## SERIES 78H

SPDT and DPST

## FEATURES

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


DIMENSIONS In inches (and millimeters)


## CIRCUITRY



## SPECIFICATIONS

## Electrical Ratings

Make-and-break Current Rating: 2,000
operations per switch position at $1 \mathrm{~mA}, 5 \mathrm{Vdc}$; $50 \mathrm{~mA}, 30 \mathrm{Vdc}$; or $150 \mathrm{~mA}, 30 \mathrm{Vdc}$
Contact Resistance: Initial: 30 mohms max. After Life: 100 mohms max. ( 10 mA at 50 Vdc , open circuit)
Insulation Resistance: Minimum, at 100 Vdc between adjacent closed contacts and also across open switch contacts. Initial: 2,000 Mohms; After Life: 1,000 Mohms
Dielectric Strength: Minimum voltage (AC, RMS) measured between adjacent closed contacts and also across open switch contacts. Initial: 750 volts; After Life: 500 volts
Current Carry Rating: 4 amps , maximum rise of $20^{\circ} \mathrm{C}$
Switch Capacitance: 2 pF at 1 megahertz

## Mechanical Ratings

Mechanical Life: 2,000 operations per switch position
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) Terminal Strength: Per specification
Thermal Aging: 1,000 hours at $85^{\circ} \mathrm{C}$; no failures
Thermal Shock: Per specification; no failures; passes contact resistance

## Environmental Ratings

Meets all requirements of MIL-S-83504**. Where Grayhill performance is superior, the MIL spec is listed in parentheses.
Operating Temperature Range: $-40^{\circ} \mathrm{C}$ to + $85^{\circ} \mathrm{C}$
Storage Temperature Range: $-55^{\circ} \mathrm{C}$ to $+85^{\circ} \mathrm{C}$
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: $220^{\circ} \mathrm{C}-230^{\circ} \mathrm{C}$ ( 1 pass $-260^{\circ} \mathrm{C}$ maximum) Processing Position: Switch is to be processed

ORDERING INFORMATION: Tube Packaging

| No. of <br> Positions | Length <br> (inches) | Length <br> (metric) | Carrier Width <br> Dim. A | Part Number* |  |
| :---: | :--- | :---: | :---: | :---: | :---: |
| 1 | $0.280^{\prime \prime}$ | $7,1 \mathrm{~mm}$ | 24 mm | 78 SPDTO1GWT | DPST |
| 2 | $0.480^{\prime \prime}$ | $12,2 \mathrm{~mm}$ | 24 mm | 78 HJ02GWT | 78HF02GWT |
| 3 | $0.680^{\prime \prime}$ | $17,3 \mathrm{~mm}$ | 32 mm | $78 \mathrm{HJO3GWT}$ | 78HF03GWT |
| 4 | $0.880^{\prime \prime}$ | $22,4 \mathrm{~mm}$ | 44 mm | $78 H J 04 G W T$ | 78HF04GWT |

[^0]with all actuators in the closed (on) position as shipped.

Materials and Finishes
Shorting Member: 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: Cover is natural color thermoplastic, actuators are white thermoplastic (UL94V-O)

## TAPE AND REEL PACKAGING



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$\underline{1}$ 25.350.0653.0 SDA10H1BDA 97R06ST A2C-2A5 1825444-7 ADE08SA04 ADE12S04 192960010 2-1825058-8 25.330.0653.1
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E2FMX2D1M1TGJ03M NDI10H 219-9MSTP 204-6ES EPM02FV 701521596 NDS08V 76SB05 79A10 TD06H0SK1 Z7.255.9027.0 1-1825058-3 1825428-4 219-10LPSTF E3ZG6111D03M G4D212PUSTV2DC5 195-7MSTN NDI05H EPG301BT06


[^0]:    * Insert "R" before the "T" in the Grayhill part number for tape and reel packaging (500 switches/reel).
    ${ }^{* *}$ Note: $100 \%$ matte tin terminal plating does not meet MIL-S-83504 for lead content.

