



## Thru-Hole DIP Switches

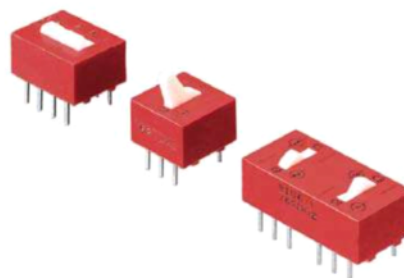


### SERIES 76 and 78

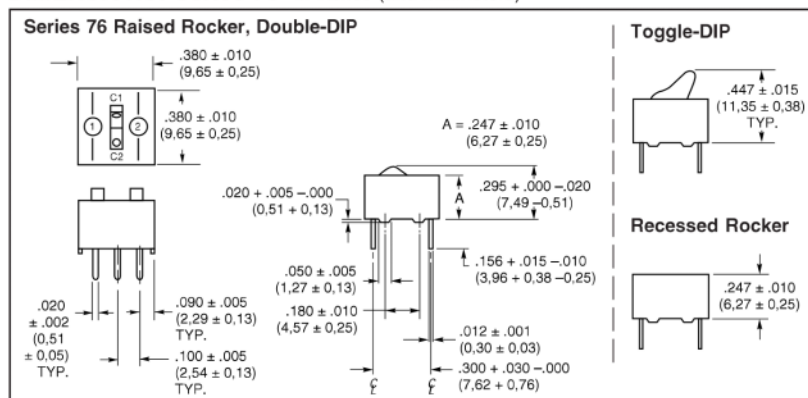
#### DPDT

#### FEATURES

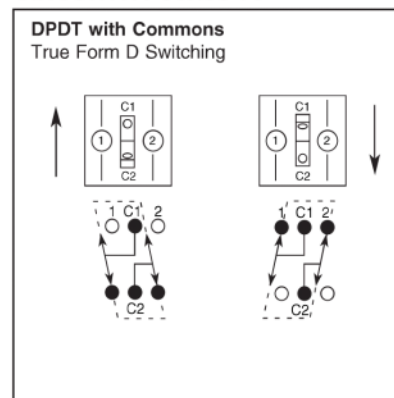
- Raised and Recessed Rocker, and Toggle Actuated Styles
- DPDT with Common Poles, or DPDT with 4 Isolated Circuits
- Spring and Ball Contact
- Top Tape Seal Option for Most Styles



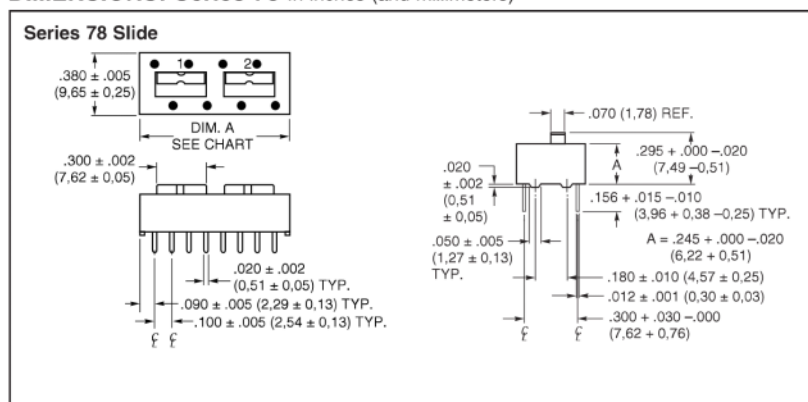
#### DIMENSIONS: Series 76 In inches (and millimeters)



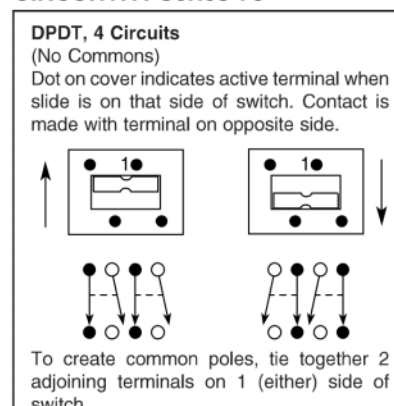
#### CIRCUITRY: Series 76



#### DIMENSIONS: Series 78 In inches (and millimeters)



#### CIRCUITRY: Series 78



#### ORDERING INFORMATION

Circuitry	No./ Positions	Length Inches	Length Metric	No./ Tube	Raised Type*	Recessed Rockers*	Toggle-DIP*
DPDT Form D	1 2	0.380" 0.780"	9,7mm 19,8mm	27 13	76SD01T 76SD02T	76RSD01T 76RSD02T	76STD01T 76STD02T
DPDT 4 Circ.	1 2	0.480" 0.880"	12,2mm 22,4mm	21 12	78K01T 78K02T	— —	— —

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

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" before the "T" in the Grayhill part number. Not available

## 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

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 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

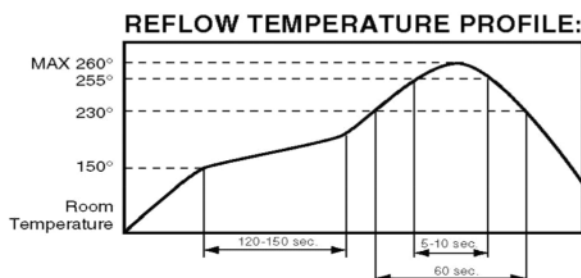
90: Polyimide film

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

### Recommended Soldering Conditions:

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:

[76SD01T](#) [76STD01T](#) [76STD02T](#) [76SD02T](#)