Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

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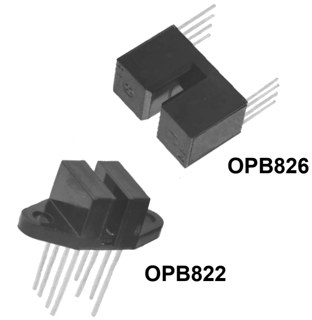
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

Dual Channel Encoder

OPB822S, OPB822SD
OPB826S, OPB826SD



Features:

- Non-contact switching
- Single or double apertures for high resolution
- Choice of slot widths
- Choice of side-by-side or over/under dual channels
- Choice of electrical outputs

Description:

Each **OPB822** and **OPB826** slotted switch consists of two infrared emitting diodes and two NPN silicon phototransistors mounted on opposite sides of a 0.090” (2.29 mm) wide slot **(OPB822)** or a 0.100” (2.54 mm) wide slot **(OPB826)**.

OPB822 uses an side-by-side mounting configuration, while **OPB826** uses an over/under mounting configuration. **OPB822S** has 0.01” by 0.04” (0.25 mm x 1.02 mm) apertures in front of both phototransistors while the **OPB822SD** has the aperture in front of both phototransistors and both emitters. The **OPB826S** has 0.04” by 0.04” (1.02 mm x 1.02 mm) apertures in front of both phototransistors while the **OPB826SD** has the aperture in front of both phototransistors and both emitters.

Dual channels enable direction of travel sensing, with the low-cost plastic housing reduces possible interference from ambient light and provides protection from dust and dirt.

Phototransistor switching occurs when an opaque object passes through the device slot.

For information on encoder design, see Application Bulletin 203 at:

Custom electrical, wire and cabling and connectors are available. Contact your local representative or OPTEK for more information.

Applications:

- Encoders
- Non-contact object sensing
- Assembly line automation
- Machine automation
- Equipment security
- Machine safety

Part Number	LED Peak Wavelength	Sensor	Slot Width / Depth	Aperture Emitter/ Sensor	Lead Length / Spacing
OPB822S	**Dual 935 nm**	**Dual Transistor**	**0.09" / 0.30”**	**None / 0.01"**	**0.35" / 0.30"**
OPB822SD				**0.01" / 0.01"**	
OPB826S	**Dual 890 nm**	**Dual Transistor**	**0.10" / 0.42”**	**NA / 0.04"**	**0.20" / 0.74"**
OPB826SD				**0.04" / 0.04"**	

RoHS

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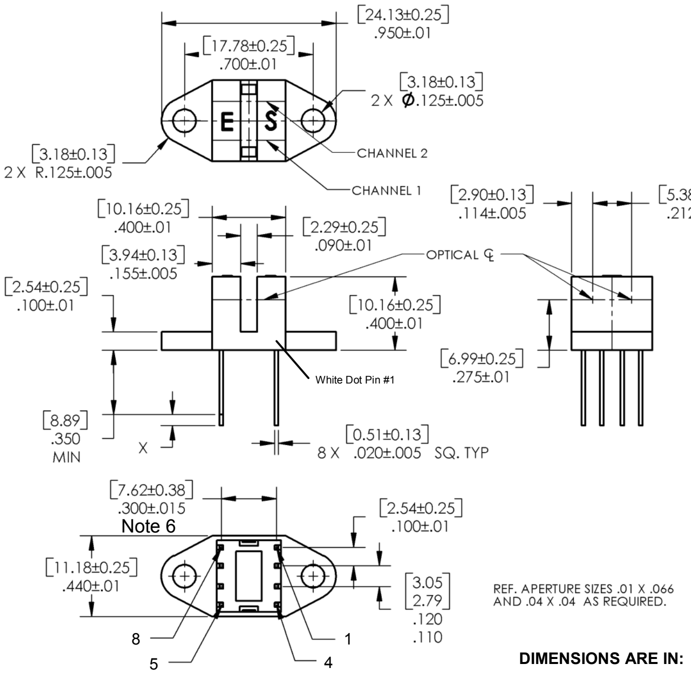
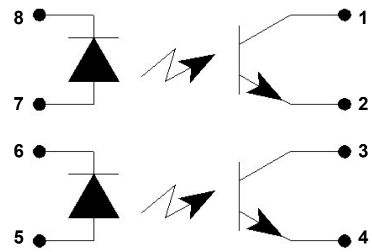
OPB822



DIMENSIONS ARE IN: [MILLIMETERS] INCHES

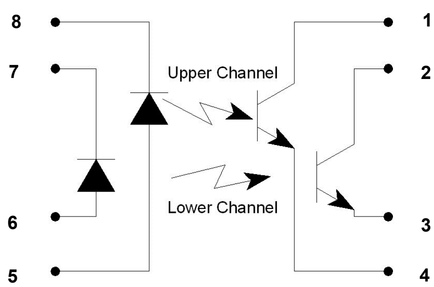
Bottom View



Pin #	Description	Pin #	Description
8	Cathode-1	1	Collector-1
7	Anode-1	2	Emitter-1
6	Cathode-2	3	Collector-2
5	Anode-2	4	Emitter-2

OPB826

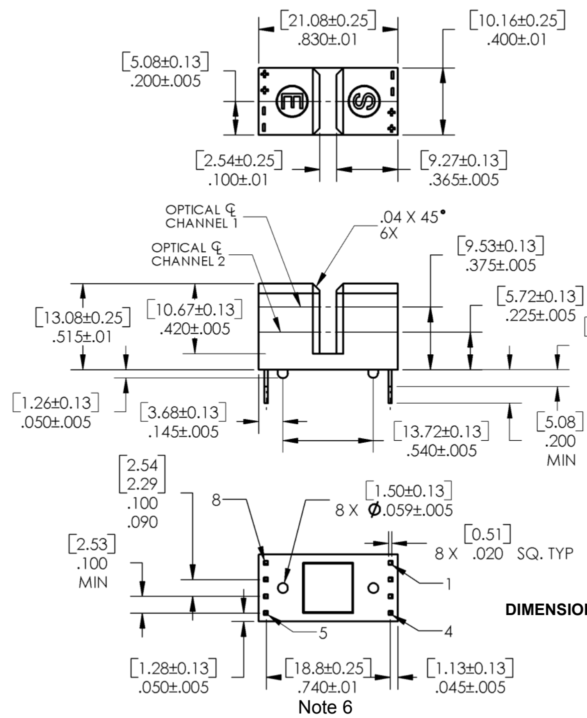
Bottom View



Pin #	Description	Pin #	Description
8	Cathode-1	1	Collector-1
7	Cathode-2	2	Collector-2
6	Anode-2	3	Emitter-2
5	Anode-1	4	Emitter-1

CONTAINS POLYSULFONE

To avoid stress cracking, we suggest using ND Industries' **Vibra-Tite** for thread-locking. **Vibra-Tite** evaporates fast without causing structural failure in OPTEK's molded plastics.



DIMENSIONS ARE IN: [MILLIMETERS] INCHES

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

Storage & Operating Temperature Range	-40° C to +85° C
Lead Soldering Temperature [1/16 inch (1.6mm) from the case for 5 sec. with soldering iron](1)	240°C

Input Diode

Forward DC Current OPB822S, OPB822SD OPB826S, OPB826SD	 50 mA 40 mA
Peak Forward Current (1 µs pulse width, 300 pps)	1 A
Reverse DC Voltage	2 V
Power Dissipation(2)	100 mW

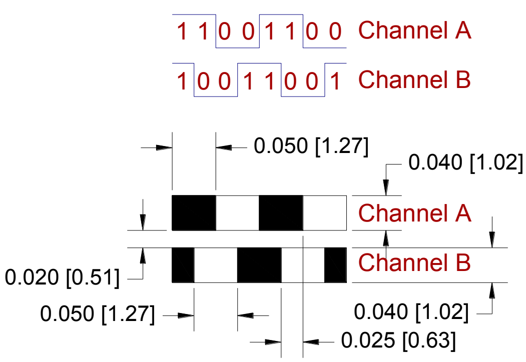
Output Phototransistor

Collector-Emitter Voltage	30 V
Emitter-Collector Voltage	5 V
Collector DC Current	30 mA
Power Dissipation(2)	100 mW

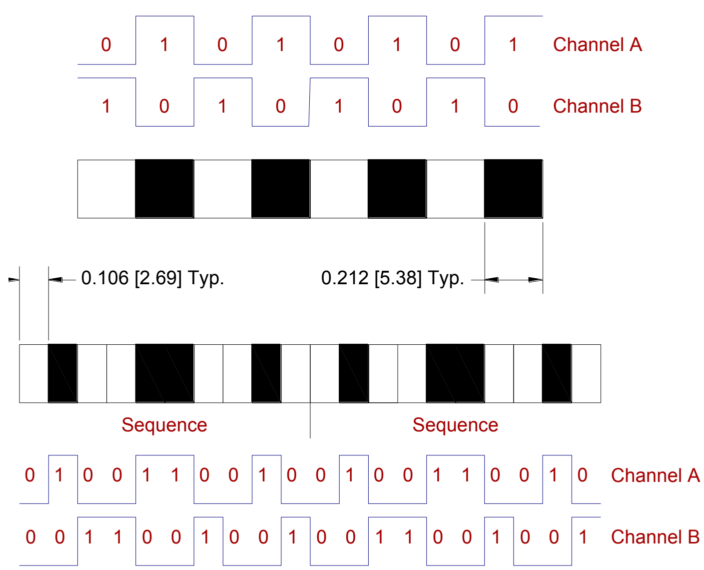
Notes:

(1) RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering.
(2) Derate linearly 1.67 mW/°C above 25° C.
(3) Methanol or isopropanol are recommended as cleaning agents. Plastic housing is soluble in chlorinated hydrocarbons and ketones. Spray and wipe; do not submerge.
(4) Derate linearly 3.33 mW/°C above 25° C.
(5) All parameters tested using pulse techniques.
(6) Feature controlled at body.

Encoder Sequence for OPB826



Encoder Sequence for OPB822



For information on encoder design,
see Application Bulletin 203 at:
http://www.optekinc.com/pdf/App_Note_203.pdf

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Electrical Characteristics (OPB822, OPB826) (T_A = 25°C unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Input Diode (see OP140 for OPB822 or OP266 for OPB826 for additional information)						
V_F	Forward Voltage	-	-	1.7	V	I_F = 20 mA
I_R	Reverse Current	-	-	100	µA	V_R = 2 V
Output Phototransistor (see OP550 for OPB822 or OP506 for OPB826 for additional information)						
$V_{(BR)(CEO)}$	Collector-Emitter Breakdown Voltage	30	-	-	V	I_C = 1 mA
$V_{(BR)(ECO)}$	Emitter-Collector Breakdown Voltage	5	-	-	V	I_E = 100 µA
I_{CEO}	Collector-Emitter Leakage Current	-	-	100	nA	V_{CE} = 10 V, I_F = 0, E_E = 0
Coupled						
$I_{C(ON)}$	On-State Collector Current OPB822S OPB822SD OPB826S OPB826SD	 250 100 250 100	 - - - -	 - - - -	 µA µA µA µA	 V_{CE} = 5 V, I_F = 20 mA V_{CE} = 5 V, I_F = 20 mA V_{CE} = 10 V, I_F = 20 mA V_{CE} = 10 V, I_F = 20 mA
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage OPB822S OPB822SD OPB826S OPB826SD	 - - - -	 - - - -	 0.4 0.4 0.4 0.4	 V V V V	 I_C = 125 µA, I_F = 20 mA I_C = 50 µA, I_F = 20 mA I_C = 125 µA, I_F = 20 mA I_C = 50 µA, I_F = 20 mA
I_{CX1}	Crosstalk OPB822D, OPB822SD OPB826S OPB826SD	 - - -	 - - -	 250 20 10	µA	I_{F1} = 0 mA, I_{F2} = 20 mA, V_{CE} = 10 V

Notes:
(1) All parameters tested using pulse techniques.

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