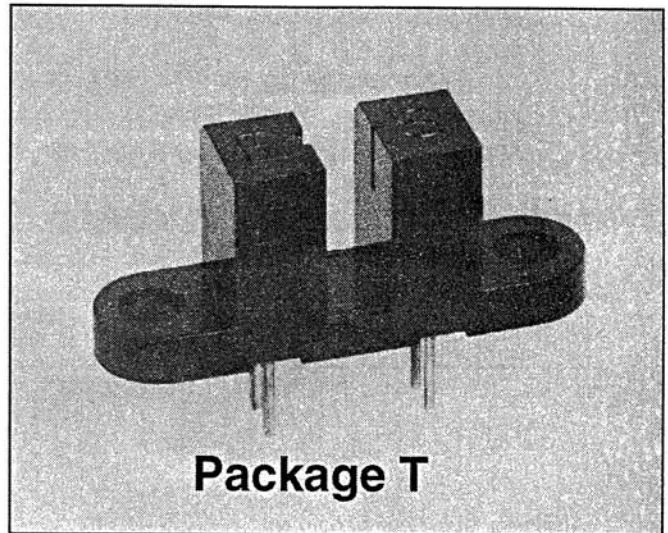
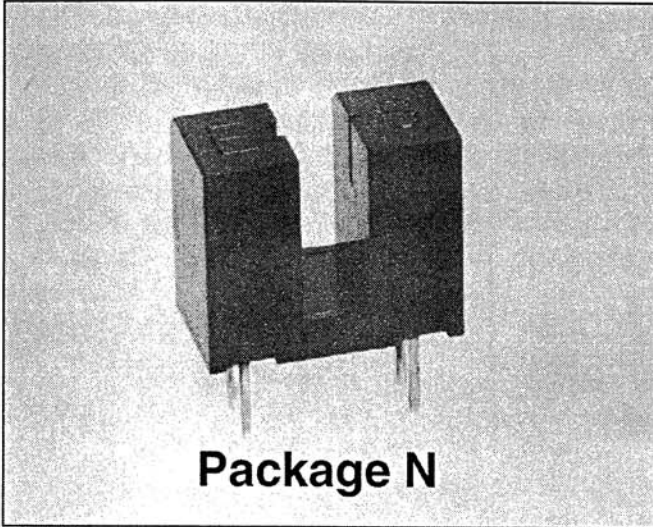


Slotted Optical Switch

Types OPB660N, OPB660T



Features

- Non-contact switching
- 0.125" (3.18 mm) Wide gap
- 0.320" (8.13 mm) Lead spacing
- N or T package
- Printed circuit board mounting
- Enhanced signal to noise ratio

Description

The OPB660 series consists of an NPN phototransistor and an infrared emitting diode mounted on opposite sides of a 0.125" (3.18 mm) wide slot. The emitter has a 0.050" x 0.060" molded aperture while the phototransistor has a 0.010" x 0.060" molded aperture. The phototransistor has an enhanced low current roll-off which improves contrast ratio and immunity to background irradiance.

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

Storage and Operating Temperature -40°C to $+100^\circ\text{C}$
 Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 sec with soldering iron] $260^\circ\text{C}^{(1)}$

Input Diode

Forward DC Current 50 mA
 Peak Forward Current (1 μs pulse width, 300 pps) 3.0 A
 Reverse DC Voltage 3.0 V
 Power Dissipation 100 mW⁽²⁾

Output Phototransistor

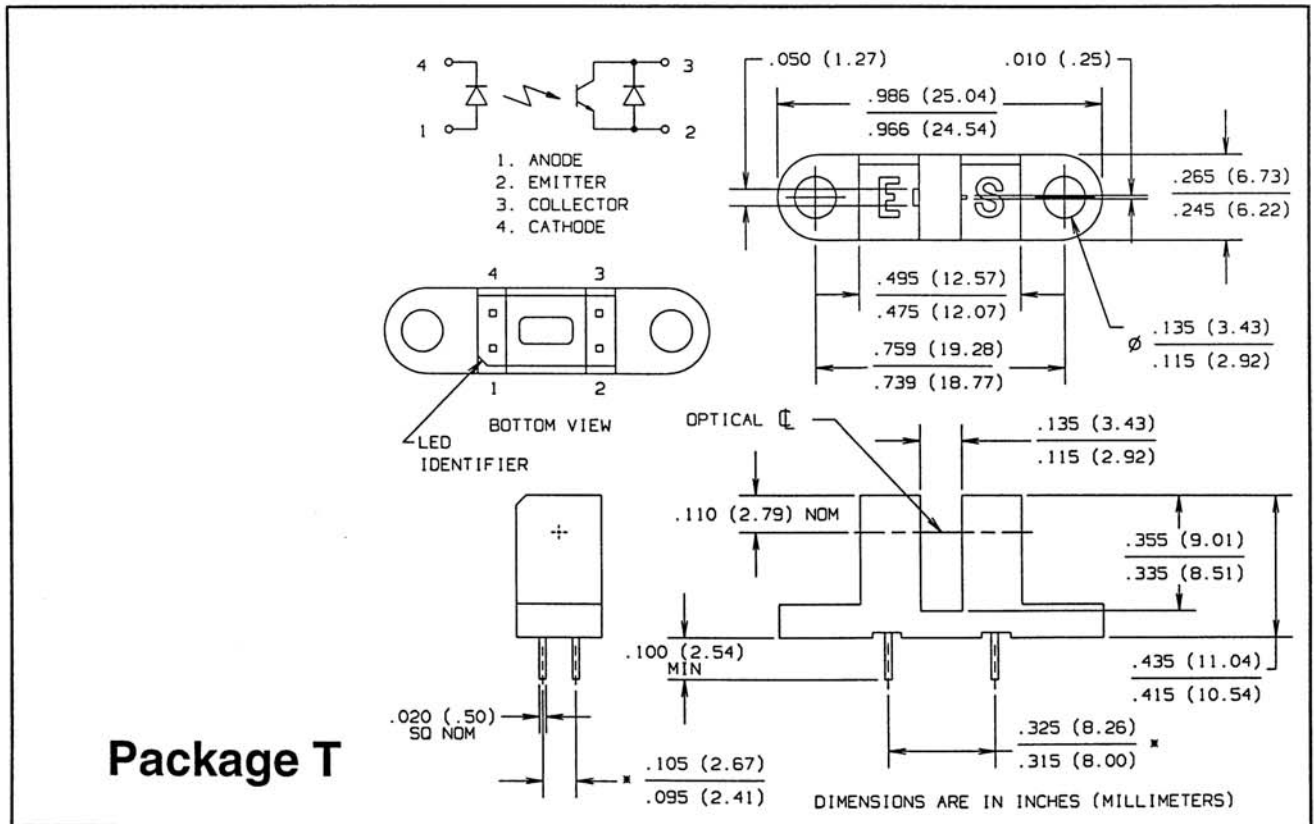
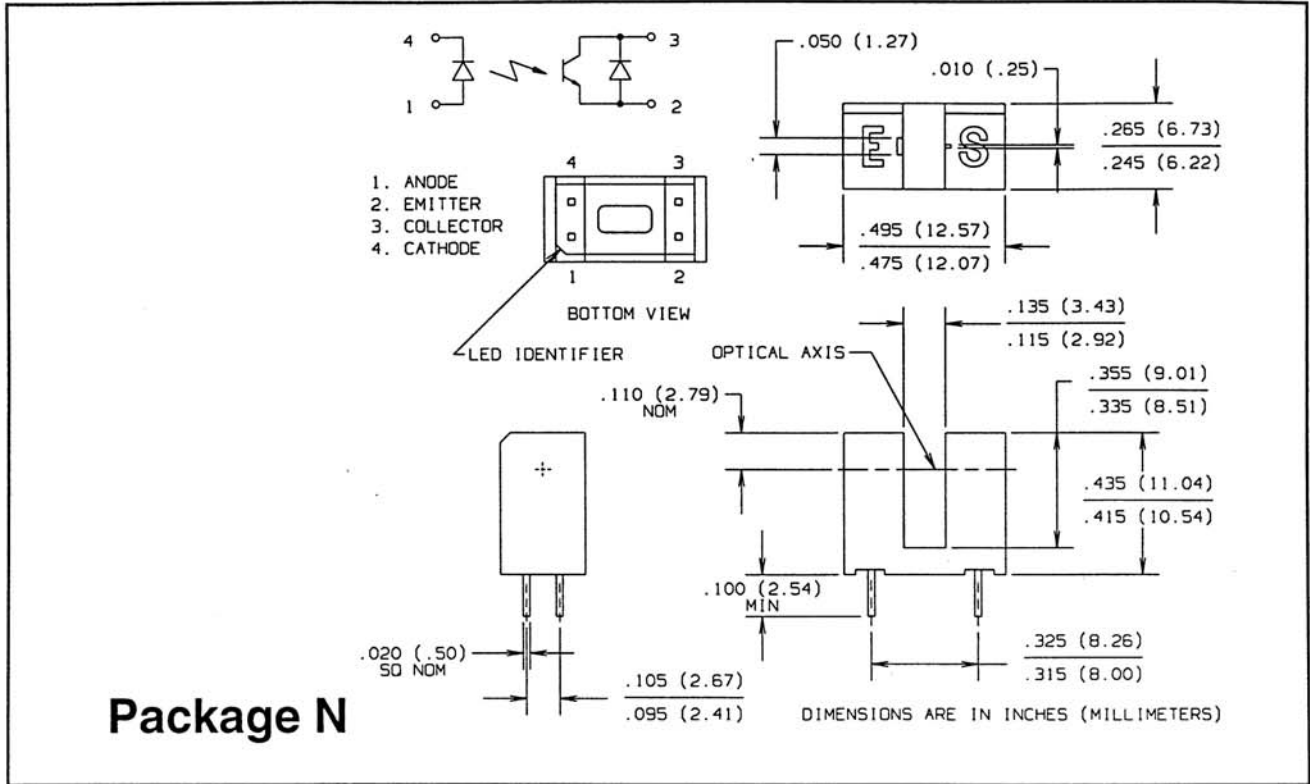
Collector-Emitter Voltage 30 V
 Emitter Reverse Current 10 mA
 Collector DC Current 30 mA
 Power Dissipation 200 mW⁽³⁾

Notes:

- (1) RMA flux is recommended. Duration can be extended to 10 sec. max. when flow soldering. Max. 20 grams force may be applied to leads when soldering.
- (2) Derate linearly $1.33\text{ mW}^\circ\text{C}$ above 25°C .
- (3) Derate linearly $2.0\text{ mW}^\circ\text{C}$ above 25°C .

Types OPB660N, OPB660T

SLOTTED OPTICAL SWITCHES



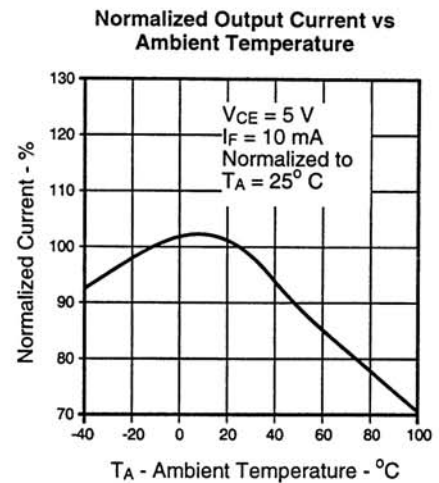
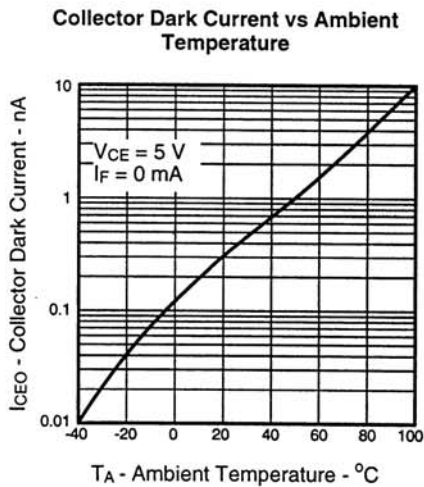
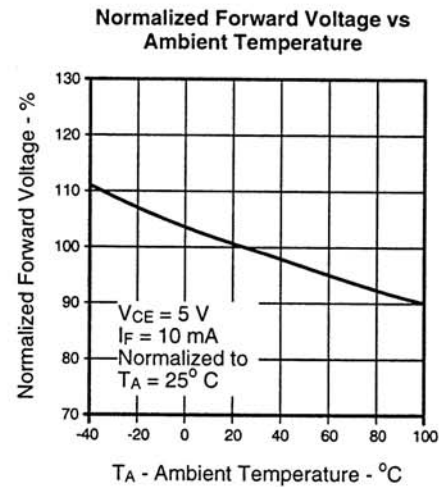
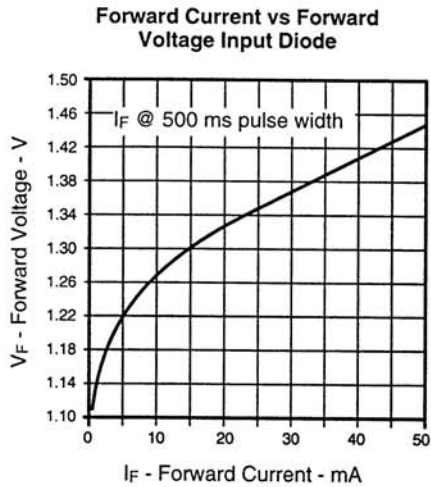
Types OPB660N, OPB660T



Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

SYMBOL	PARAMETER	MIN	MAX	UNITS	TEST CONDITIONS
Input Diode					
V_F	Forward Voltage		1.60	V	$I_F = 10\text{ mA}$
I_R	Reverse Current		100	μA	$V_R = 3.0\text{ V}$
Output Phototransistor					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	30		V	$I_C = 100\ \mu\text{A}$
BV_{ECO}	Emitter Reverse Breakdown Voltage	4.0		V	$I_{EC} = 100\ \mu\text{A}$
I_{CEO}	Collector-Emitter Dark Current		100	nA	$V_{CE} = 5\text{ V}$
Coupled					
V_{SAT}	Saturation Voltage		0.40	V	$I_F = 10\text{ mA}$, $I_C = 100\ \mu\text{A}$, Gap unblocked
$I_{C(ON)}$	On-State Collector Current	600		μA	$I_F = 10\text{ mA}$, $V_{CE} = 5\text{ V}$

Typical Performance Curves

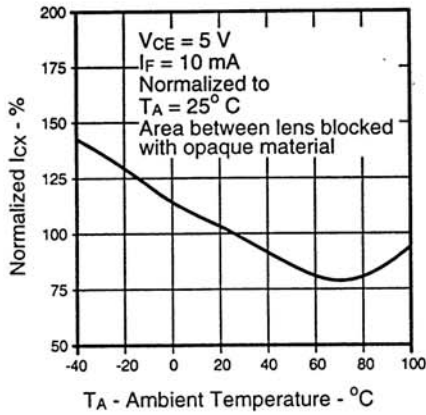


Types OPB660N, OPB660T

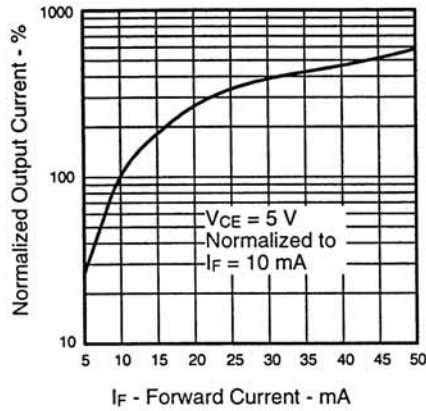
Typical Performance Curves

SLOTTED
OPTICAL
SWITCHES

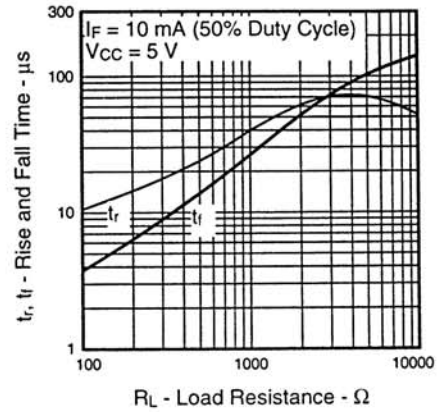
Normalized I_{CX} vs Ambient Temperature



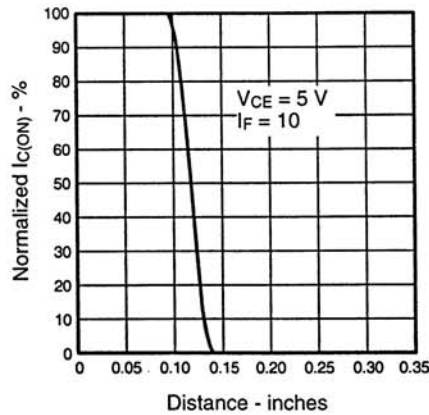
Normalized Output Current vs Forward Current



Rise and Fall Time vs Load Resistance



Normalized $I_{C(ON)}$ vs Distance (Y Axis Blocked)



Normalized $I_{C(ON)}$ vs Distance (X Axis Blocked)

