

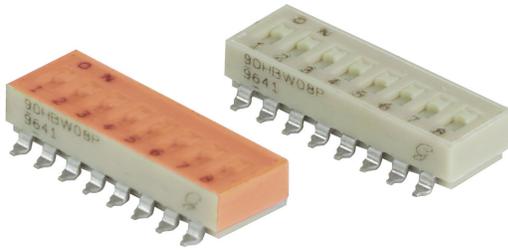


SERIES 90HB
SPST, Low Profile



FEATURES

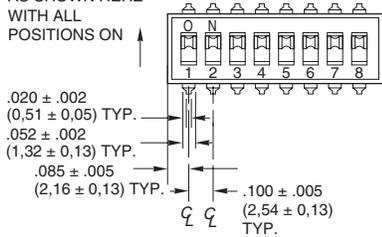
- Compatible with SMT Assembly, Including Infrared Reflow and Vapor-Phase
- Reliable Spring and Ball Contact



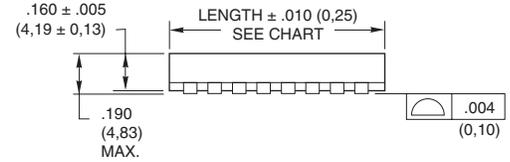
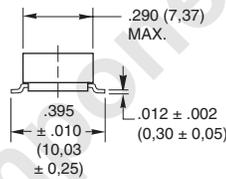
DIMENSIONS In inches (and millimeters)

Top View—Gull Wing

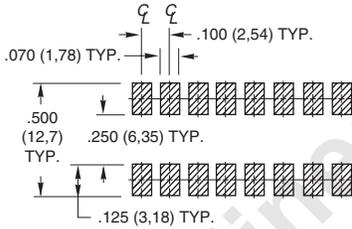
SWITCH IS PACKAGED AS SHOWN HERE WITH ALL POSITIONS ON



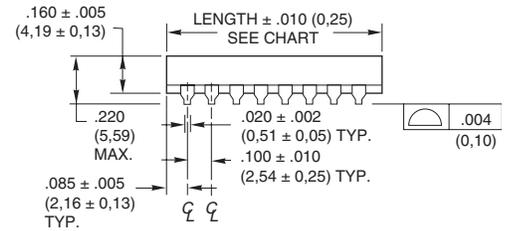
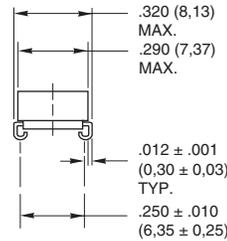
Gull Wing



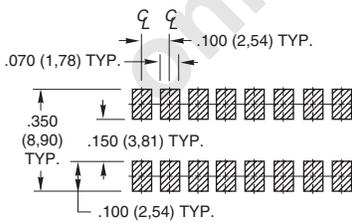
Recommended PC Pad Dimensions—Gull Wing



J-Bend

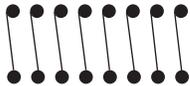


Recommended PC Pad Dimensions—J-Bend



CIRCUITRY

As viewed from the top of the switch in the positions shown in the drawing.



DIP Switches

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°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. High pressure aqueous

cleaning is not recommended.

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.

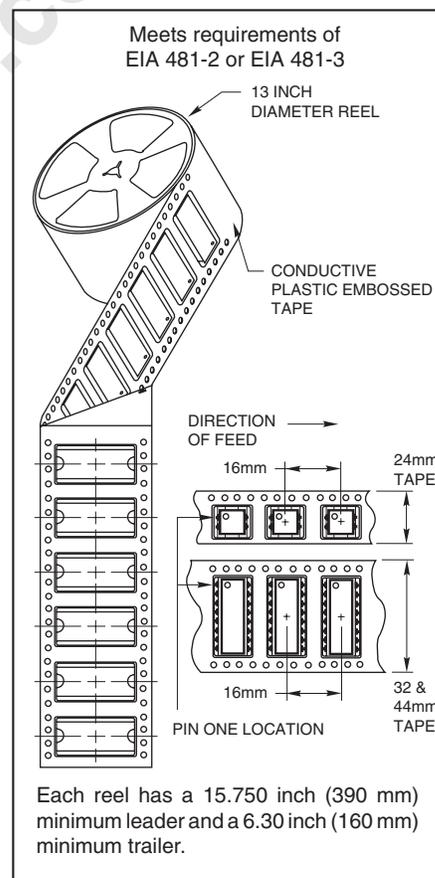
Non-Conductive Parts: Thermoplastic (UL94V-O)

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



ORDERING INFORMATION

Series
Terminal Style: W = Gull Wing, J = J-Bend
RoHS compliant

90HBW02PRT

Packaging: R = Tape and reel packaging (750 switches/reel)
Blank = Tube packaging (each tube is 19.5" long)

Seal: P = Polyimide Seal
Blank = No Seal

Number of Positions: 02 through 10

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 Office, an authorized local Distributor or Grayhill.

** Note: 100% matte tin terminal plating does not meet MIL-S-83504 for lead content.