

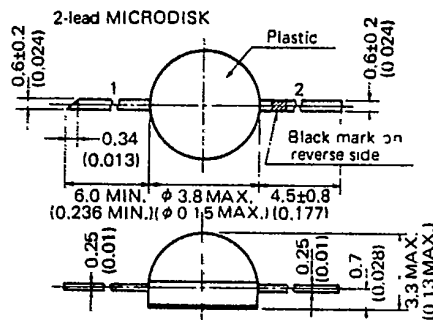
PHOTO TRANSISTOR PH102

NPN EPITAXIAL PHOTOTRANSISTOR PHOTO DETECTOR

DESCRIPTION

The PH102 is a miniature NPN silicon phototransistor having exceptionally stable characteristics mounted in a two-terminal MICRODISK package. The spectral response, extending from 400 to 1000 nm, is compatible with daylight, tungsten, and gallium arsenide sources. The packaging of this unit permits close-spacing in linear arrays. Its low cost and volume producibility opens new areas of use anywhere a photo detector is desirable.

PACKAGE DIMENSIONS in millimeters (inches)



1. Collector
2. Emitter

• Soldering conditions are at 260 °C or less within 5 s at 3 mm or farther from the case.

FEATURES

- High speed.
- Low cost.
- Low leakage current.
- Wide spectral response.
- Wide temperature range.
- Compact, rugged, light weight.
- High sensitivity.

APPLICATIONS

- Optical switching and encoding.
- Intrusion alarm.
- Tape and card reader sensor.
- Level control.
- Motor governor

ABSOLUTE MAXIMUM RATINGS

Maximum Collector to Emitter Voltage (Ta=25 °C)	V _{CE0}	30	V
Maximum Collector Current (Ta=25 °C)	i _C	40	mA
Maximum Power Dissipation (Ta=25 °C)	P _C	100	mW
Maximum Temperatures (Ta = 25 °C)			
Junction Temperature	T _j	80	°C
Storage Temperature	T _{stg}	-30 to +80	°C

ELECTRO-OPTICAL CHARACTERISTICS (Ta=25 °C)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector to Emitter Dark Current	I _{CEO}			200	nA	V _{CE} =10 V, L=0 lx
Collector Saturation Voltage	V _{CE(sat)}			0.3	V	I _C =0.5 mA, L*=1,000 lx
Photo Current	I _L	50	180		μA	V _{CE} =2.0 V, L*=100 lx
Fall Time	t _f		5		μs	V _{CE} =10 V, I _L =2 mA, R _L =100 Ω
Rise Time	t _r		5		μs	V _{CE} =10 V, I _L =2 mA, R _L =100 Ω

*Measured with a tungsten filament lamp operated at a color temperature of 2854 K.

PH102

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TYPICAL CHARACTERISTICS (Ta = 25 °C)

