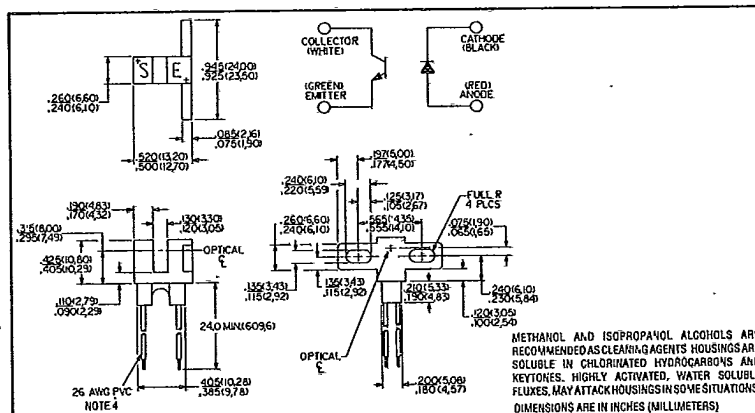
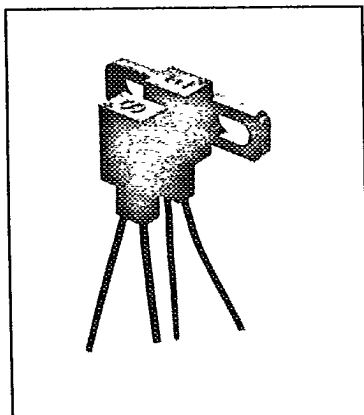


Slotted Optical Switches

Types OPB830W, OPB840W Series

T-41-73



Features

- 0.125" wide slot
- Choice of aperture
- Choice of opaque or IR transmissive shell material
- Side mount configuration
- .24", 26AWG wire leads

Description

The following series of slotted switches provides the design engineer with the flexibility of a custom device from a standard product line. Building from a standard housing utilizing a .125" wide slot, the user can specify (1) Electrical output parameters, (2) discrete shell material and (3) aperture width.

All housings are an opaque grade of injection-molded polysulfone (P1700-935) to minimize the assembly's sensitivity to ambient radiation, both visible and near-infrared. Discrete shells (exposed only on the parallel faces inside the device throat) are either IR transmissive polysulfone (P1700-1615) for applications where aperture contamination may occur, or opaque polysulfone (P1700-935) with aperture openings, where maximum protection against ambient radiation is a concern.

Replaces

KT830W/KT840W Series

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

Storage and Operating Temperature Range -40°C to +80°C⁽¹⁾
Lead Soldering Temperature [1/16 inch (1.6mm) from case for 5 sec. with soldering iron] 240°C⁽²⁾

Input Diode

Forward DC Current 50mA
Peak Forward Current (1 μ s pulse width, 300 pps) 3.0A
Reverse DC Voltage 2.0V
Power Dissipation 100mW⁽¹⁾

Output Phototransistor

Collector-Emitter Voltage 30V
Emitter-Collector Voltage 5.0V
Collector DC Current 30mA
Power Dissipation 100mW⁽¹⁾

Notes:

- (1) Derate linearly 1.82mW/°C above 25°C. (Maximum storage and operating temperature, limited by the temperature rating of the lead wires)
- (2) RMA flux is recommended. Duration can be extended to 10 sec. max. when flow soldering.
- (3) All parameters tested using pulse technique.
- (4) The OPB830W/OPB840W wire terminations are 24" of 7 strand, 26 AWG, UL 1429 insulated wire on each terminal. The devices incorporate a wire strain relief at the housing surface. The insulation colors and functions are:

Red - RED Anode White - Phototransistor Collector
Black - Ired Cathode Green - Phototransistor Emitter

Other wire and/or colors are available. Contact your local representative or call the factory.

Types OPB830W, OPB840W Series

T-41-73

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

SYMBOL	PARAMETER	MIN	MAX	UNITS	TEST CONDITIONS
Input Diode					
V_F	Forward Voltage		1.7	V	$I_F = 20\text{mA}$
I_R	Reverse Current		100	μA	$V_R = 2.0\text{V}$
Output Phototransistor					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	30		V	$I_C = 1.0\text{mA}$
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage	5		V	$I_E = 100\mu\text{A}$
I_{CEO}	Collector-Emitter Dark Current		100	nA	$V_{CE} = 10\text{V}$
Coupled					
$V_{CE(SAT)}$	Saturation Voltage:				
	Parameter A OPB830W / OPB840W		0.4	V	$I_C = 400\mu\text{A}, I_F = 20\text{mA}$
	Parameter B OPB831W / OPB841W		0.4	V	$I_C = 800\mu\text{A}, I_F = 10\text{mA}$
	Parameter C OPB832W / OPB842W		0.6	V	$I_C = 1800\mu\text{A}, I_F = 20\text{mA}$
$I_{C(ON)}$	On-State Collector Current:				
	Parameter A OPB830W / OPB840W	500		μA	$V_{CE} = 10\text{V}, I_F = 20\text{mA}$
	Parameter B OPB831W / OPB841W	1000		μA	$V_{CE} = 5\text{V}, I_F = 10\text{mA}$
	Parameter C OPB832W / OPB842W	1800		μA	$V_{CE} = 0.6\text{V}, I_F = 20\text{mA}$

SLOTTED
OPTICAL
SWITCHES

Optek reserves the right to make changes at any time in order to improve design and to supply the best product possible.

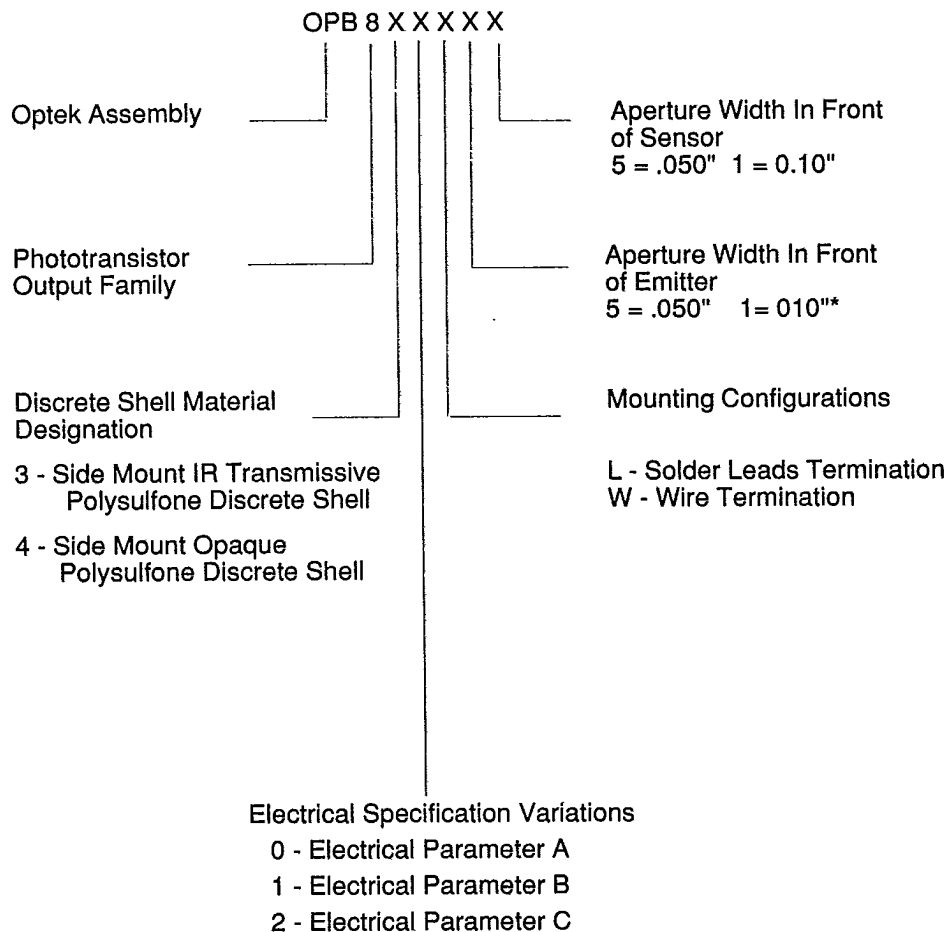
Optek Technology, Inc., 1215 West Crosby Road, Carrollton, Texas 75006 (214) 323-2200 TLX 215849 Fax (214) 323-2396
Printed in USA

Types OPB830W, OPB840W Series



T-41-73

PART NUMBER GUIDE

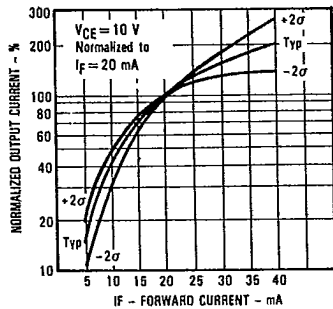
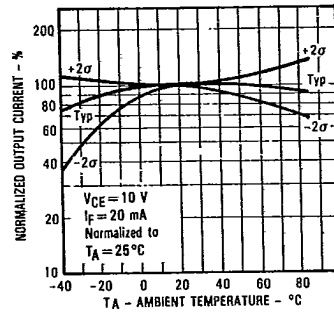
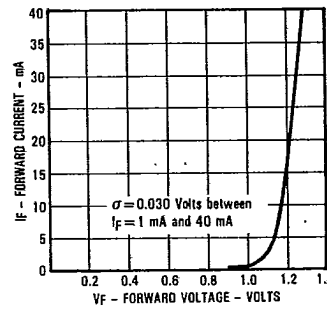
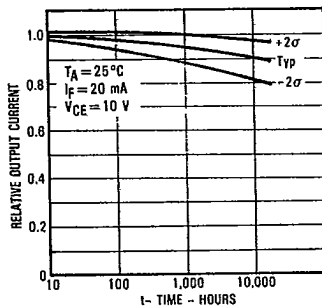
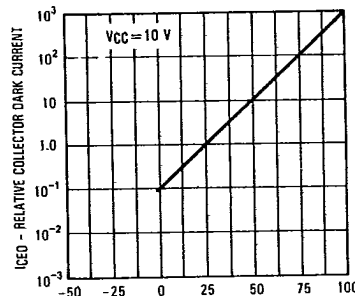
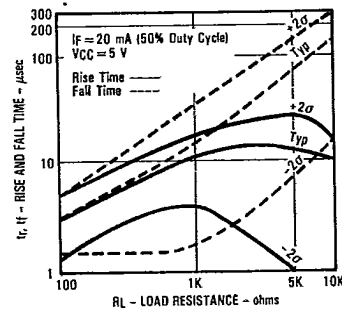


*Assemblies with dual .010" apertures are currently available with electrical parameter "A" only.

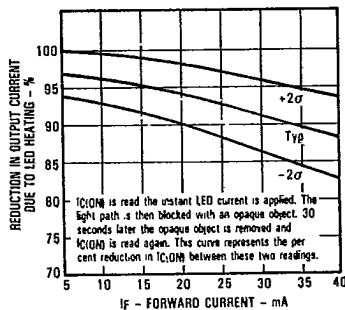
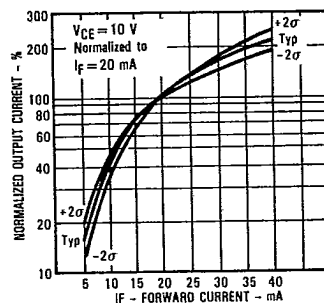
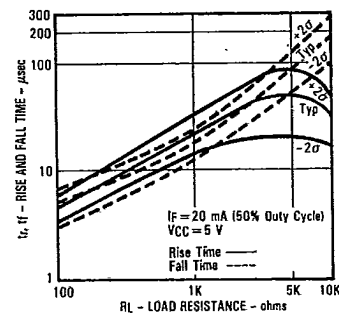
Types OPB830W, OPB840W Series

T-41-73

Typical Performance Curves

Normalized Output Current
vs Forward CurrentNormalized Output Current
vs Ambient TemperatureForward Current
vs Forward Voltage Input DiodeSLOTTED
OPTICAL
SWITCHESRelative Output Current
vs TimeCollector Dark Current
vs Ambient TemperatureRise and Fall Time
vs Load Resistance

All Part Numbers Ending in "1"

Reduction in Output Current Due to
LED Heating vs Forward CurrentNormalized Output Current
vs Input CurrentRise and Fall Time
vs Load Resistance

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