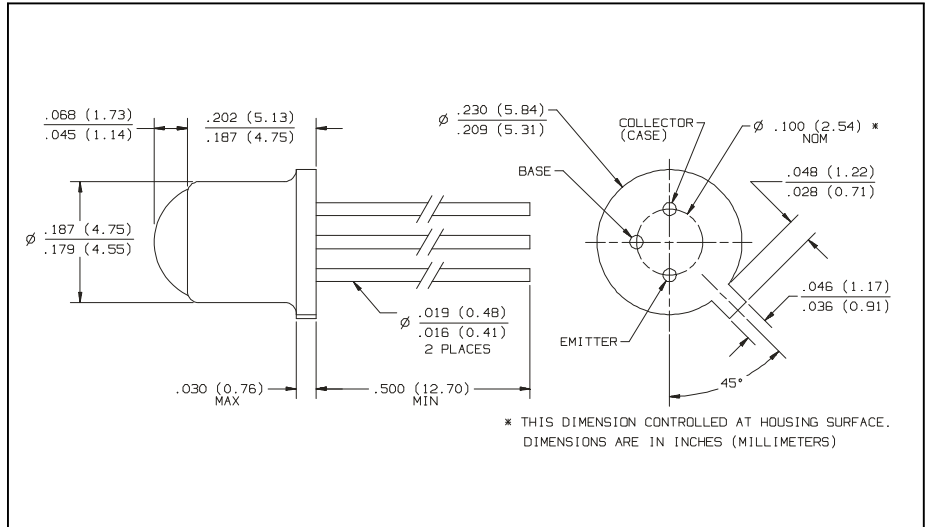


Hi-Reliability NPN Silicon Phototransistor

Types OP803TX/TXV, OP804TX/TXV, OP805TX/TXV



Features

- High reliability screening patterned after MIL-PRF-19500
- Each lot subjected to Group A & B Lot Acceptance
- Lensed for high sensitivity
- Mechanically and spectrally matched to the OP235TX/TXV and OP236TX/TXV series IREDs

Description

Each device in the OP803, OP804 and OP805TX/TXV series consists of a high reliability NPN phototransistor mounted in a lensed, hermetically sealed, TO-18 package. All devices are 100% screened per Table II of MIL-PRF-19500. Typical screening and lot acceptance tests are provided on page 13-4.

The OP803, OP804 and OP805 TX/TXV series lensing creates an acceptance half angle of $12^{\circ \pm 0.5^{\circ}}$ measured from the optical axis to the half power point. The series can be matched with either a solid state infrared source, such as the OP235 and OP236 TX/TXV series IREDs, or can be used to sense infrared content in a visible light source, such as a tungsten bulb or sunlight for automatic brightness control.

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

Storage Temperature Range	-65°C to $+150^{\circ} \text{C}$
Operating Temperature Range	-55°C to $+125^{\circ} \text{C}$
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 sec. with soldering iron]	240°C ⁽¹⁾
Collector-Emitter Voltage	30 V
Collector-Base Voltage	30 V
Emitter-Base Voltage	5.0 V
Emitter-Collector Voltage	5.0 V
Power Dissipation	250 mW ⁽²⁾

Notes:

- (1) RMA flux is recommended. Duration can be extended to 10 sec. max. when flow soldering.
(2) Derate linearly 2.5 mW/ $^{\circ} \text{C}$ above 25°C .

Types OP803TX/TXV, OP804TX/TXV, OP805TX/TXV

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					
	OP803TX, TXV	4.0		8.0	mA	$V_{CE} = 5.0\text{ V}$, $E_e = 5.0\text{ mW/cm}^2^{(3)}$
	OP804TX, TXV	7.0		22.0	mA	$V_{CE} = 5.0\text{ V}$, $E_e = 5.0\text{ mW/cm}^2^{(3)}$
	OP805TX, TXV	15.0			mA	$V_{CE} = 5.0\text{ V}$, $E_e = 5.0\text{ mW/cm}^2^{(3)}$
I_{CEO}	Collector-Emitter Dark Current			100 100	nA μA	$V_{CE} = 10.0\text{ V}$, $E_e = 0$ $V_{CE} = 10.0\text{ V}$, $E_e = 0$, $T_A = 100^{\circ}\text{C}$
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	30			V	$I_C = 100\text{ }\mu\text{A}$, $I_E = 0$, $E_e = 0$
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	30			V	$I_C = 100\text{ }\mu\text{A}$, $I_B = 0$, $E_e = 0$
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	5.0			V	$I_E = 100\text{ }\mu\text{A}$, $I_C = 0$, $E_e = 0$
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage			0.40	V	$I_C = 0.4\text{ mA}$, $E_e = 5.0\text{ mW/cm}^2^{(3)}$
t_r	Rise TimeOP804TX, TXV OP805TX, TXV			10.0 15.0	μs	$V_{CC} = 30\text{ V}$, $I_C = 1.00\text{ mA}$, $R_L = 100\text{ }\Omega$
t_f	Fall TimeOP804TX, TXV OP805TX, TXV			10.0 15.0	μs	

(3) Light source is an unfiltered tungsten lamp operated at a temperature of 2870 K.

@TOPICS =

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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