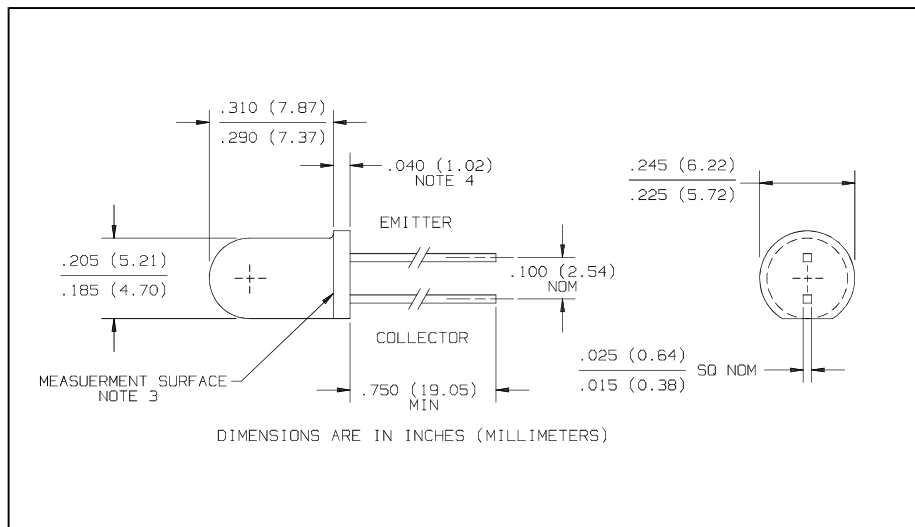


NPN Plastic Silicon Phototransistors Type OP599 Series



Features

- Variety of sensitivity ranges
- T-1 3/4 package style

Description

The OP599 series phototransistor consists of an NPN silicon phototransistor mounted in a dark blue plastic injection molded shell package. The narrow receiving angle provides excellent on-axis coupling. The sensors are 100% production tested for close correlation with Optek GaAlAs emitters.

Optek's packaging process provides excellent optical and mechanical axis alignment. The shell also provides excellent optical lens surface, control of chip placement, and consistency of the outside package dimensions.

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)

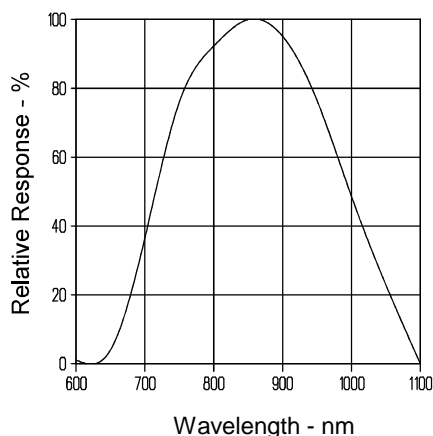
Collector-Emitter Voltage	30 V
Emitter-Collector Voltage	5.0 V
Continuous Collector Current	50 mA
Storage and Operating Temperature Range	-40°C to $+100^\circ\text{C}$
Lead Soldering Temperature (1/16 inch [1.6 mm] from case for 5 sec. with soldering iron)	$260^\circ\text{C}^{(1)}$
Power Dissipation	100 mW ⁽²⁾

Notes:

- (1) RMA flux is recommended. Duration can be extended to 10 sec. max. when flow soldering. Max. 20 grams force may be applied to leads when soldering.
- (2) Derate linearly 1.33 mW/ $^\circ\text{C}$ above 25°C .
- (3) $V_{CE} = 5\text{ V}$. Light source is an unfiltered GaAlAs emitting diode operating at peak emission wavelength of 890 nm and $E_e(\text{APT})$ of .25 mW/cm².
- (4) This dimension is held to within ± 0.005 " on the flange edge and may vary up to ± 0.020 " in the area of the leads.

Typical Performance Curves

Typical Spectral Response

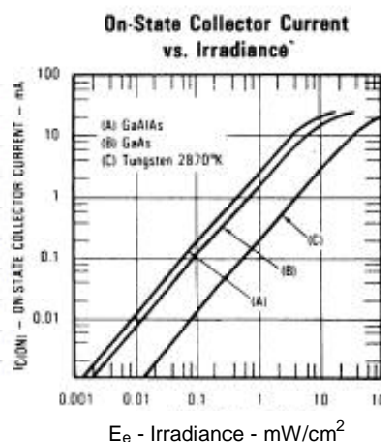


Types OP599

Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
$I_{C(ON)}$	On-State Collector Current	OP599D	0.20		mA	See Note (3)
		OP599C	0.40		mA	See Note (3)
		OP599B	1.20	1.95	mA	See Note (3)
		OP599A	2.35	3.85	mA	See Note (3)
I_{CEO}	Collector Dark Current			100	nA	$V_{CE} = 10.0\text{ V}$, $E_e = 0$
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	30			V	$I_C = 100\text{ }\mu\text{A}$
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage	5.0			V	$I_E = 100\text{ }\mu\text{A}$
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage			0.40	V	$I_C = 100\text{ }\mu\text{A}$ $E_e = 0.25\text{ mW/cm}^2(3)$

Typical Performance Curves



Optek reserves the right to make changes at any time in order to improve design and to supply the best product possible.

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