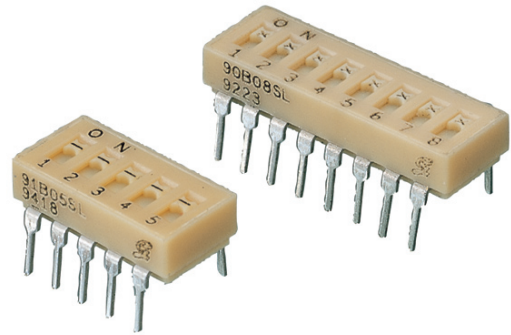


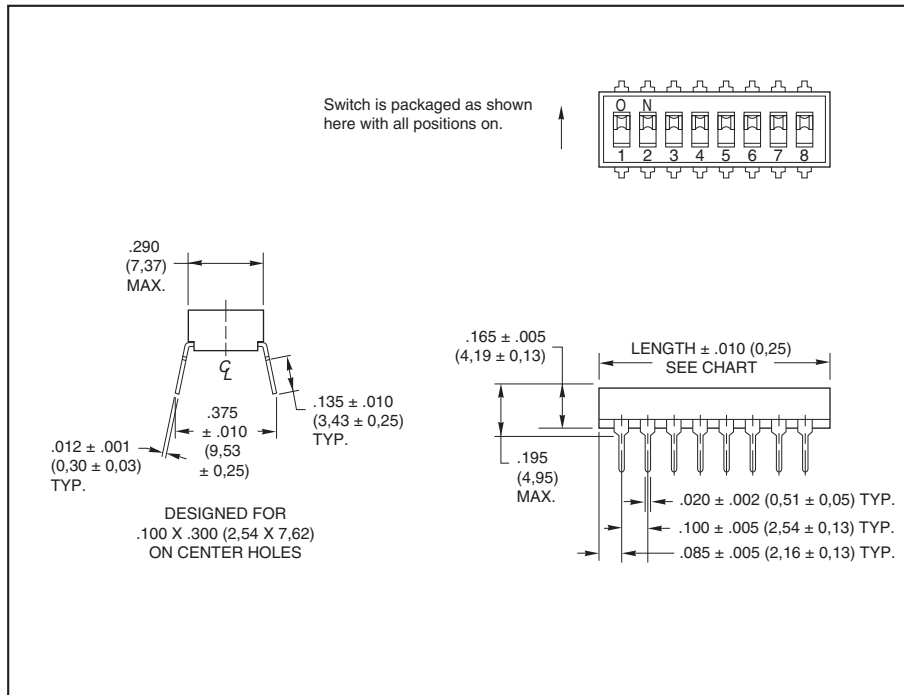
SERIES 90B AND 90GB Machine Insertable MIDIP

FEATURES

- Tested for TO-116 Equipment
- Up to 10 Positions
- High Pressure, Reliable Contacts
- Molded (Sealed) Base and Optional Top Seal
- RoHS Compliant

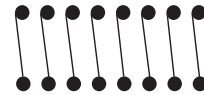


DIMENSIONS In inches (and millimeters)

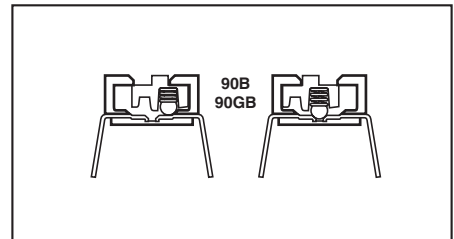


CIRCUITRY

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



CONTACT SYSTEM



ORDERING INFORMATION: Tube Packaging (Each tube is 19.5 inches long)

| No. of Positions | Length Inches | Length Metric | Number Per Tube | Part Number | |
|------------------|---------------|---------------|-----------------|-------------|----------|
| 2 | .270" | 6,9 mm | 60 | 90B02ST | 90GB02ST |
| 3 | .370" | 9,4 mm | 47 | 90B03ST | 90GB03ST |
| 4 | .470" | 11,9 mm | 37 | 90B04ST | 90GB04ST |
| 5 | .570" | 14,5 mm | 31 | 90B05ST | 90GB05ST |
| 6 | .670" | 17,0 mm | 26 | 90B06ST | 90GB06ST |
| 7 | .770" | 19,6 mm | 23 | 90B07ST | 90GB07ST |
| 8 | .870" | 22,1 mm | 20 | 90B08ST | 90GB08ST |
| 9 | .970" | 24,6 mm | 18 | 90B09ST | 90GB09ST |
| 10 | 1.070" | 27,2 mm | 16 | 90B10ST | 90GB10ST |

ADDITIONAL INFORMATION

Please visit our website for accessories.

Available from your local Grayhill Distributor. For prices and discounts, contact a local Sales Office, an authorized local Distributor or Grayhill.

*The "S" in the part number denotes top tape seal versions. To order without top tape seal, leave the "S" off the part number when ordering.

**Style "GB" contains 30μ gold plated terminals.

* To order, add L as a final suffix to the part number. For example, 76RSB08 becomes 76RSB08L; and 90B08S becomes 90B08SL.

SPECIFICATIONS: Standard Styles

| Ratings | 76 | 78 | 90B |
|--|-----------------|-----------------|-----------------|
| Mechanical Life: Operations per switch position | 2,000 | 2,000 | 2,000 |
| Make-and-break Current Rating: Operations per switch position at these resistive loads | | | |
| 1 mA, 5 Vdc; 50 mA, 30 Vdc; or 150 mA, 30 Vdc: | 2,000 | 2,000 | — |
| 10 mA, 30 Vdc; or 10 mA, 50 mVdc: | — | — | 2,000 |
| 10 mA, 50 mVdc; or 25 mA, 24 Vdc; or 100 mA, 6 Vdc: | — | — | 2,000 |
| Contact Resistance: Initially: | ≤ 30 mΩ | ≤ 30 mΩ | ≤ 20 mΩ |
| After life, at 10 mA, 50 mVdc, open circuit: | ≤ 100 mΩ | ≤ 100 mΩ | ≤ 100 mΩ |
| Insulation Resistance: | | | |
| Minimum, at 100 Vdc between adjacent closed contacts and also across open switch contacts | | | |
| Initially (Mohms): | 5,000 | 5,000 | 5,000 |
| After life (Mohms): | 1,000 | 1,000 | 1,000 |
| Dielectric Strength: Minimum voltage (AC, RMS) measured between adjacent closed contacts and also across open switch contacts. | | | |
| Initially: | 750 V | 750 V | 500 V |
| After life: | 500 V | 500 V | 500 V |
| Current Carry Rating: Maximum rise of 20°C | 5 A | 4 A | 3 A |
| Switch Capacitance: At 1 megahertz | 2 pF | 2 pF | 2 pF |
| Operating Temperature Range: | -40°C to + 85°C | -40°C to + 85°C | -40°C to + 85°C |
| Storage Temperature Range: | -55°C to + 85°C | -55°C to + 85°C | -55°C to + 85°C |

Mechanical Ratings

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

Mechanical Shock: Per Method 213, Test Condition A. 1 mS 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.**

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

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

Soldering Information

*For the most current soldering & cleaning processing guidelines, reference Grayhill Dip Switch Processing Information, Bulletin 1234

Series 90 MIDIP and Series 76 recessed rocker (76RSB style) sealed switches have been tested to EIA Standard RS-448-2. Similar performance can be expected from other sealed Series 76 and 78 DIP switches.

Solderability: Per MIL-STD-202, Method 208
Resistance to Soldering Heat: 76RSB: Passes EIA Standard using two, four, and six second soldering time. 90: Per MIL-S-83504, six second test.

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

Cleaning: 76, 78 and 90 series tape sealed products: 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.

Recommended Soldering Conditions:

Materials and Finishes

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

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

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

Non-Conductive Parts: Thermoplastic (UL94V-O)

Potting Material: Epoxy, 76,78 only.

Protective Cover: 76,78, only-Polycarbonate.

Tape Seal:

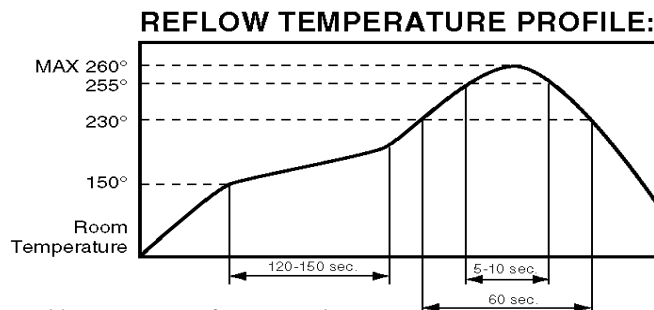
76, 78: Polyester film

90: Polyimide film

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

Reflow Soldering Profile:

(260°C Peak Temperature)



WAVE SOLDERING: 260°C maximum solder temperature for 5 seconds max.

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

Mouser Electronics

Authorized Distributor

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Grayhill:

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[90B07LT](#) [90GB04ST](#) [90B07T](#) [90GB06LT](#) [90GB08LT](#) [90B02SLT](#) [90GB08T](#) [90B03LT](#) [90B03SLT](#) [90B06ST](#)
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