

Each OPB825, OPB825A and OPB825B consists of an infrared emitting diode and a NPN silicon phototransistor mounted in a low-cost black plastic housing on opposite sides of a 0.160 " ( 4.064 mm ) wide slot.

OPB825 has no mounting tabs and is intended for direct insertion into PCBoards or dual-in-line sockets. OPB825A has one mounting tab on the phototransistor side, while OPB825B has mounting tabs on both sides (two tabs).

Phototransistor switching takes place whenever an opaque object passes through the slot.
Custom electrical, wire and cabling and connectors are available. Contact your local representative or OPTEK for more information.

## Applications:

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

| Ordering Information |  |
| :---: | :---: |
| Part Number | Description |
| OPB825 | Slotted Switch (no tabs) |
| OPB825A | Slotted Switch (one tab) |
| OPB825B | Slotted Switch (two tabs) |


| Pin \# | Description | Pin \# | Description |
| :---: | :---: | :---: | :---: |
| 1 | Anode | 3 | Collector |
| 2 | Cathode | 4 | Emitter |



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

## Absolute Maximum Ratings ( $T_{A}=25^{\circ} \mathrm{C}$ unless otherwise noted)

| Storage \& Operating Temperature Range | $-40^{\circ} \mathrm{C}$ to $+85^{\circ} \mathrm{C}$ |
| :--- | ---: |
| Lead Soldering Temperature [1/16 inch (1.6mm) from the case for 5 sec. with soldering iron] ${ }^{(1)}$ | $260^{\circ} \mathrm{C}$ | Input Diode


| Forward DC Current | 50 mA |
| :--- | ---: |
| Peak Forward Current $(1 \mu \mathrm{~s}$ pulse width, 300 pps$)$ | 3 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 |

Electrical Characteristics ( $\mathrm{T}_{\mathrm{A}}=25^{\circ} \mathrm{C}$ unless otherwise noted)

| SYMBOL | PARAMETER | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |

Input Diode (See OP240 for additional information)

| $\mathrm{V}_{\mathrm{F}}$ | Forward Voltage | - | - | 1.6 | V | $\mathrm{I}_{\mathrm{F}}=20 \mathrm{~mA}$ |
| :--- | :--- | :---: | :---: | :---: | :---: | :---: |
| $\mathrm{I}_{\mathrm{R}}$ | Reverse Current | - | - | 100 | $\mu \mathrm{~A}$ | $\mathrm{~V}_{\mathrm{R}}=2 \mathrm{~V}$ |

Output Phototransistor (See OP550 for additional information)

| $\mathrm{V}_{\text {(BR)CEO }}$ | Collector-Emitter Breakdown Voltage | 30 | - | - | V | $\mathrm{I}_{\mathrm{C}}=1 \mathrm{~mA}$ |
| :---: | :--- | :---: | :---: | :---: | :---: | :---: |
| $\mathrm{~V}_{\text {(BR)ECO }}$ | Emitter-Collector Breakdown Voltage | 5 | - | - | V | $\mathrm{I}_{\mathrm{E}}=100 \mu \mathrm{~A}$ |
| $\mathrm{I}_{\mathrm{CEO}}$ | Collector Dark Current | - | - | 100 | nA | $\mathrm{V}_{\mathrm{CE}}=10 \mathrm{~V}, \mathrm{I}_{\mathrm{F}}=0, \mathrm{E}_{\mathrm{E}}=0$ |

Combined

| $\mathrm{V}_{\mathrm{CE}(\mathrm{SAT})}$ | Collector-Emitter Saturation | - | - | 0.4 | V | $\mathrm{I}_{\mathrm{C}}=250 \mu \mathrm{~A}, \mathrm{I}_{\mathrm{F}}=20 \mathrm{~mA}$ |
| :---: | :--- | :---: | :---: | :---: | :---: | :--- |
| $\mathrm{I}_{\mathrm{C}(\mathrm{ON})}$ | On-State Collector Current | 1.0 | - | 45.0 | mA | $\mathrm{I}_{\mathrm{F}}=20 \mathrm{~mA}, \mathrm{~V}_{\mathrm{CE}}=10 \mathrm{~V}$ |

Notes:
(1) RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering.
(2) Derate linearly $1.67 \mathrm{~mW} /{ }^{\circ} \mathrm{C}$ above $25^{\circ} \mathrm{C}$.
(3) All parameters tested using pulse techniques.
(4) Methanol or isopropanol are recommended as cleaning agents. Plastic housing is soluble in chlorinated hydrocarbons and ketones.


