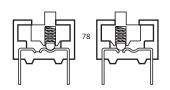
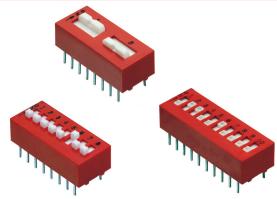


## SERIES 78 SPST To 4PST Slide

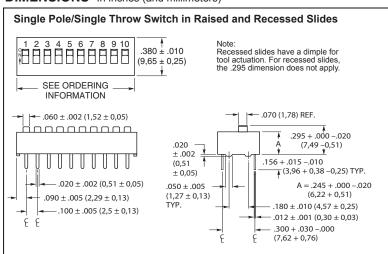


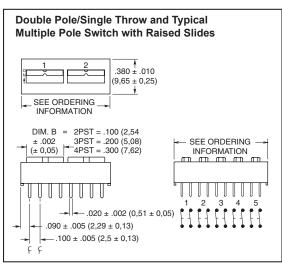
### **FEATURES**

- Raised and Recessed Slides
- SPST, 2PST, 3PST, 4PST
- Sealed Base Standard
- Spring and Ball Contact
- Top Tape Seal Option



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





### **CIRCUITRY**

# Single Pole/Single Throw Switch | 1 2 3 4 | | 1 2 3 4 | | 1 2 3 4 | | 1 2 3 4 | | 1 3 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1 4 | | 1

For switches with 5, 6, 7, 8, or 10PST circuitry, contact Grayhill.

### **ORDERING INFORMATION**

Circuitry	No. of Positions	Length Inches	Length Metric	No./ Tube	Raised Slides*	Recessed Slides*
	2	0.280"	7,1mm	35	78B02T	78RB02T
	3	0.380"	9,7mm	27	78B03T	78RB03T
	4	0.480"	12,2mm	21	78B04T	78RB04T
	5	0.580"	14,7mm	18	78B05T	78RB05T
SPST	6	0.680"	17,3mm	15	78B06T	78RB06T
	7	0.780"	19,8mm	13	78B07T	78RB07T
	8	0.880"	22,4mm	12	78B08T	78RB08T
	9	0.980"	24,9mm	10	78B09T	78RB09T
	10	1.080"	27,4mm	9	78B10T	78RB10T
ļ	12	1.280"	32,5mm	8	78B12T	78RB12T
	1	0.280"	7,1mm	35	78F01T	
	2	0.480"	12,2mm	21	78F02T	
2PST	3	0.680"	17,3mm	15	78F03T	
	4	0.880"	22,4mm	12	78F04T	Recessed
	5	1.080"	27,4mm	9	78F05T	Slides
	6	1.280"	32,5mm	8	78F06T	Not Available
	1	0.380"	9,7mm	27	78G01T	
3PST	2	0.680"	17,3mm	15	78G02T	
	3	0.980"	24,9mm	10	78G03T	
4PST	1	0.480"	12,2mm	21	78H01T	
	2	0.880"	22,4mm	12	78H02T	

<sup>\*</sup>A top tape seal is required for switches that are machine soldered or heavily cleaned after hand soldering. To order top seal versions, add "S" to the Grayhill part number.

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



### **SPECIFICATIONS: Standard Styles**

Ratings Mechanical Life: Operations per switch position	<b>76</b> 2,000	<b>78</b> 2,000	<b>90B</b> 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: 10 mA, 30 Vdc; or 10 mA, 50 mVdc: 10 mA, 50 mVdc; or 25 mA, 24 Vdc; or 100 mA, 6 Vdc:	2,000 — —	2,000 — —	 2,000 2,000
Contact Resistance: Initially: After life, at 10 mA, 50 mVdc, open circuit:	$\leq 30~\text{m}\Omega \\ \leq 100~\text{m}\Omega$	$\leq 30~\text{m}\Omega \\ \leq 100~\text{m}\Omega$	$\leq$ 20 m $\Omega$ $\leq$ 100 m $\Omega$
Insulation Resistance: Minimum, at 100 Vdc between adjacent closed contacts and also across open switch contacts Initially (Mohms): After life (Mohms):	5,000 1,000	5,000 1,000	5,000 1,000
Dielectric Strength: Minimum voltage (AC, RMS) measured between adjacent closed contacts and also across open switch contacts. Initially: After life:	750 V 500 V	750 V 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 specification, 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.

### **Materials and Finishes**

**Shorting Member (Ball):** Brass, gold-plated 10 microinches minimum 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 and Reel Packaging

**Tape Seal:** 76, 78: Polyes

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.

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