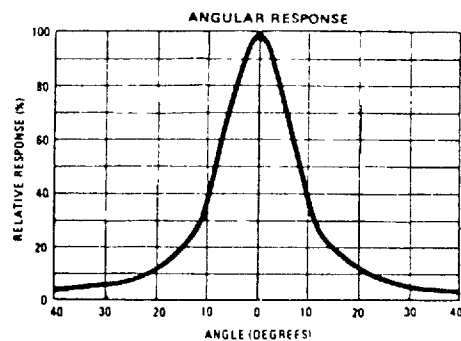
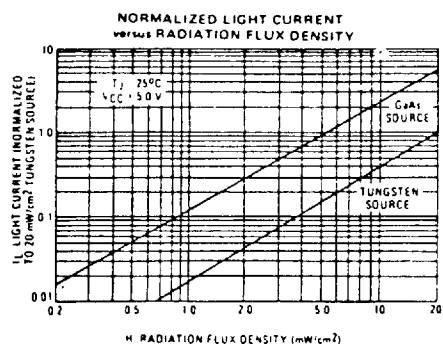
61053 SILICON PHOTOTRANSISTOR

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 mW
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.