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.

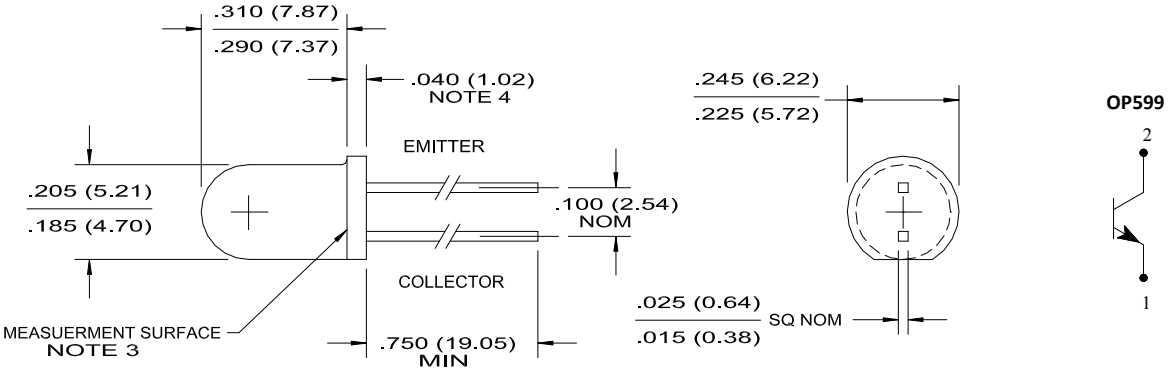
The **OP599** series sensors are 100% production tested for close correlation with OPTEK GaAlAs emitters.

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.

General Note
TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

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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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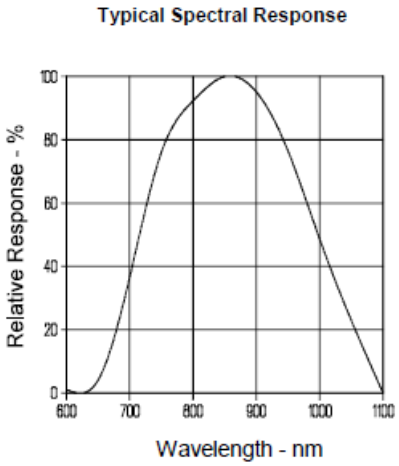
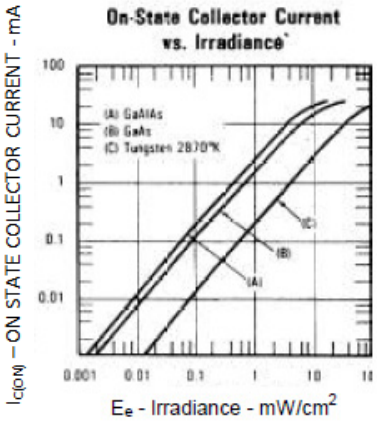
Performance





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