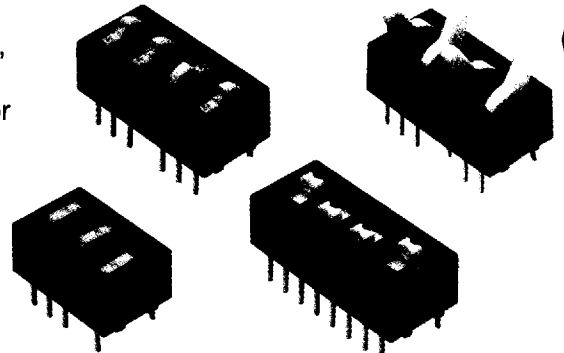


SPDT DIP SWITCHES

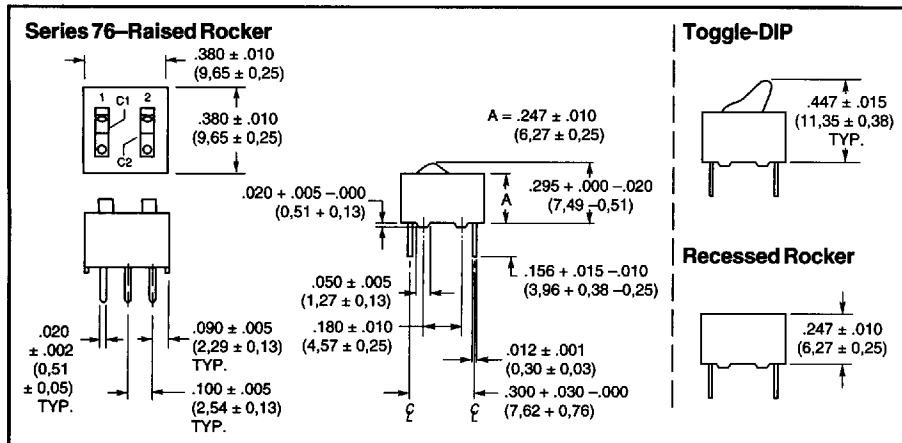
SERIES 76 AND 78

FEATURES

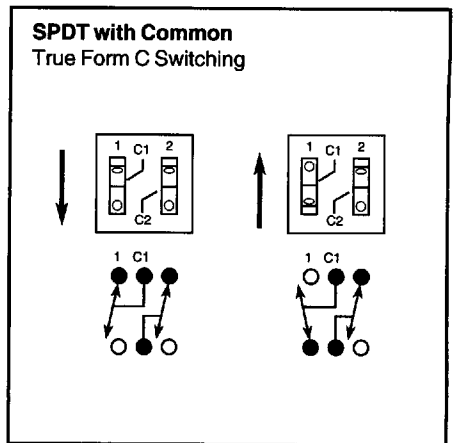
- Raised and Recessed Rocker, and Toggle Actuated Styles
- SPDT with a Common Pole, or SPDT with 2 Isolated Circuits
- Spring and Ball Contact
- Top Tape Seal Option for Most Styles



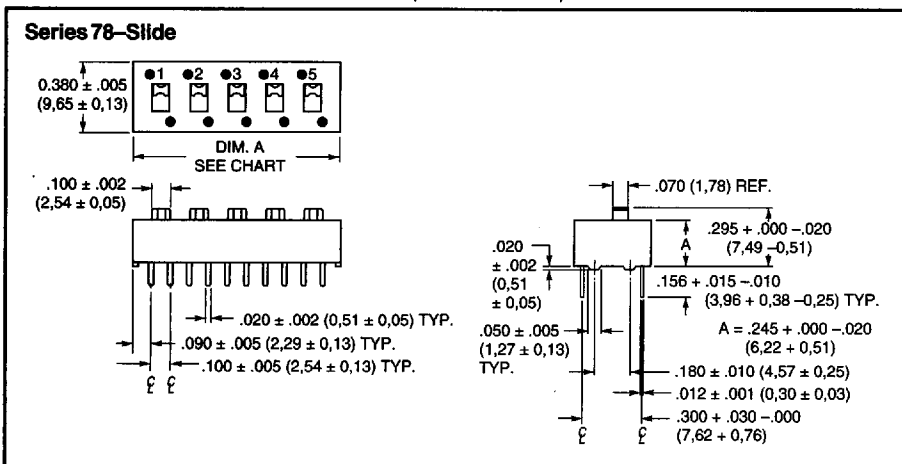
DIMENSIONS—Series 76 In inches (and millimeters)



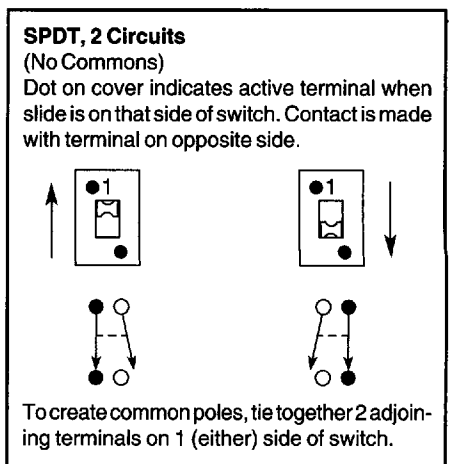
CIRCUITRY—Series 76



DIMENSIONS—Series 78 In inches (and millimeters)



CIRCUITRY—Series 78



ORDERING INFORMATION

Cir-cuitry	Posi-tions	Length Inches	Length Metric	No./ Tube	Raised Type	Recessed Rockers	TOGGLE-DIP
SPDT	2	0.380"	9,7mm	27	76SC02	76RSC02	76STC02
Form	3	0.580"	14,7mm	18	76SC03	76RSC03	76STC03
C	4	0.780"	19,8mm	13	76SC04	76RSC04	76STC04
SPDT	1	0.280"	7,1mm	35	78J01	—	—
2	2	0.480"	12,2mm	21	78J02	—	—
Cir-	3	0.680"	17,3mm	15	78J03	—	—
cuits	4	0.880"	22,4mm	12	78J04	—	—
	5	1.080"	27,4mm	9	78J05	—	—

To order top seal versions, add "S" to the Grayhill part number. Not available on TOGGLE-DIP.

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

ADDITIONAL INFORMATION

For Specifications, see page B-17.
For other Options, see pages B-23 and B-24.

DIP SWITCH SPECIFICATIONS

SPECIFICATIONS—Standard and Military Qualified Styles

Ratings	76	78	90B	90HB
Mechanical Life: Operations per switch position	20,000	20,000	5,000	5,000
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	10,000	10,000	—	—
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	≤ 20 mΩ
After life, at 10 mA, 50 Vdc, open circuit	≤ 100 mΩ	≤ 100 mΩ	≤ 100 mΩ	≤ 100 mΩ
Insulation Resistance:				
Minimum, at 100 Vdc between adjacent closed contacts and also across open switch contacts				
Initially (megohms)	5,000	5,000	5,000	5,000
After life (megohms)	1,000	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	500 V
After life	500 V	500 V	500 V	500 V
Current Carry Rating: Maximum rise of 20°C	5 A	4 A	3 A	3 A
Switch Capacitance: At 1 megahertz	2 pF	2 pF	2 pF	2 pF
Operating Temperature:	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Storage Temperature:	-55°C to +85°C	-55°C to +85°C	-55°C to +85°C	-40°C to +85°C
SMT Processing Temperature (90HB):	—	—	—	260°C Max.

Environmental

Meets all requirements of MIL-S-83504. Where Grayhill performance is superior, the MIL spec is listed in parentheses.

Vibration: Per method 204, Test Condition B 1 microsecond opening (10 microseconds allowed)

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

Moisture Resistance: Per specification, Method 106.

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

Terminal Strength: Per specification

Thermal Aging: 1,000 hours at 85°C; no failures.

Surface Mount Switches (90HBW)

Additional Information

Recommended Processing Temperature: 220°C–230°C

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

Machine Soldering

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.

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

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

Cleaning: 76RSB, 90—Passes immersion test using water/detergent.

Cleaning Solutions: 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.

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

Materials and Finishes

Shorting Member (Ball): Brass, gold plated 10 microinches minimum over nickel barrier.

Base Contacts: Copper alloy, gold plated 10 microinches minimum over nickel barrier.

Terminals: Copper alloy, solder plated over nickel barrier.

Solderability: Per MIL-STD-202, Method 208

Non-Conductive Parts: Thermoplastic, UL94V-O rating.

Potting Material: 76,78 only—Epoxy.

Tape Seal:

76, 78 Polyester film

90 Polyimide film

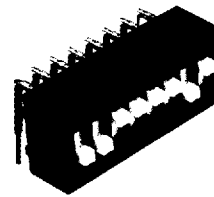
Protective Cover: 76,78, only—Polycarbonate.

RIGHT ANGLE DIP SWITCH OPTION

SERIES 78

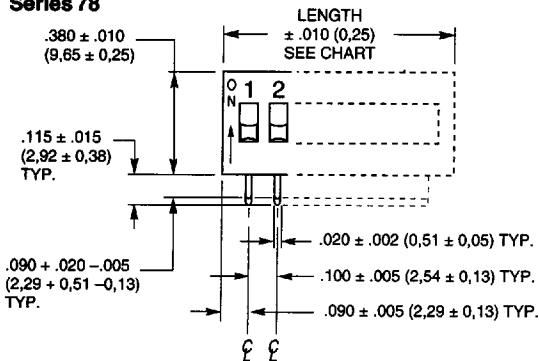
FEATURES

- Easy Access
- SPST Circuitry

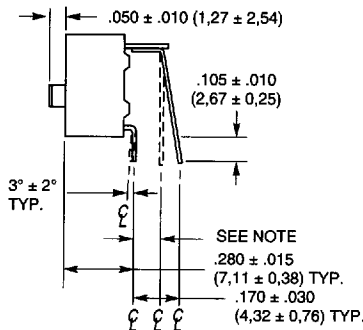


DIMENSIONS In inches (and millimeters)

Series 78



Note: Switches are same length as standard switches. See chart or standard switch pages.



Note: Terminal row spacing is designed to be used in PC board holes with .100 X .100 (2.54 x 2.54) centers.

SPST Switch Length

NO. OF STATIONS	LENGTH INCHES	LENGTH MILLIMETERS
2	0.280	7,1 MM
3	0.380	9,7 MM
4	0.480	12,2 MM
5	0.580	14,7 MM
6	0.680	17,3 MM
7	0.780	19,8 MM
8	0.880	22,4 MM
9	0.980	24,9 MM
10	1.080	27,4 MM
12	1.280	32,5 MM

The 12 station length is for Series 76 switches. For switches of circuitry other than SPST, see standard switch pages.

SPECIFICATIONS

Electrical Ratings

Make and Break Current:

At 1mA, 5 Vdc	10,000 operations
At 50 or 125 mA, 30 Vdc	10,000 operations

Materials and Finishes

Terminal Ends: Copper alloy, solder (90/10) plated 150 microinches minimum over copper/nickel barrier

For other specifications, see Additional Information.

ADDITIONAL INFORMATION

For SPST switches, see page B-14.

For Multipole/ST switches see page B-14.

For SPDT switches, see page B-15; and for DPDT switches, see page B-16.

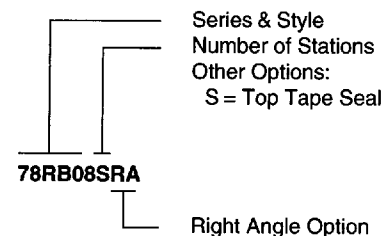
For additional specifications, see page B-17.

CHOICES

Circuitry	Type of Actuation	Series & Style	Number Of Positions	Other Options
SPST	Raised Slide	78B	02 thru 10	S
SPST	Recessed Slide	78RB	02 thru 10	S
2PST	Raised Slide	78F	01 thru 05	S
3PST	Raised Slide	78G	01 thru 03	S
4PST	Raised Slide	78H	01 & 02	S
SPDT-2	Raised Slide	78J	01 thru 05	S
DPDT-4	Raised Slide	78K	01 & 02	S

ORDERING INFORMATION

Sample number orders a right angle mount, top tape sealed, 8-station, SPST switch with recessed slides. Part number for the same switch without tape seal and lines would be 78RB08RA.



Available from your local Grayhill Distributor
Priced competitively. For price, contact Grayhill.

DIP SWITCH OPTIONS AND ACCESSORIES

OPTIONS

Position Identification Line Option

For Series 76RSB, 76RSC, 76RSD, & 90B
A line can be added to the recessed rocker or Series 90 slide actuator to provide positive identification of the actuator position. To order, add L as a final suffix to the part number. For example, 76RSB08 becomes 76RSB08L; and, 90B08S becomes 90B08SL.

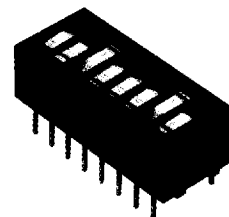
Available from a local Grayhill Distributor

Other Switch Marking

For Series 76, 78, & 90

We can mark your part number or other wording on the switch, often at no charge. For some markings there will be a nominal charge for tooling plus a set-up charge. In addition, there is a marking charge per side per switch. Add it to the unit price and discount it accordingly.

To order, contact Grayhill.



ACCESSORIES

Protective Cover Accessory

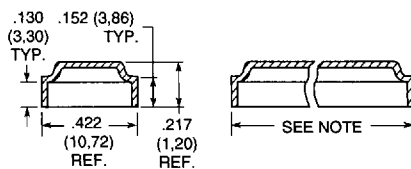
For Series 76, & 78

Rigid, clear plastic cover fits all but toggle actuated switches. It provides a top cover for less strenuous cleaning, serves as a dust cover in dirty environments, and provides protection against accidental actuation.

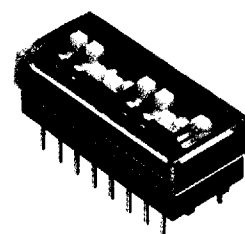
Material: 76,78, only-Polycarbonate.

Purchase as a separate item. Check length of the desired DIP Switch, and then select from the ordering information on this page.

Available from a local Grayhill Distributor



Note: For length, add .042" (1,07 MM) to length of DIP switch.



DIPSTICK Accessory

For all series

Pen sized plastic DIPSTICK has a tapered end for actuating DIP Switches.

Part Number **90-DIPSTICK**

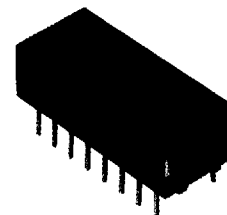
Available from a local Grayhill Distributor

User Applied Tape Seals

For Series 76 & 78

If you prefer to seal switches after your incoming inspection, order a card of 23 (or 46) tape seals. Hand application of these tapes provides less secure seal integrity than factory addition of seals. Check the length of the desired DIP Switch, then select the card of tapes from the chart below.

Available from a local Grayhill Distributor



ORDERING INFORMATION

Length Inches	Tape Seals Part Number	No./ Card
0.280	SHH1127-2	46
0.380	SHH1127-3	46
0.480	SHH1127-4	46
0.580	SHH1127-5	23
0.680	SHH1127-6	23
0.780	SHH1127-7	23
0.880	SHH1127-8	23
0.980	SHH1127-9	23
1.080	SHH1127-10	23

Length Inches	Protective Cover Part Number
0.280	76P02
0.380	76P03
0.480	76P04
0.580	76P05
0.680	76P06
0.780	76P07
0.880	76P08
0.980	76P09
1.080	76P10
1.180	79P10
1.780	79P16

Available from your local Grayhill Distributor
Priced competitively. For price, contact Grayhill.