

# T-1 3/4 PACKAGE NPN PHOTOTRANSISTOR

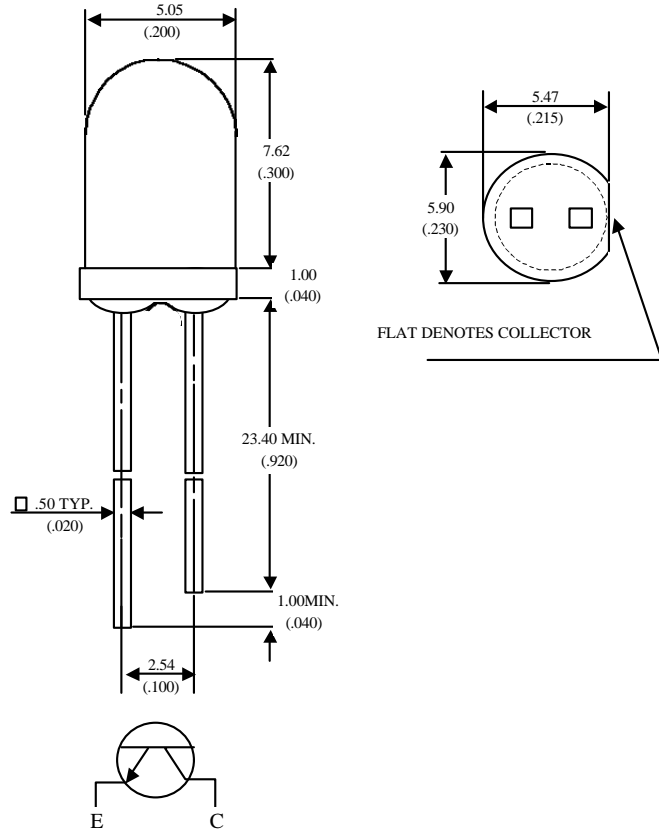
MID-54A22

## Description

The MID-54A22 is a NPN silicon phototransistor mounted in a lensed, special dark plastic package. The lensing effect of the package allows an acceptance view angle of 40° so that the product performs a high directional characteristic.

## Package Dimensions

Unit: mm ( inches )



## Features

- Wide range of collector current
- Lensed for high sensitivity
- Low cost plastic package
- Standard T-1 3/4 (5mm) package.
- Good spectral matching IRED (940nm) type.
- Acceptance angle :40°

### Notes :

- 1.Tolerance is  $\pm 0.25$  mm (.010") unless otherwise noted.
- 2.Protruded resin under flange is 1.0 mm (.040") max.
- 3.Lead spacing is measured where the leads emerge from the package.

## Absolute Maximum Ratings

@  $T_A=25^\circ\text{C}$

Parameter	Maximum Rating	Unit
Power Dissipation	150	mW
Collector-Emitter Voltage	30	V
Emitter-Collector Voltage	5	V
Operating Temperature Range	-55°C to +100°C	
Storage Temperature Range	-55°C to +100°C	
Lead Soldering Temperature	260°C for 5 seconds	

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02/04/2002

## Optical-Electrical Characteristics

@ T<sub>A</sub>=25°C

Parameter	Test Conditions	Symbol	Min.	Typ .	Max.	Unit
Collector-Emitter Breakdown Voltage	I <sub>c</sub> =0.1mA E <sub>e</sub> =0	V <sub>(BR)CEO</sub>	30			V
Emitter-Collector Breakdown Voltage	I <sub>e</sub> =0.1mA E <sub>e</sub> =0	V <sub>(BR)ECO</sub>	5			V
Collector-Emitter Saturation Voltage	I <sub>c</sub> =0.5mA E <sub>e</sub> =0.1mW/cm <sup>2</sup>	V <sub>CE(SAT)</sub>			0.4	V
Rise Time	V <sub>cc</sub> =5V, R <sub>L</sub> =1KΩ	Tr		15		μS
Fall Time	I <sub>C</sub> =1mA	Tf		15		
Collector Dark Current	V <sub>CE</sub> =10V E <sub>e</sub> =0	I <sub>CEO</sub>			100	nA
On State Collector Current	V <sub>CE</sub> =5V E <sub>e</sub> =0.1mW/cm <sup>2</sup>	I <sub>C(ON)</sub>		0.8		mA

## Typical Optical-Electrical Characteristic Curves

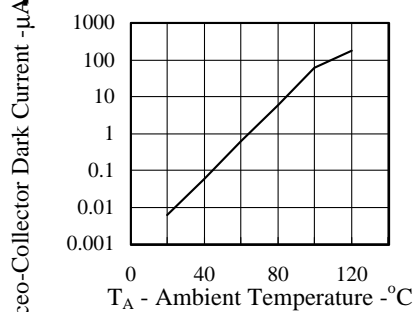


FIG.1 COLLECTOR DARK CURRENT

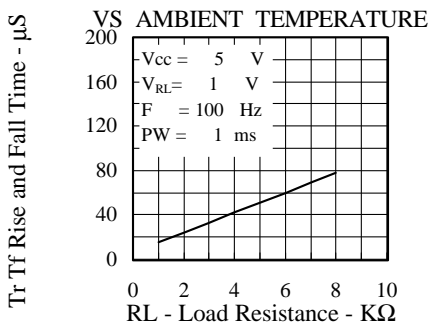


FIG.3 RISE AND FALL TIME VS LOAD RESISTANCE

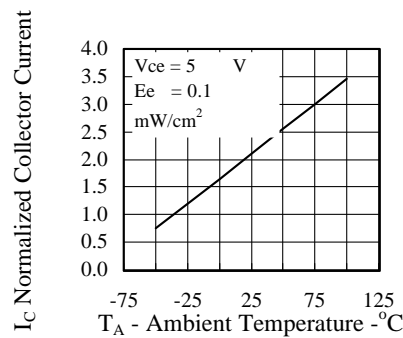


FIG.2 NORMALIZED COLLECTOR CURRENT

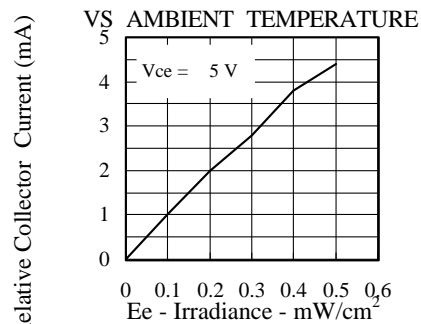


FIG.4 RELATIVE COLLECTOR CURRENT VS IRRADIANCE

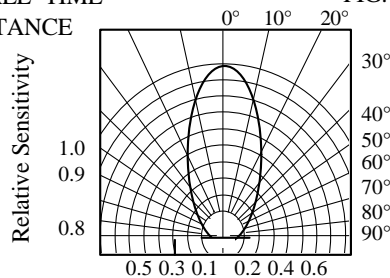


FIG.5 SENSITIVITY DIAGRAM