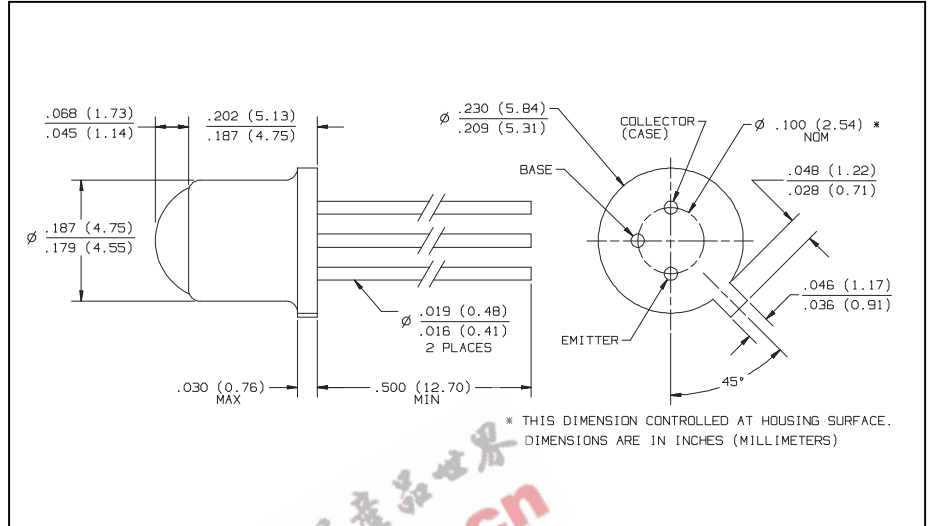


Hi-Reliability NPN Silicon Phototransistor

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° 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 ^o C to +150 ^o C
Operating Temperature Range	-55 ^o C to +125 ^o C
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 sec. with soldering iron]	240 ^o 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:

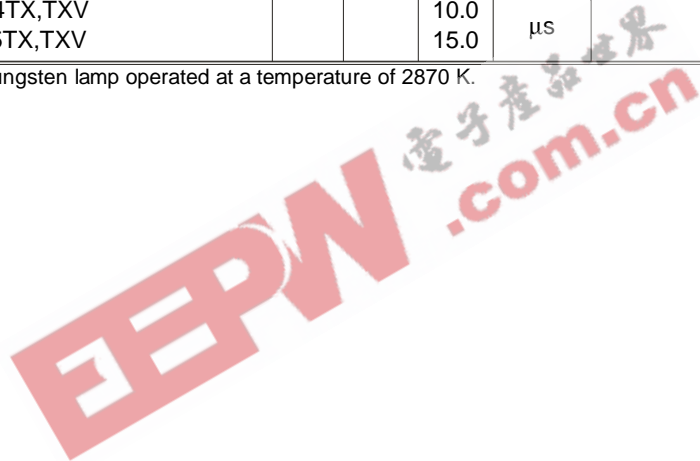
- (1) RMA flux is recommended. Duration can be extended to 10 sec. max. when flow soldering.
- (2) Derate linearly 2.5 mW/^o C above 25^o C.

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	nA	$V_{CE} = 10.0 \text{ V}, E_e = 0$
				100	μA	$V_{CE} = 10.0 \text{ V}, E_e = 0, T_A = 100^\circ \text{C}$
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	30			V	$I_C = 100 \mu\text{A}, I_E = 0, E_e = 0$
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	30			V	$I_C = 100 \mu\text{A}, I_B = 0, E_e = 0$
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	5.0			V	$I_E = 100 \mu\text{A}, I_C = 0, E_e = 0$
$V_{CE(SAT)}$	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 Time			10.0	μs	$V_{CC} = 30 \text{ V}, I_C = 1.00 \text{ mA}, R_L = 100 \Omega$
				15.0		
t_f	Fall Time			10.0	μs	
				15.0		

(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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