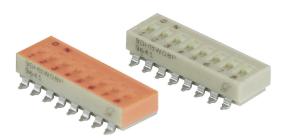




# **SERIES 90HB** SPST, Low Profile

## **FEATURES**

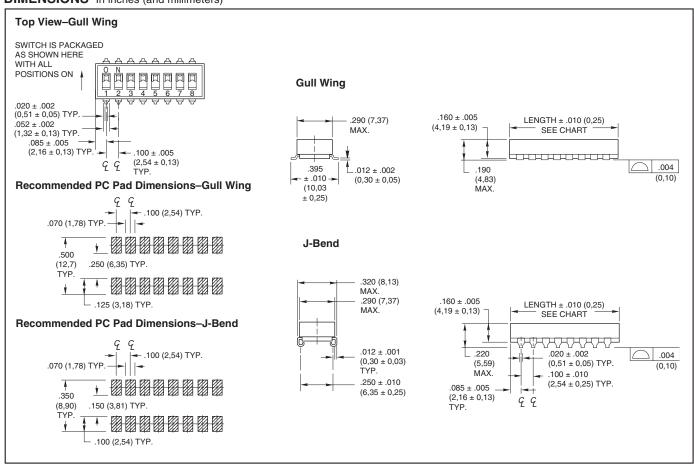
- Compatible with SMT Assembly, Including Infrared Reflow and Vapor-Phase
- Top Seal Withstands High Pressure Aqueous Cleaning
- Reliable Spring and Ball Contact



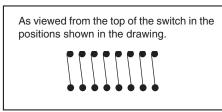




## **DIMENSIONS** In inches (and millimeters)



### **CIRCUITRY**





## **SPECIFICATIONS**

## **Electrical Ratings**

**Make-and-break Current Rating:** 2,000 operations per switch position at these resistive loads:10 mA, 30 Vdc; or 10 mA, 50 mVdc; 10 mA, 50 mVdc; or 25 mA, 24 Vdc; or 100 mA,6 Vdc.

Contact Resistance: (measured at 10 mA, 50 mVdc). Initial: 20 mohms maximum, After Life: 100 mohms maximum

**Insulation Resistance:** Minimum, at 100 Vdc between adjacent closed contacts and also across open switch contacts.

Initial (Mohms): 5,000, After Life (Mohms): 1,000 Dielectric Strength: Minimum voltage (AC RMS) measured between adjacent closed contacts and also across open switch contacts. Initial: 500 volts, After Life: 500 volts

Current Carry Rating: 3A maximum rise of 20°C

Switch Capacitance: 2 pF at 1 megahertz

#### **Mechanical Ratings**

Where Grayhill performance is superior, the MIL spec is listed in parentheses.

**Mechanical Life:** 2,000 operations per switch position

Vibration Resistance: Per Method 204, Test Condition B, 1mS opening (10 mS allowed)

Mechanical Shock: Per Method 213, Test Condition A. 1mS opening (10 mS allowed)

Thermal Shock Resistance: Per specification; no failures; passes contact resistance.

**Terminal Strength:** Per specification **Thermal Aging:** 1,000 hours at 85°C; no failures.

#### **Environmental Ratings**

Meets all requirements of MIL- S-83504. Operating Temperature Range: -40 $^{\circ}$ C to +

85°C Storage Temperature Range: -40°C to + 85°C

Moisture Resistance: Per MIL-STD-202, Method 106.

#### **Soldering Information**

Solderability: Per MIL-STD-202, Method 208 Soldering Heat Resistance: Per MIL-S-83504, six second test.

Recommended Processing Temperature: 220°C-230°C (1 pass—260°C maximum)

**Processing Position:** Switch is to be processed with all actuators in the closed (on) position as shipped.

**Fluxing:** Per EIA RS-448-2 with flux touching switch body.

Cleaning: Passes immersion test using water/ detergent. Acceptable solutions include 1-1-1 trichlorethane, freon, (TF, TE, or TMS), isopropyl alcohol, detergent (140°F maximum). Terpene acceptable for Series 90 only. Solutions which are not recommended include acetone, methylene chloride, freon TMC.

#### **Materials and Finishes**

**Shorting Member (Ball):** Brass, gold-plate over nickel barrier.

Base Contacts: Copper alloy, gold-plate over nickel barrier.

**Terminals:** Copper alloy, matte tin plated over nickel barrier.

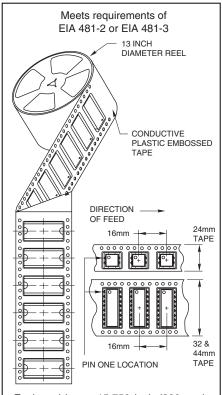
Non-Conductive Parts: Thermoplastic (UL94V-O)

### **Tape and Reel Packaging**

**Tape Seal Integrity:** Passes gross leak test using 125°C flourinert for 20 seconds minimum. Reference MIL-STD-202, Method 112

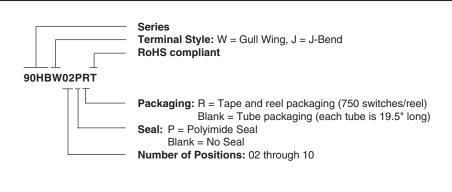
Tape Seal: Polyimide film

## **TAPE AND REEL PACKAGING**



Each reel has a 15.750 inch (390 mm) minimum leader and a 6.30 inch (160 mm) minimum trailer.

## **ORDERING INFORMATION**



No. of Positions	Length Inches	Length Metric	Number Per Tube
2	.270"	6,9 mm	60
3	.370"	9,4 mm	47
4	.470"	11,9 mm	37
5	.570"	14,5 mm	31
6	.670"	17,0 mm	26
7	.770"	19,6 mm	23
8	.870"	22,1 mm	20
9	.970"	24,6 mm	18
10	1.070"	27,2 mm	16

Available from your local Grayhill Distributor. For prices and discounts, contact a local Sales

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