NPN Silicon Phototransistor

OP599 Series

Features:

- Dark blue injection-molded plastic package
- Variety of sensitivity ranges
- T-1¾ package style with TO-18 base
- Excellent optical lens surface
- Excellent chip placement

Description:

Each device in this series consists of a NPN silicon phototransistor mounted in a dark blue plastic injection molded shell package, with a narrow receiving angle that provides excellent on-axis coupling and optical/mechanical axis alignment. The shell also provides excellent optical lens surface, control of chip placement and consistency of the outside package dimensions.

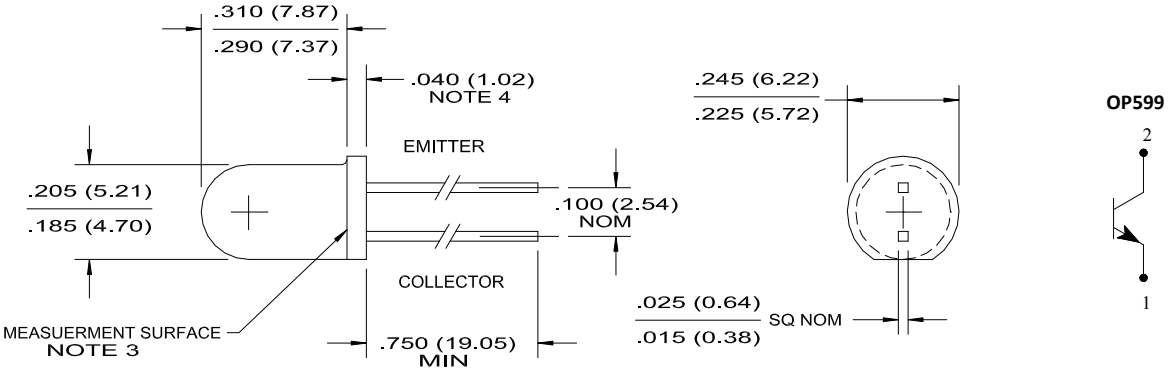
The **OP599** series sensors are 100% production tested for close correlation with OPTEK GaAlAs emitters.

Please refer to Application Bulletins 208 and 210 for additional design information and reliability (degradation) data.

Applications:

- Applications requiring a narrow receiving angle
- Applications that are space-limited

Ordering Information			
Part Number	**Sensor**	**Viewing Angle**	**Lead Length**
OP599A	Transistor	20°	0.75"
OP599B			
OP599C			
OP599D			



DIMENSIONS ARE IN: [MILLIMETERS] INCHES

Pin #	Sensor
1	Emitter
2	Collector

RoHS

CONTAINS POLYSULFONE

To avoid stress cracking, we suggest using ND Industries' **Vibra-Tite** for thread-locking. **Vibra-Tite** evaporates fast without causing structural failure in OPTEK'S molded plastics.

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Electrical Specifications

Absolute Maximum Ratings (T_A = 25° C unless otherwise noted)	
Storage and Operating Temperature Range	-40° C to +100° C
Collector-Emitter Voltage	30 V
Emitter-Collector Voltage	5 V
Continuous Collector Current	50 mA
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 seconds with soldering iron]	260° C(1)
Power Dissipation	100 mW(2)

Electrical Characteristics (T_A = 25° C unless otherwise noted)

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

Notes:
1. RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering. A maximum 20 grams force may be applied to the leads when soldering.
2. Derate linearly 1.33 mW/° C above 25° C.
3. V_{CE} = 5 V. Light source is an unfiltered GaAlAs emitting diode operating at peak emission wavelength of 890 nm and $E_{E(APT)}$ of 0.25 mW/cm^2.
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.

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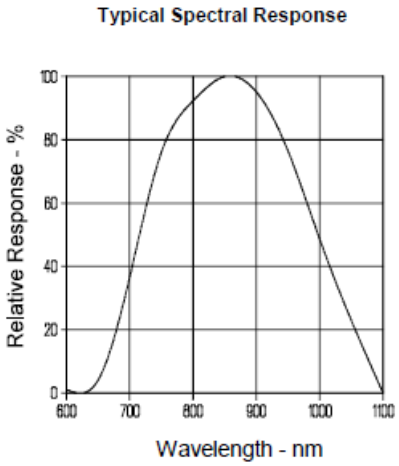
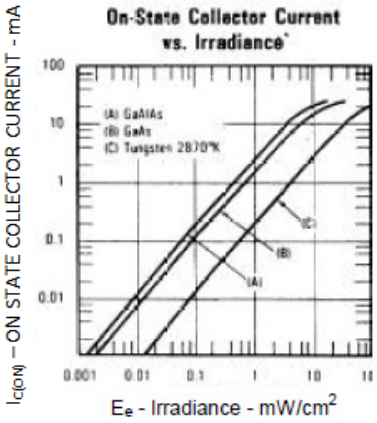
Performance





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