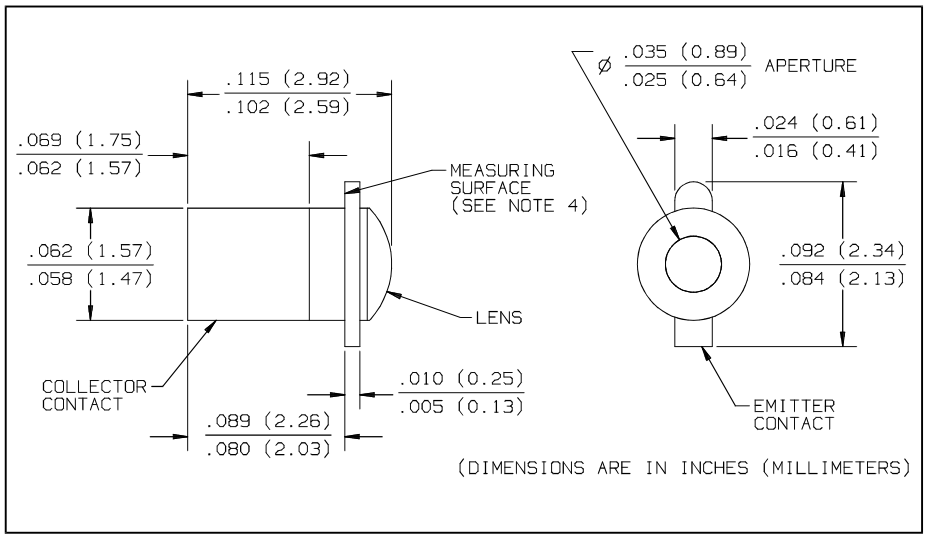
Product Bulletin OP602TX/V
September 1996

Hi-Reliability NPN Silicon Phototransistors
Types OP602TX/V, OP603TX/V, OP604TX/V, OP604S



Features

- Processed to Optek's military screening program patterned after MIL-PRF-19500
- Miniature hermetically sealed package
- Wide range of collector currents
- Ideal for direct mounting in PC boards

Description

Each device in this series consists of a high reliability NPN silicon phototransistor mounted in a miniature glass lensed, hermetically sealed, "Pill" package.

After electrical testing by manufacturing, all devices are processed to Optek's 100% screening program patterned after MIL-PRF-19500. Typical screening and lot acceptance tests are provided on page 13-4.

This device type is lensed and has an acceptance half angle of 18° measured from the optical axis to the half power point. The series is also mechanically and spectrally matched to the OP223 and OP224 high reliability series of infrared emitting diodes.

Absolute Maximum Ratings (T_A = 25° C unless otherwise noted)

Storage Temperature Range	-65° C to +150° C
Operating Temperature Range	-55° C to +125° C
Collector-Emitter Voltage	50 V
Emitter-Collector Voltage	7.0 V
Soldering Temperature (for 5 seconds with soldering iron)	240° C(1)
Power Dissipation	50 mW(2)

Notes:
(1) No-clean or low solids, RMA flux is recommended. Duration can be extended to 10 sec. max. when wave soldering.
(2) Derate linearly 0.5 mW/° C above 25° C.
(3) Junction temperature maintained at 25° C.
(4) Light source is an unfiltered tungsten lamp operating at CT = 2870 K or equivalent source.

Types OP602TX/V, OP603TX/V, OP604TX/V, OP604S

Electrical Characteristics ($T_A = 25^o$ C unless otherwise noted)

Symbol	Parameter	Min	Typ	Max	Units	Test Conditions
$I_{C(on)}$	On-State Collector Current OP602TX,TXV OP603TX,TXV OP604TX,TXV, S	 2.0 4.0 7.0		 5.0 8.0	 mA mA mA	 V_{CE} = 5.0 V, E_e = 20 mW/cm$^{2(3)(4)}$ V_{CE} = 5.0 V, E_e = 20 mW/cm$^{2(3)(4)}$ V_{CE} = 5.0 V, E_e = 20 mW/cm$^{2(3)(4)}$
I_{CEO}	Collector Dark Current			25 100	nA µA	V_{CE} = 10.0 V, E_e = 0 V_{CE} = 30.0 V, E_e = 0, $T_A = 100^o$ C
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	50			V	I_C = 100 µA, E_e = 0
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage	7.0			V	I_E = 100 µA, E_e = 0
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage			0.40	V	I_C = 0.4 mA, E_e = 20 mW/cm$^{2(3)(4)}$
t_r	Rise Time			20.0	µs	V_{CC} = 30 V, I_C = 1.00 mA, R_L = 100 Ω
t_f	Fall Time			20.0	µs	

Optek Technology, Inc. 1215 W. Crosby Road Carrollton, Texas 75006 (972)323-2200 Fax (972)323-2396