Series GB

Ultra-Miniature Fully Illuminated Plungers

General Specifications

Electrical Capacity (Resistive Load)

Logic Level: 0.4VA maximum @ 28V AC/DC maximum
(Applicable Range 0.1mA ~ 0.1A @ 20mV ~ 28V)
Note: Find additional explanation of operating range in Supplement section.

Other Ratings

Contact Resistance: 80 milliohms maximum
Insulation Resistance: 500 megohms minimum @ 500V DC
Dielectric Strength: 500V AC minimum for 1 minute minimum
Mechanical Life: 50,000 operations minimum
Electrical Life: 50,000 operations minimum
Nominal Operating Force: 1.70N
Travel: Pretravel .035” (0.9mm); Overtravel .008” (0.2mm); Total Travel .043” (1.1mm)

Materials & Finishes

Plunger: Polyamide
Case: Glass fiber reinforced polyamide
Sealing Rings: Nitrile butadiene rubber
Movable Contact: Phosphor bronze with gold plating
Stationary Contacts: Phosphor bronze with gold plating
Base: Glass fiber reinforced polyamide
Switch Terminals: Phosphor bronze with gold plating
Lamp Terminals: Phosphor bronze with gold plating

Environmental Data

Operating Temperature Range: –25°C through +55°C (–13°F through +131°F)
Humidity: 90 ~ 95% humidity for 240 hours @ 40°C (104°F)
Vibration: 10 ~ 500Hz with peak-to-peak amplitude of 1.5mm traversing the frequency range & returning in 15 minutes; 3 right angled directions for 2 hours
Shock: 50G (490m/s²) acceleration (tested in 6 right angled directions, with 5 shocks in each direction)

PCB Processing

Soldering: Wave Soldering recommended. See Profile A in Supplement section.
Manual Soldering: See Profile A in Supplement section.
Cleaning: Automated alcohol based cleaning recommended, 5 minutes maximum. Do not use high-purity alcohol (50% alcohol or more) or organic solvent. High alcohol solution can damage clear plastic. See Cleaning specifications in Supplement section.

Standards & Certifications

The GB Series illuminated pushbuttons have not been tested for UL recognition or CSA certification. These switches are designed for use in a low-voltage, low-current, logic-level circuit. When used as intended in a logic-level circuit, the results do not produce hazardous energy.
Distinctive Characteristics

Fully illuminated plunger for highly visible status indication with single color LED in red, green, or amber.

Ultra-miniature size allows high density mounting, and extremely light weight makes these switches ideal for handheld equipment.

Totally sealed body construction prevents contact contamination and allows time- and money-saving automated soldering and cleaning. Insert-molded terminals lock out flux, solvents, and other contaminants.

Award-winning STC contact mechanism with benefits unavailable in conventional mechanisms: smooth, positive detent actuation, increased contact stability, and unparalleled logic-level reliability. (Additional STC details in Terms & Acronyms; see Supplement section.)

.100” x .100” (2.54mm x 2.54mm) terminal spacing conforms to standard PC board grid spacing. Round terminals facilitate easier through-hole mounting on PC boards.

Nonilluminated pushbuttons available and shown in the Pushbutton section.
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TYPICAL SWITCH ORDERING EXAMPLE

GB 1 5 J H F

Pole  Circuit  Actuator  PC Terminals  LEDs
1  SPDT  5  ON  (ON)  J  Clear  P  Straight  C  Red

DESCRIPTION FOR TYPICAL ORDERING EXAMPLE
GB15JHF

POLE & CIRCUIT

<table>
<thead>
<tr>
<th>Pole</th>
<th>Model</th>
<th>Connected Terminals</th>
<th>Throw &amp; Switch/Lamp Schematics</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP</td>
<td>GB15</td>
<td>5-6 5-4</td>
<td>Note: Terminal numbers are not actually on the switch. LED circuit is isolated and requires an external power source.</td>
</tr>
</tbody>
</table>

ACTUATOR

J Clear Plunger

LED COLORS & SPECIFICATIONS

LEDs are an integral part of the switch and not available separately. The electrical specifications shown are determined at a basic temperature of 25°C. If the source voltage exceeds the rated voltage, a ballast resistor is required. The resistor value can be calculated by using the formula in the Supplement section.

<table>
<thead>
<tr>
<th>Colors</th>
<th>C</th>
<th>Red</th>
<th>D</th>
<th>Amber</th>
<th>F</th>
<th>Green</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Forward Current</td>
<td>$I_{FM}$</td>
<td>30mA</td>
<td>30mA</td>
<td>30mA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Typical Forward Current</td>
<td>$I_{T}$</td>
<td>20mA</td>
<td>20mA</td>
<td>20mA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forward Voltage</td>
<td>$V_f$</td>
<td>1.95V</td>
<td>2.0V</td>
<td>2.1V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum Reverse Voltage</td>
<td>$V_{RM}$</td>
<td>5V</td>
<td>5V</td>
<td>5V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Reduction Rate Above 25°C</td>
<td>$\Delta I_f$</td>
<td>0.40mA/°C</td>
<td>0.40mA/°C</td>
<td>0.40mA/°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient Temperature Range</td>
<td>-25°C ~ +55°C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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Series GB

PC TERMINALS

P  Straight

H  Right Angle

V  Vertical

TYPICAL SWITCH DIMENSIONS

Straight PC

Terminals 1 & 3 are lamp terminals.

GB15JPD

Right Angle PC

Terminals 1 & 3 are lamp terminals.

GB15JHF

Vertical PC

Terminals 1 & 3 are lamp terminals.

GB15JVC