

SERIES 04
4PST

FEATURES

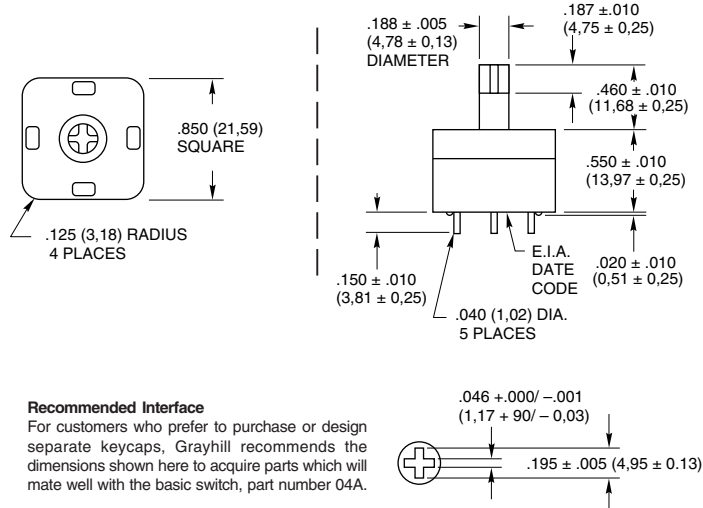
- Joy Stick Action
- Position Locator On CRT Screens
- Moves Cursor On Menu Display



DIMENSIONS In Inches (and millimeters)

Basic Switch

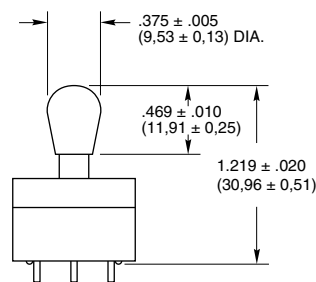
04A



Recommended Interface
 For customers who prefer to purchase or design separate keycaps, Grayhill recommends the dimensions shown here to acquire parts which will mate well with the basic switch, part number 04A.

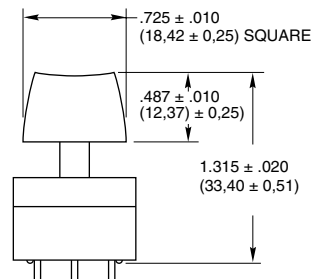
Bat Handle

04A-B01



Keycap

04A-K01



SPECIFICATIONS

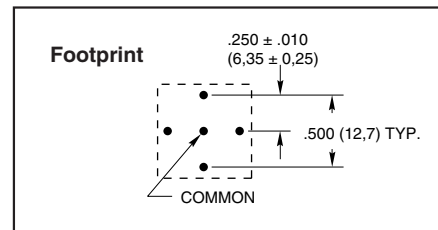
Rating Criteria

- Rated:** Make and break 250 mA at 115 Vac or 125 mA at 220 Vac resistive load for 500,000 operations
- Contact Resistance:** 25 milliohms maximum on a new switch
- Insulation Resistance:** 1,000 megohms at 100 Vdc
- Dielectric Strength:** 500 Vac RMS minimum
- Operating Temperature:** -40°C to +85°C

Materials and Finishes

- Base, Cover and Switch Actuator:** Polyester (Black)
- Terminals:** Brass, gold-plated over nickel
- Shorting Bar:** Phosphor bronze, gold-plated over nickel
- Spring:** Tinned music wire
- Keycap:** ABS or equivalent
- Bat-Handle:** ABS

CIRCUITRY



ORDERING INFORMATION

Description	Part No.
Basic Switch	04A
Switch with Arrowhead Keycap	04A-K01
Switch with Bat-Handle	04A-B01*

*Shipped with bat handle permanently attached.

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

Pushbutton Switches

SERIES 30
SPST, 1 and 5 Amp

FEATURES

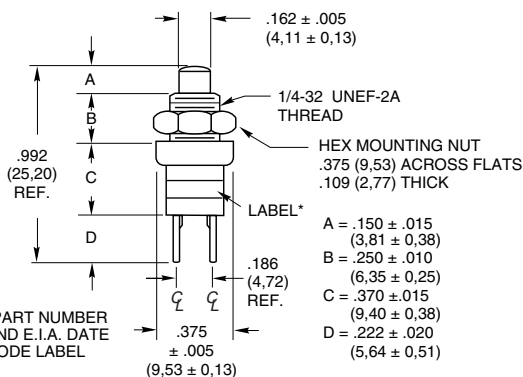
- Reliable
- Economical
- Large Selection
- UL Recognized
- CSA Certified
- Sealed Bushing and Pushbutton Option



DIMENSIONS In Inches (and millimeters)

Normally Open-SPST Standard, Economy and UL Recognized

- 30-1
- 30-1UL
- 30-3
- 30-3UL
- 30-601*



*PART NUMBER AND E.I.A. DATE CODE LABEL

Standard

Rating at 115 Vac Resistive	Rating at 220 Vac Resistive	Operations at Rated Load	Part Number	Button Color
1 Amp	0.5 Amp	1,000,000	30-1 30-3	Red Black
Action	Total Travel	Actuating Force (oz.)	Mtg. Hole	
Momentary	$.062 \pm .010$ (1,57 \pm 0,25)	10 \pm 4	17/64" (6,75)	

Economy Version

Electrical Ratings		Operations at Rated Load	*Complete Part Number	Button Color
At 5 Vdc 150 mA	At 20 Vdc 20 mA	1,000,000	30-601 RED 30-601 BLK	Red Black
Action	Total Travel	Actuating Force (oz.)	Mtg. Hole	
Momentary	$.062 \pm .010$ (1,57 \pm 0,25)	10 \pm 4	17/64" (6,75)	

UL Recognized

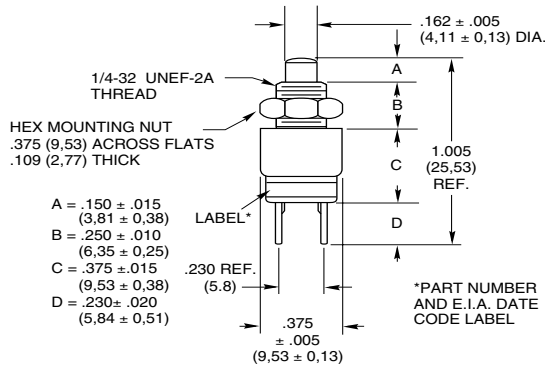
Rating at 120 Vac Resistive	Rating at 220 Vac Resistive	Operations at Rated Load	Part Number	Button Color
5 Amp	2.5 Amp	6,000	30-1UL 30-3UL	Red Black
Action	Total Travel	Actuating Force (oz.)	Mtg. Hole	
Momentary	$.062 \pm .010$ (1,57 \pm 0,25)	10 \pm 4	17/64" (6,75)	

Pushbutton Switches

DIMENSIONS In Inches (and millimeters)

Normally Closed-SPST and UL Recognized

30-2
30-2UL
30-6
30-6UL



A = .150 ± .015
(3,81 ± 0,38)
B = .250 ± .010
(6,35 ± 0,25)
C = .375 ± .015
(9,53 ± 0,38)
D = .230 ± .020
(5,84 ± 0,51)

*PART NUMBER
AND E.I.A. DATE
CODE LABEL

Normally Closed-SPST

Rating at 115 Vac Resistive	Rating at 220 Vac Resistive	Operations at Rated Load	Part Number	Button Color
1 Amp	1/2 Amp	1,000,000	30-2 30-6	Black Red

Action	Total Travel	Actuating Force (oz.)	Mtg. Hole
Momentary	.065 + .010 / - .015 (1,65 + 0,25 / - 0,38)	8 ± 4	17/64" (6,75)

UL Recognized

Rating at 120 Vac Resistive	Rating at 220 Vac Resistive	Operations at Rated Load	Part Number	Button Color
5 Amp	—	6,000	30-2UL 30-6UL	Black Red

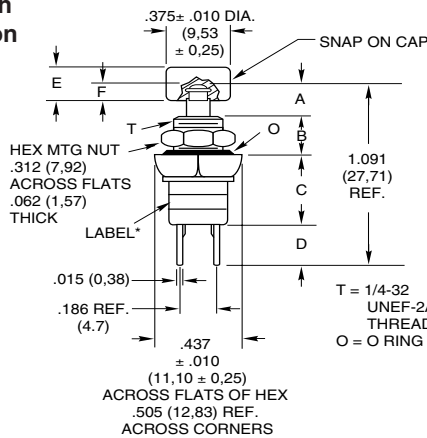
Action	Total Travel	Actuating Force (oz.)	Mtg. Hole
Momentary	.065 + .010 / - .015 (1,65 + 0,25 / - 0,38)	8 ± 4	17/64" (6,75)

Normally Open-SPST With Sealed Bushing and Button

30-251*

A = .209 ± .015
(5,31 ± 0,38)
B = .250 ± .010
(6,35 ± 0,25)
C = .410 ± .015
(10,41 ± 0,38)
D = .222 ± .020
(5,64 ± 0,51)
E = .187 ± .010
(4,75 ± 0,25)
F = .100 ± .010
(2,54 ± 0,25)

*PART NUMBER
AND E.I.A. DATE
CODE LABEL



Rating at 115 Vac Resistive	Rating at 220 Vac Resistive	Operations at Rated Load	*Complete Part Number	Button Color
1 Amp	1/2 Amp	250,000	30-251 RED 30-251 BLK	Red Black

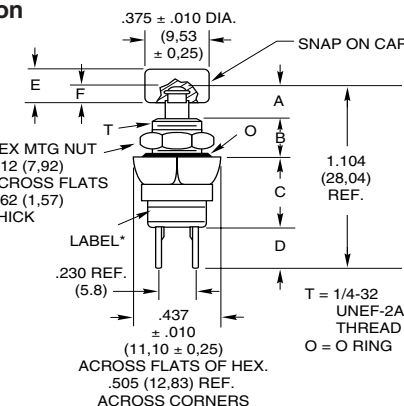
Action	Total Travel	Actuating Force (oz.)	Mtg. Hole
Momentary	.062 ± .020 (1,57 ± 0,51)	30 ± 8	17/64" (6,75)

Normally Closed-SPST With Sealed Bushing and Button

30-252*

A = .209 ± .015
(5,31 ± 0,38)
B = .250 ± .010
(6,35 ± 0,25)
C = .415 ± .015
(10,54 ± 0,38)
D = .230 ± .015
(5,84 ± 0,38)
E = .187 ± .010
(4,75 ± 0,25)
F = .100 ± .010
(2,54 ± 0,25)

*PART NUMBER
AND E.I.A. DATE
CODE LABEL



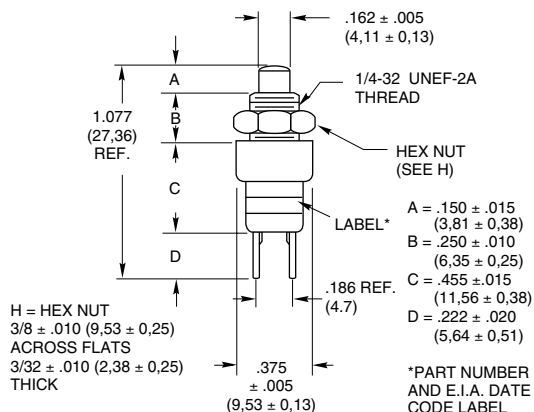
Rating at 115 Vac Resistive	Rating at 220 Vac Resistive	Operations at Rated Load	*Complete Part Number	Button Color
1 Amp	1/2 Amp	250,000	30-252 RED 30-252 BLK	Red Black

Action	Total Travel	Actuating Force (oz.)	Mtg. Hole
Momentary	.065 ± .010 (1,65 ± 0,25)	12 ± 4	17/64" (6,75)

DIMENSIONS In Inches (and millimeters)

Normally Open-SPST With Overtravel

30-15
30-37

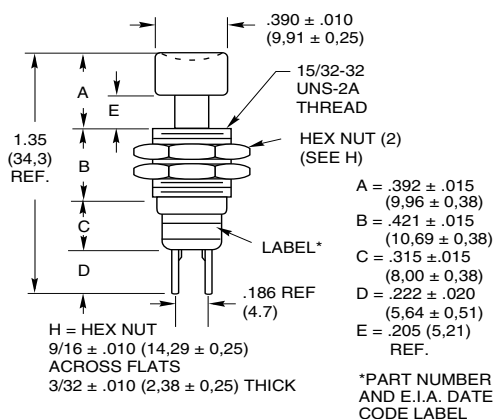


Rating at 115 Vac Resistive	Rating at 220 Vac Resistive	Operations at Rated Load	Part Number	Button Color
1 Amp	1/2 Amp	500,000	30-15 30-37	Red Black

Action	Total Travel	Actuating Force (oz.)	Mtg. Hole
Momentary .020" Overtravel	$.125 + .020 / - .010$ (3,18 + 0,51 / - 0,25)	8 ± 4	17/64" (6,75)

Normally Open-SPST With Positive Feel

30-17*

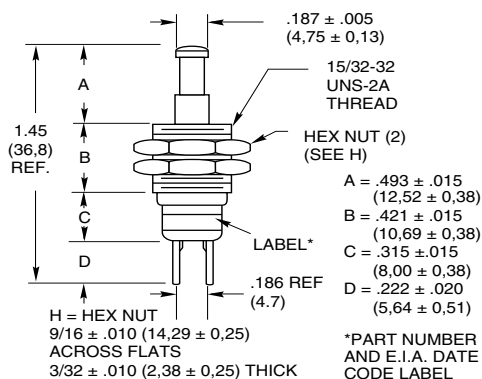


Rating at 115 Vac Resistive	Rating at 220 Vac Resistive	Operations at Rated Load	*Complete Part Number	Button Color
1 Amp	1/2 Amp	200,000	30-17 RED 30-17 BLK	Red Black

Action	Total Travel	Over Travel	Actuating Force (oz.)	Mtg. Hole
Momentary Pos. Feel	$.156 \pm .015$ (3,96 ± 0,38)	.046 (1,17) Min.	18 ± 4	31/64" (12,30)

Normally Open-SPST With Push-Pull

30-16*



Rating at 115 Vac Resistive	Rating at 220 Vac Resistive	Operations at Rated Load	*Complete Part Number	Button Color
1 Amp	1/2 Amp	100,000	30-16 RED 30-16 BLK	Red Black

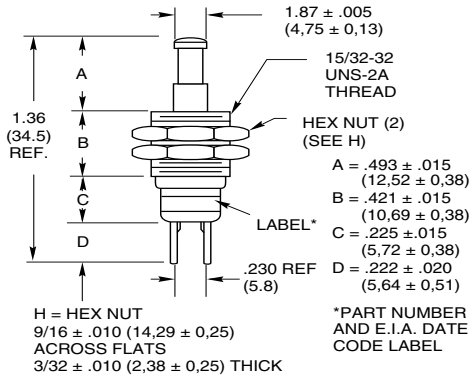
Action	Total Travel	Actuating Force (oz.)	Mtg. Hole
Push-to-Make	$.145 \pm .015$ (3,68 ± 0,38)	56 ± 16	31/64" (12,30)

Pushbutton Switches

DIMENSIONS In Inches (and millimeters)

Normally Closed-SPST With Push-Pull

30-32



Rating at 115 Vac Resistive	Rating at 220 Vac Resistive	Operations at Rated Load	Part Number	Button Color
1 Amp	1/2 Amp	100,000	30-32 RED 30-32 BLK	Red Black

Action	Total Travel	Actuating Force (oz.)	Mtg. Hole
Pull-to-Make	.145 ± .015 (3.68 ± 0.38)	56 ± 16	31/64" (12,30)

SPECIFICATIONS

Rating Criteria

For UL recognized switches, see individual switch chart. File number is E35289.

Contact Resistance: 25 milliohms maximum on a new switch

Voltage Breakdown: 1,000 Vac between mutually insulated parts

Insulation Resistance: 1,000 megohms minimum

Operating Temperature: -40° to +85°C

Mounting Torque: 2 inch-pounds

Switch Materials and Finishes

Mounting Nut and Cover Bushing: Brass, tin zinc

Base: Thermoset plastic

Button: Polyester for 30-16 and 30-32; Phenolic for 30-17, 30-1UL, 30-2, 30-2UL, 30-3UL, 30-6 and 30-6UL; Polycarbonate for all others.

Shorting Bar: Brass with gold over nickel plating for 30-601; brass with fine silver contact surface for all others.

Terminals: Brass with gold over nickel plating for 30-601; commercial brass with fine silver contact surface and silver-plated for all others.

Spring: Tinned music wire

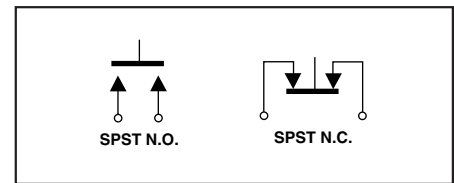
Button Cap: Nylon for 30-17; Polyethylene for 30-251 and 30-252.

Detent Balls: Carbon steel, nickel-plated

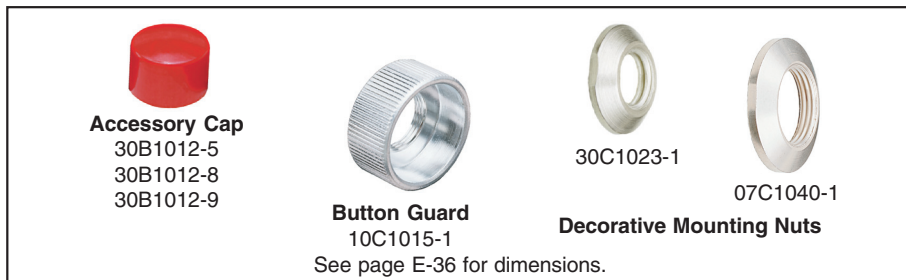
Terminal Type: Solder lug

O-Ring Seal: (30-251, 30-252) Nitrile per MIL-P-5516

CIRCUITRY



ACCESSORIES



Decorative Mounting Nuts

Part Number 30C1023-1 is made for switches with 1/4" (6,35) inch diameter bushings. It may be used with the following Series 30 switches: 30-1, 30-1 UL, 30-2, 30-2 UL, 30-3, 30-6, 30-15, 30-37, 30-251 BLK, 30-251 RED, 30-252 BLK, 30-252 RED, 30-601 BLK and 30-601 RED.

Part Number 07C1040-1 is made for switches with 15/32" (11,91) inch diameter bushings. It may be used with the following Series 30 switches: 30-16 BLK, 30-16 RED, 30-17 BLK, 30-17 RED, 30-32 BLK and 30-32 RED.

For the dimensions, materials and finishes of these decorative mounting nuts, see page E-36.

Button Cap and Guard

The button cap is available in 3 colors: part number 30B1012-5 is red; part number 30B1012-8 is white; and part number 30B1012-9 is black. It may be fastened to the button with adhesive. It may be used with the following Series 30 switches: 30-1, 30-1UL, 30-2, 30-2UL, 30-3, 30-3UL, 30-15, 30-37, 30-601 BLK, and 30-601 RED.

The button guard, part number 10C1015-1 is made to be used with 15/32" (11,91) inch diameter switches to prevent unintentional actuation. It may be used with the following Series 30 switches: 30-16 BLK, 30-16 RED, 30-17 BLK, 30-17 RED, 30-32 BLK, and 30-32 RED.

For the dimensions, materials and finishes of the button cap and guard, see page E-36.

ORDERING INFORMATION

Part Number	Description and Button Color
30-1*	N.O., Standard, Red
30-2*	N.C., Standard, Black
30-3*	N.O., Black
30-6*	N.C., Red
30-15	N.O., Overtravel, Red
30-16 BLK	Push to Make, Black
30-16 RED	Push to Make, Red
30-17 BLK	N.O., Positive Feel, Black
30-17 RED	N.O., Positive Feel, Red
30-32 BLK	Pull to Make, Black
30-32 RED	Pull to Make, Red
30-37 BLK	N.O., Overtravel, Black
30-251 BLK	N.O., Sealed, Black
30-251 RED	N.O., Sealed, Red
30-252 BLK	N.C., Sealed, Black
30-252 RED	N.C., Sealed, Red
30-601 BLK	N.O., Economy, Black
30-601 RED	N.O., Economy, Red

Accessory Part Number	Description
30B1012-5	Accessory Cap, Red
30B1012-8	Accessory Cap, White
30B1012-9	Accessory Cap, Black
30C1023-1	Accessory Nut
07C1040-1	Accessory Nut
10C1015-1	Button Guard

*Add "UL" suffix to part number for UL recognized switches.

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

STANDARD OPTIONS

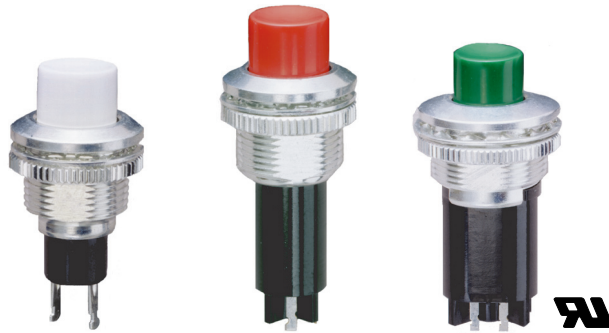
Decorative mountings, see pages E-24 to E-26.

SERIES 30 and 46

Decorator Line

FEATURES

- Attractive Front Panel Bezels (6 choices)
- Space-Saving: Only 5/8" Diameter (SPST & SPDT) and 3/4" Diameter (DPDT) Round Bezels
- SPST with Option of Positive Feel
- SPDT, DPDT with Momentary Contact or Alternate Action
- Sturdy Metal Sleeve or Bushing and Nut Provide Secure Mounting
- UL Recognized Version



DIMENSIONS In Inches (and millimeters)

SPST—Normally Open

30-05-01-502-*
30-05-04-502-*

B = .375 ± .010 (9,53 ± 0,25) DIA.
C = .625 ± .005 (15,88 ± 0,13) DIA.
D = .255 ± .032 (6,48 ± 0,81) DIA.
E = .093 ± .010 (2,36 ± 0,25) DIA.
F = .355 ± .015 (9,02 ± 0,38) DIA.
G = .220 ± .025 (5,59 ± 0,64) DIA.

DIM A ± .020 (0,51) (SEE CHART)

1/2-32 UN-2A THREAD
INSULATING BARRIER

*PART NUMBER AND E.I.A. DATE CODE LABEL

Feature	Partial Part No.	Dim. A
Momentary	30-05-01-502-*	.710 (18,03)
Pos. Feel	30-05-04-502-*	.910 (23,11)

SPDT—Break Before Make

46-05-05-502-*
46-05-07-502-*

B = .375 ± .010 (9,53 ± 0,25) DIA.
C = .625 ± .005 (15,88 ± 0,13) DIA.
D = .255 ± .032 (6,48 ± 0,81) DIA.
E = .093 ± .010 (2,36 ± 0,25) DIA.
F = .355 ± .015 (9,02 ± 0,38) DIA.
G = .150 ± .010 (3,81 ± 0,25) DIA.

DIM A ± .015 (0,38) (SEE CHART)

1/2-32 UN-2A THREAD
INSULATING BARRIER

*PART NUMBER AND E.I.A. DATE CODE LABEL

Feature	Partial Part No.	Dim. A
Momentary	46-05-05-502-*	.992 (25,20)
Alt. Action	46-05-07-502-*	1.278 (32,46)

DPDT—Break Before Make

46-05-08-502-* (UL)**
46-05-09-502-*

B = .375 ± .010 (9,35 ± 0,25) DIA.
C = .750 ± .005 (19,05 ± 0,13) DIA.
D = .255 ± .032 (6,48 ± 0,81) DIA.
F = SEE CHART ± .015 (0,38)
E = .093 ± .010 (2,36 ± 0,25) DIA.
G = .150 ± .010 (3,81 ± 0,25) DIA.

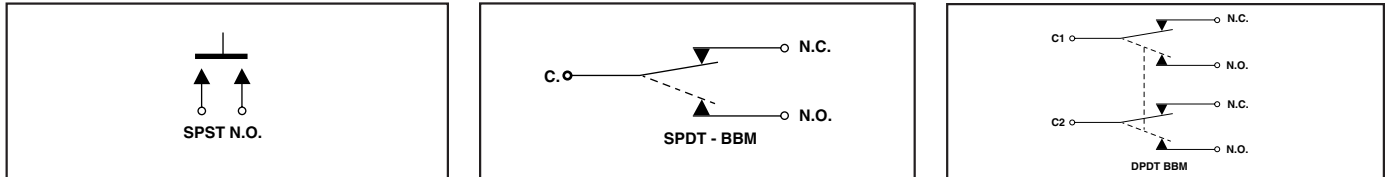
DIM A ± .015 (0,38) (SEE CHART)

5/8-32 UN-2A THREAD
INSULATING BARRIER

*PART NUMBER AND E.I.A. DATE CODE LABEL

Feature	Partial Part No.	Dim. A	Dim. F
Momentary	46-05-08-502-*	1.001 (25,43)	.314 (7,98)
Alt. Action	46-05-09-502-*	1.130 (28,70)	.355 (9,02)

CIRCUITRY



RECOMMENDED PANEL CUTOUT AND MOUNTING HARDWARE

SPST AND SPDT VERSION

.440 (11,17) MIN. ACROSS FLATS

.516 (13,10) MIN. DIA.

DPDT VERSION

.565 (14,35) MIN. ACROSS FLATS

.641 (16,28) MIN. DIA.

Note: All switches fit panels up to .250 (6,35) thick, except 46-05-08-502 which fits panels up to .187 (4,75) thick. Front and back panel access required for installation.

Mounting Hardware

For 46-05-08-502 & 46-05-09-502:
 One internal tooth lockwasher
 One knurled ring nut .765 ± .010 (19,43 ± 0,25) Dia.
 .094 ± .010 (2,39 ± 0,25) Thk.

For SPST & SPDT switches
 One internal tooth lockwasher
 One knurled ring nut .640 ± .010 (16,26 ± 0,25) Dia.
 .094 ± .010 (2,39 ± 0,25) Thk.

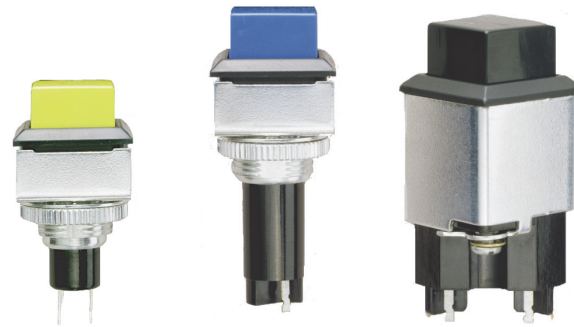
*Partial part number; complete part number by adding a dash for button color: white -01; red -03; green -04; blue -05; yellow -06 or black -07, see Ordering Information.

** Contact Grayhill for part number.

SERIES 30 and 46 Decorator Line

FEATURES

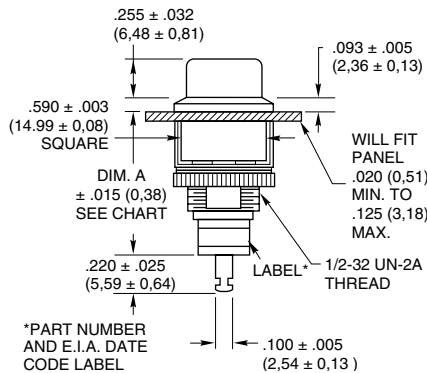
- Attractive Front Panel Bezels (6 choices)
- Space-Saving: Only 11/16" Square
- SPST with Option of Positive Feel
- SPDT, DPDT with Momentary Contact or Alternate Action
- Sturdy Metal Sleeve or Bushing and Nut Provide Secure Mounting



DIMENSIONS In Inches (and millimeters)

SPST—Normally Open

30-01-01-500-*
30-01-04-500-*

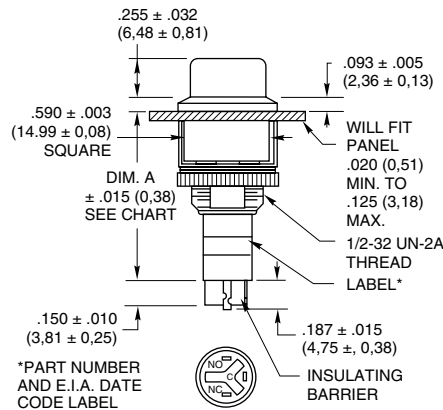


*PART NUMBER AND E.I.A. DATE CODE LABEL

Feature	Partial Part No.	Dim. A
Momentary	30-01-01-500-*	.880 (22,35)
Pos. Feel	30-01-04-500-*	1.037 (26,34)

SPDT—Break Before Make

46-01-05-500-*
46-01-07-500-*



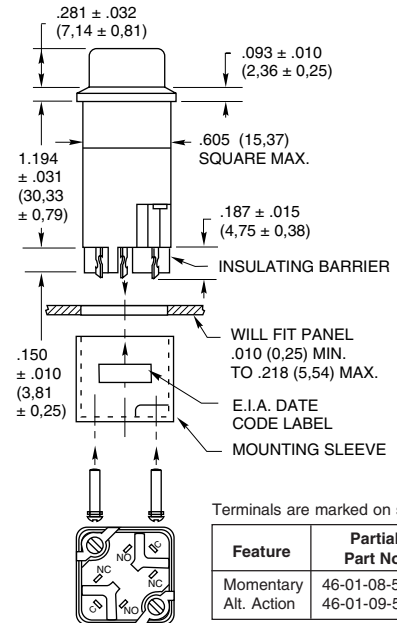
*PART NUMBER AND E.I.A. DATE CODE LABEL

Terminals are marked on switch.

Feature	Partial Part No.	Dim. A
Momentary	46-01-05-500-*	1.174 (29,82)
Alt. Action	46-01-07-500-*	1.264 (32,11)

DPDT—Break Before Make

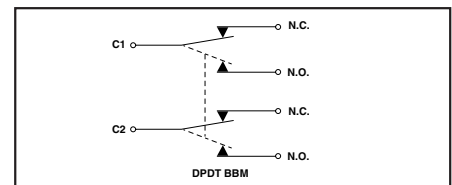
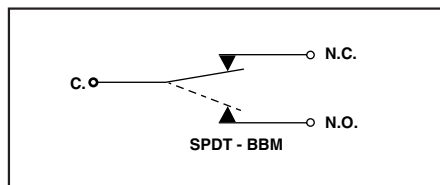
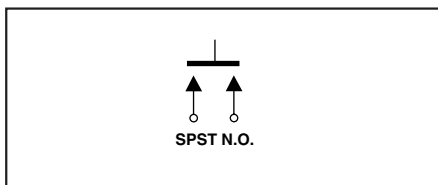
46-01-08-500-*
46-01-09-500-*



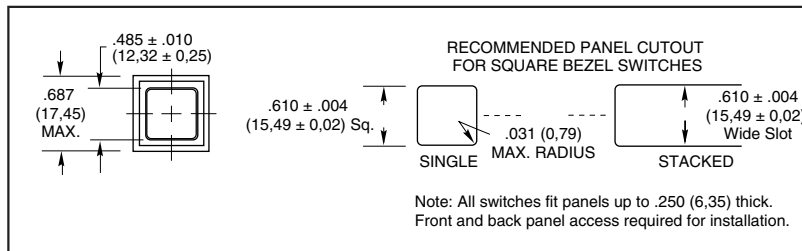
Terminals are marked on switch.

Feature	Partial Part No.
Momentary	46-01-08-500-*
Alt. Action	46-01-09-500-*

CIRCUITRY



FRONT VIEWS AND MOUNTING



Note: All switches fit panels up to .250 (6,35) thick. Front and back panel access required for installation.

Mounting Hardware

For 46-01-08-500 & 46-01-09-500

(See drawing above—mounting hardware shipped loose.)

For SPST & SPDT switches

One internal tooth lockwasher

One knurled ring nut .640 ± .010 (16,26 ± 0,25) DIA.

.094 ± .010 (2,39 ± 0,25) Thk.

*Partial part number; complete part number by adding a dash for button color: white -01; red -03; green -04; blue -05; yellow -06 or black -07, see Ordering Information.

SPECIFICATIONS

Material and Finishes

Lockwasher (Round Bezel): Steel, zinc trivalent chromate-plated

Behind Panel Plate (Square Bezel): Steel, zinc trivalent chromate-plated

Mounting Sleeve and Screws (46-01-08-500, 46-01-09-500 only): Steel, zinc trivalent chromate-plated. **Base:** Phenolic per MIL-M-14, Type CFG

Square Bezel: ABS (SPST, SPDT), thermoset plastic (DPDT)

Mounting Nut, Bushing, and Round Bezel: Brass, tin zinc

Button Cap: ABS (UL version is PPS)

Shorting Bar: Series 30—Fine silver contact area

Series 46—Phosphor bronze, silver-plated

Terminals: Series 30—Fine silver contact area with silver-plated terminal ends

Series 46—Silver contact surface with tin/silver clad terminal ends

Spring: Tinned music wire

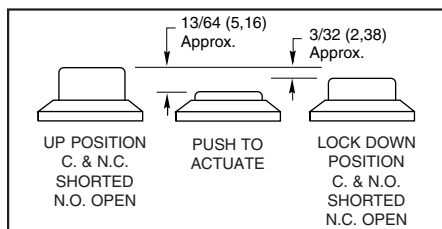
Plunger: Polyphenylene sulfide (PPS) for 30-01-01-500-X and 46-01-05-500-X. Nickel-plated brass for 46-01-07-500-X, 46-05-07-502-X, 46-01-09-500-X and 46-05-09-502-X. Zinc trivalent chromate-plated brass for 46-01-08-500-X. Polycarbonate for all others.

Operating Temperature: -40°C to +85°C

ALTERNATE ACTION (PUSH-PUSH) OPERATING SEQUENCE

Part Number* 46-05-07-502, 46-05-09-502, 46-01-07-500, 46-01-09-500

Alternate action (Push-Push) switches provide a maintained actuated position until the button is pushed again to release.



STANDARD OPTIONS

Epoxy-sealed terminals and wire leads, see page E-35.

ORDERING INFORMATION & OPERATING FEATURES

Butt Contact	Square Bezel	Round Bezel	Circuitry	Feature	Total Travel	Bottoming Force	Actuating Force	Overtravel
Butt Contact	30-01-01-500-*	30-05-01-502-*	SPST-N.O.	Momentary	.080 ± .015 (2,03 ± 0,38)	—	10 ± 4 oz.	—
	30-01-04-500-*	30-05-04-502-*	SPST-N.O.	Positive Feel & Overtravel	.156 ± .015 (3,96 ± 0,38)	—	18 ± 4 oz.	.046 Min.
Wiping Contact	46-01-05-500-*	46-05-05-502-*	SPDT	Momentary	.180 min. (4,57)	1.1 ± .25 Lbs	—	—
	46-01-07-500-*	46-05-07-502-*	SPDT	Alternate Action	.210 ± .015 (5,33 ± 0,38)	1.5 ± .25 Lbs	—	—
	46-01-08-500-*	46-05-08-502-*	DPDT	Momentary	.180 min. (4,57)	1.6 ± .5 Lbs.	—	—
	46-01-09-500-*	46-05-09-502-*	DPDT	Alternate Action	.210 ± .015 (5,33 ± 0,38)	1.8 ± .5 Lbs.	—	—

*Partial part number; complete the part number by adding a dash for button color: white -01; red -03; green -04; blue -05; yellow -06 or black -07.

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

RATINGS

Electrical Ratings	Series 30	Series 46
Contacts	Butt type	Wiping type
Rating at 115 Vac Res.	1 Amp	0.25 Amp
Rating at 220 Vac Res.	0.5 Amp	0.125 Amp
Circuitry	SPST-N.O. (Standard); SPST-N.O. (w/Overtravel), SPST-N.O. (w/Positive Feel)	SPDT, DPDT Break Before Make
Life Expectancy	SPST-N.O. (Standard): 1,000,000 operations SPST-N.O. (w/Positive Feel): 200,000 operations; SPST-N.O. (w/Overtravel): 500,000 operations	250,000 operations
Contact Resistance	25 milliohms or less on a new switch	
Voltage Breakdown	1000 Vac between mutually insulated parts	
Insulation Resistance	1000 megohms minimum	
Operating Temperature	-40°C to +85°C	

LEGENDS

All button caps can be printed in epoxy ink. Any type style or design can be used to produce the legend. If News Gothic Condensed style is used, limits can be approximated from the chart below; actual limits depend on specific legend.

There is a per-button impression charge. A nominal set up charge per legend applies to orders of 1 to 99 pieces. (Non-standard legends are subject to a one time tooling charge. Contact Grayhill for more specifics.)

Grayhill Type Identification No.	Character Height (Typ.)	Sample Style and Sizes	Square Button Character and Line Limitation		Round Button Character and Line Limitation	
			Character	Line	Character	Line
4GH088	.083 (2,1)	ABCDEFGHIJ	6 Char. 2 Lines	TAB LOCATE	3 Char. 1 Line	OFF
1GH125	.138 (3,5)	ABCDEFGHIJ	5 Char. 1 Lines	INDEX	3 Char. 1 Line	TAB
3GH187	.207 (5,3)	ABCDEF	3 Char. 1 Line	OFF	2 Char. 1 Line	15
2GH250	.276 (7,0)	ABCD	2 Char. 1 Line	15	N/A	N/A

Pushbutton Switches

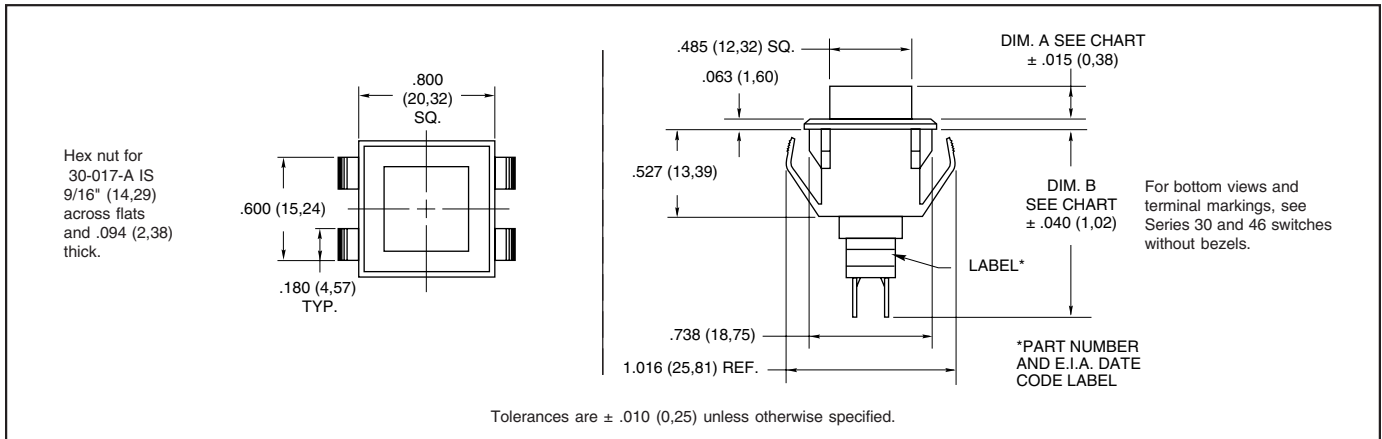
SERIES 30 and 46 Snap-in Panel Mount

FEATURES

- Sleek Black Matte Bezel
- Convenient Snap-In Front Mount
- Choice of 6 Button Colors
- SPST, SPDT or DPDT Circuitry
- Alternate Action, Positive Feel and Overtravel Versions
- Printed Button Option

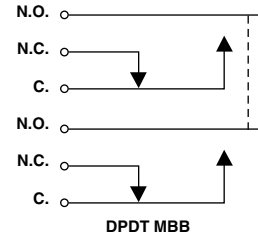
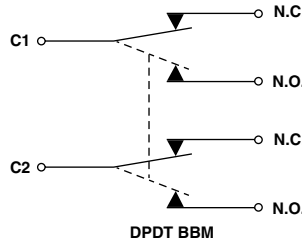
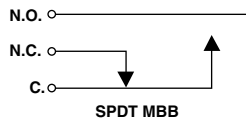
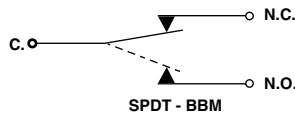


DIMENSIONS In Inches (and millimeters)



CIRCUITRY

Switches have momentary action unless otherwise indicated in the chart below.



ADDITIONAL DIMENSIONS AND PART NUMBERS

Circuitry and Features	Dim. A: Button Height (± .015)	Dim. B: Behind Panel Length (± .040)	Total Travel	Actuating Force	Partial Part No.*
Butt Contact Switches - Series 30					
SPST-N.O.	.205 (5,21)	1.119 (28,42)	.062 ± .010 (1,57 ± 0,25)	10 ± 4 oz.	30-001-A-*
SPST-N.O., Overtravel	.205 (5,21)	1.204 (30,58)	.125 ± .020 (3,18 ± 0,51)	8 ± 4 oz.	30-015-A-*
SPST-N.O., Overtravel & Positive Feel	Adjustable**	Adjustable**	.156 ± .015 (3,96 ± 0,38)	18 ± 4 oz.	30-017-A-*
SPST-N.O., Economical	.205 (5,21)	1.119 (28,42)	.062 ± .010 (1,57 ± 0,25)	10 ± 4 oz.	30-601-A-*
SPST-N.C.	.205 (5,21)	1.132 (28,75)	.065 ± .015 (1,65 ± 0,38)	8 ± 4 oz.	30-002-A-*
Wiping Contact Switches - Series 46					
SPDT, BBM	.205 (5,21)	1.417 (35,99)	.180 (4,57) min.	1.1 ± .25 lbs.	46-102-A-*
SPDT, MBB	.205 (5,21)	1.417 (35,99)	.180 (4,57) min.	1.1 ± .25 lbs.	46-111-A-*
SPDT, BBM, Alternate Action	.293 (7,44)	1.448 (36,78)	.180 (4,57) min.	1.5 ± .25 lbs.	46-502-A-*
DPDT, BBM	.205 (5,21)	1.448 (36,78)	.180 (4,57) min.	2.2 ± .5 lbs.	46-200-A-*
DPDT, MBB	.205 (5,21)	1.448 (36,78)	.180 (4,57) min.	2.2 ± .5 lbs.	46-201-A-*
DPDT, BBM, Alternate Action	.293 (7,44)	1.448 (36,78)	.180 (4,57) min.	1.8 ± .5 lbs.	46-402-A-*

*Partial part number, complete part number by adding a dash for button color: white -01; red -03; green -04; blue -05; yellow -06 or black -07, see Ordering Information.

**Adjustable from Dim. A .170 (4,32) minimum, Dim. B 1.285 (32,64) maximum to Dim. A .290 (7,37) maximum, Dim. B 1.165 (29,59) minimum with hex nut below bezel.

SERIES 30 Snap-in Panel Mounting

FEATURES

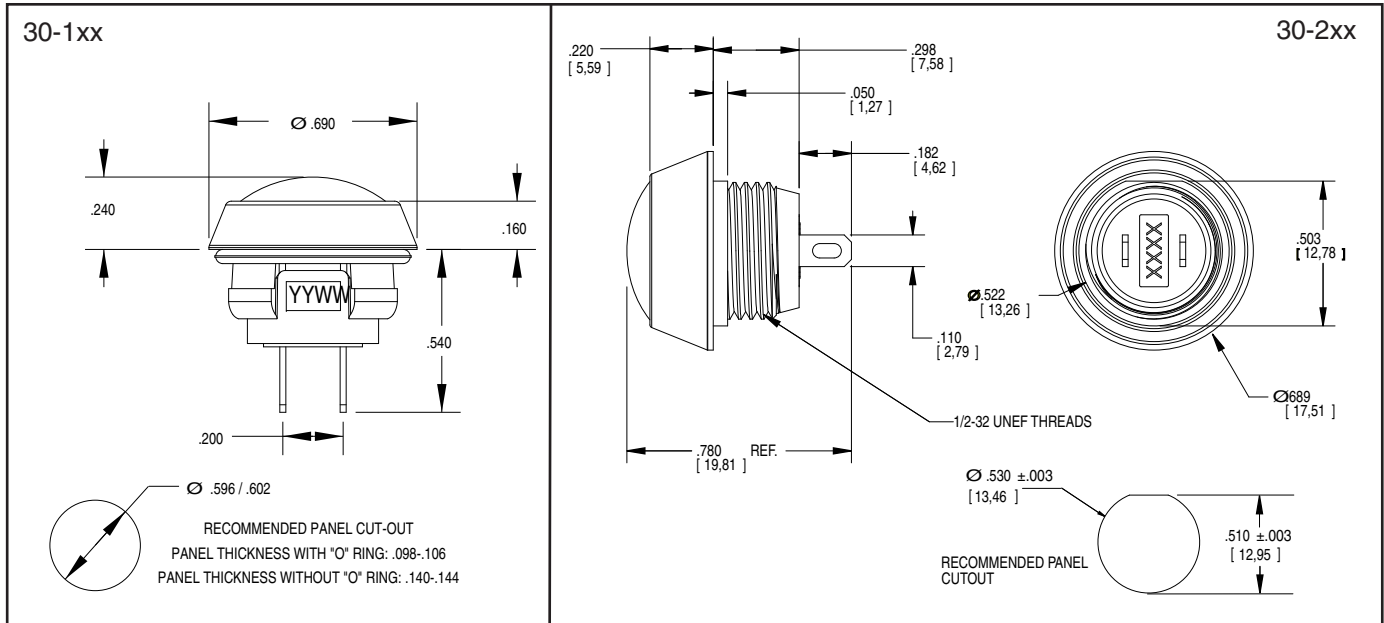
- Convenient snap-in panel mounting
- Choice of 6 button colors
- SPST (momentary contact)
- Gold plated contacts
- Butt contact system
- Sealed against dust and moisture (30-2xx to IP67)



30-1xx

30-2xx

DIMENSIONS In inches (and millimeters)



MATERIAL

Housing: Aluminum, black chrome finish (30-2xx), Nylon, 45% glass-filled (30-1xx)

Button, Base, and Plunger: Nylon, 45% glass-filled

Terminal and Shorting Bar: Brass, gold-plated over nickel

Internal Seal: Silicone rubber

O-ring Seal: Silicone (panel on 30-2xx)

Spring: Tinned music wire

Travel: .090 nominal

Travel Before Make: .035 nominal

RATING

Cycles: 500,000 actuations

Operating Temperature: -40°C to +80°C

Shock: 100 G's/6 milliseconds

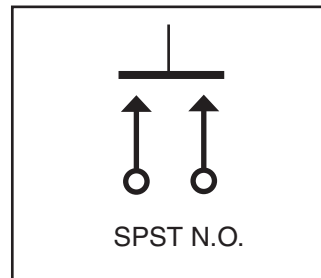
Rating at 24 VDC: 150 milliamps

Voltage Breakdown: 1000 Vac between mutually insulated parts

Contact Resistance: 25 megaohms max on new switch

Insulation: 1,000 megaohms minimum

CIRCUITRY

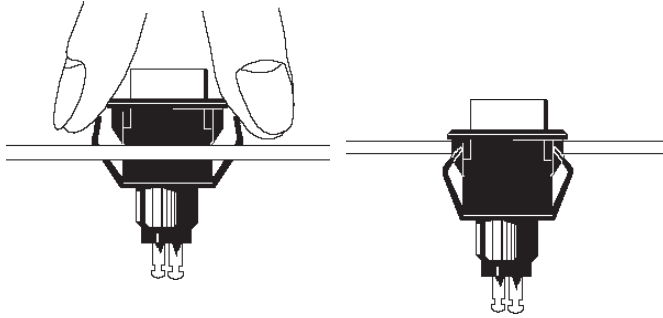


ORDERING INFORMATION

Part Number	Description
30-100	Black
30-101	Red
30-102	Green
30-103	Yellow
30-104	Orange
30-105	Blue
30-200	Sealed, Black
30-201	Sealed, Red
30-202	Sealed, Green
30-203	Sealed, Yellow
30-204	Sealed, Orange
30-205	Sealed, Blue

MOUNTING

Easy Snap-In Mounting



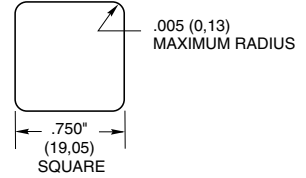
Just snap into pre-cut panel hole.

Plastic wings lock switch in place.

PANEL CUTOUT

Recommended Panel Cut

Switch will fit panels .049" (1,24) to .125" (3,18) thick. Recommended panel thickness is 18 gauge.



SPECIFICATIONS

Life Limiting Criteria—Series 30 & 46

Contact Resistance: Less than 25 milliohms on a new switch

Voltage Breakdown: 1,000 Vac between mutually insulated parts

Insulation Resistance: 1,000 megohms minimum

Ratings—Series 30

Current Rating:

30-601 150 mA, 5 Vdc resistive and 20 mA, 20 Vdc resistive

All others 1 A, 115 Vac resistive, or 0.5 A, 220 Vac resistive

Life Expectancy:

30-015 500,000 operations

30-017 200,000 operations

All others 1,000,000 operations

Ratings—Series 46

Current Rating: 250 mA, 115 Vac resistive or 125 mA, 220 Vac resistive

Life Expectancy: 250,000 operations

Materials and Finishes—Series 30

Bezel: Nylon

Button Cap: ABS plastic

Switch Bushing: Brass, tin zinc

Base: Thermoset plastic

Spring: Tinned music wire

Plunger: Polycarbonate

Shorting Bar:

30-601 Brass, gold-plated over nickel

All Others Brass with fine silver contact area

Base Contacts:

30-601 Brass, gold-plated over nickel

30-002 Brass with fine silver contact area

All Others Bronze with fine silver contact area

Terminals:

30-002 Brass, silver-plated

30-601 Bronze, gold-plated over nickel

All Others Bronze, silver-plated

Nut: Provided only on 30-017; allows button height adjustment. Brass, zinc trivalent chromate-plated.

Materials and Finishes—Series 46

Bezel: Nylon

Button Cap: ABS plastic

Switch Bushing: Brass, zinc trivalent chromate-plated.

Base: Thermoset plastic

Spring: Tinned music wire

Plunger: 46-402/502 Nickel-plated brass
All Others Polycarbonate

Shorting Bar: Phosphor bronze, silver-plated

Base Contacts: Phosphor bronze with silver contact area

Terminals: Phosphor bronze, tin/silver plating

Covers (46-200/201): Brass, zinc trivalent chromate-plated

STANDARD OPTIONS

Epoxy-sealed terminals and wire leads, see page E-35.

LEGENGING OPTION

Contact Grayhill

A button legend can be printed in epoxy ink which bonds to the surface of the button cap. Any type style or design which can be photographed can be used to produce the legend.

There is a per-button printing charge. A nominal set up charge per legend applies to orders of 1 to 99 pieces. Non-standard legends are subject to one time artwork and tooling charges. Consult Grayhill for help with actual legend.

ORDERING INFORMATION

Use the partial part number you have selected from the Dimensions and Part Number chart, and add the button color suffix. Example:

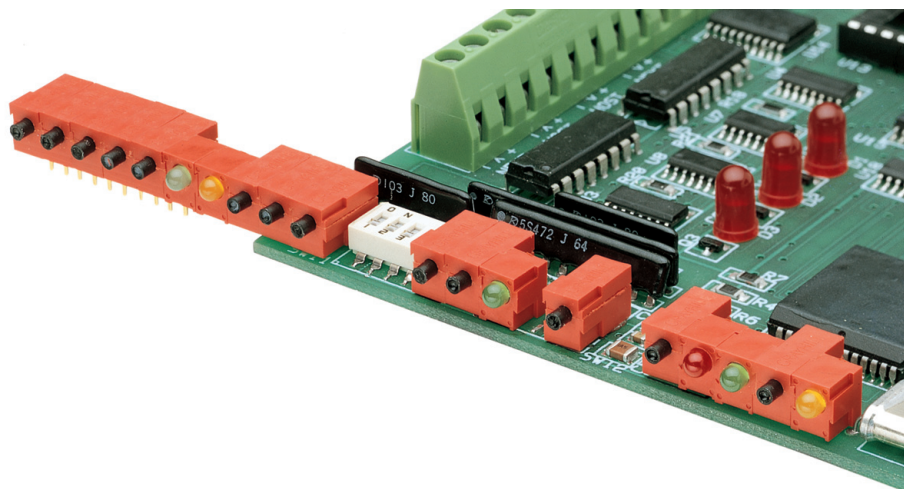
46-200-A-03 Color: 01, 03, 04, 05, 06, 07

01 = White 03 = Red 04 = Green
05 = Blue 06 = Yellow 07 = Black

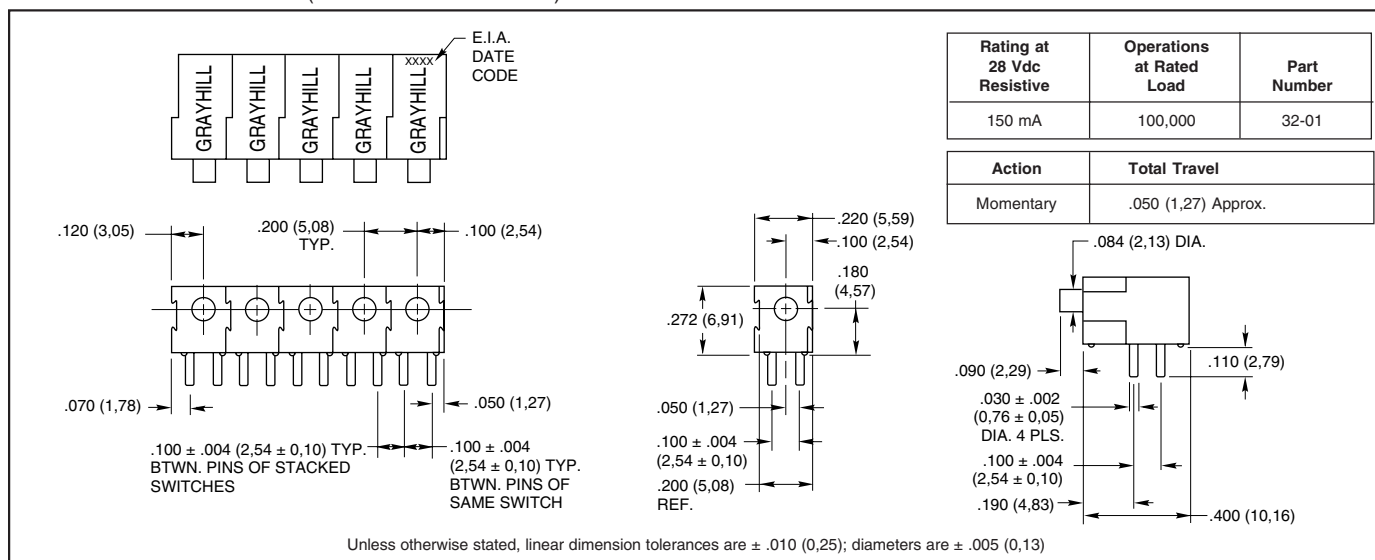
SERIES 32
SPST and SPDT,
Stackable with LED

FEATURES

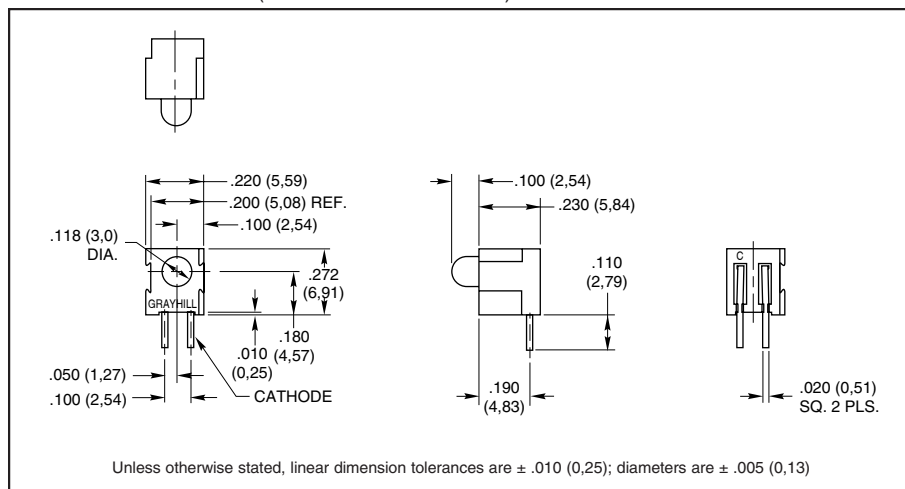
- Stackable, Provides Custom Switch Arrangements
- .200" Centers When Stacked
- SPST–N.O., SPST–N.C. Circuitry in the Same Package
- Process Compatible, Internally Sealed Plunger
- Status/Reset or Press-to-Test Functions with Companion LED



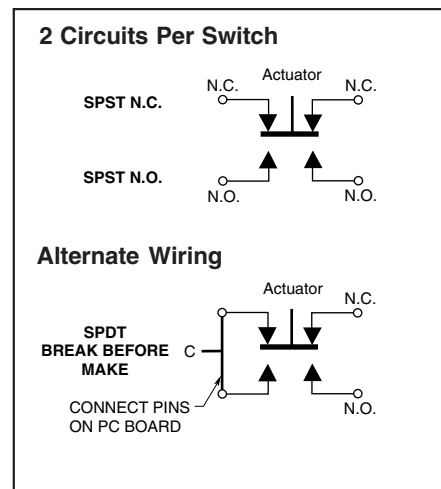
SWITCH DIMENSIONS (In inches and millimeters)



LED DIMENSIONS (In inches and millimeters)



SWITCH CIRCUITRY



Pushbutton Switches

SPECIFICATIONS

Rating Criteria

Contact Resistance: 25 milliohms maximum on a new switch

Voltage Breakdown: 1,000 Vac between mutually insulated parts

Insulation Resistance: 1,000 megohms minimum

Switch and LED Operating Temperature: -40°C to +85°C

Materials and Finishes

Switch Base, LED Base, Button and Cover: Polyester

Shorting Bar: Phosphor bronze, gold-plated over nickel

Switch Terminals: Brass, gold-plated over nickel

LED Terminals: Steel, tin-plated

Spring: Tinned Music Wire

LED Information

Color	MCD*		Viewing Angle
	Min.	Max.	
Red	0.8	5.0	60°
Green	0.8	3.2	60°
Yellow	0.8	3.2	60°

*MCD = Millicandellas at 2 mA

Recommended Current: 2mA

Current limiting resistor is **not** supplied.

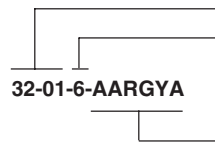
ORDERING INFORMATION: Individual Units

Part Number	Description
32-01	Switch, 10 microinches gold plating, black button, red body
32-02	Switch, 30 microinches gold plating, black button, red body
32LED-RED	Red LED and holder, red body
32LED-GRN	Green LED and holder, red body
32LED-YEL	Yellow LED and holder, red body

Grayhill or your local Distributor will assemble stacks of switches, LEDs or combinations.

Assemblies of Switches or Switches and LED Combinations

Example Part Number



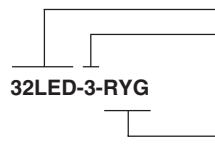
Basic switch part number (see *Ordering Information*)
Number of ganged elements (2 thru 6)

Arrangement definition (left to right, front view)
 A = Switch
 R = Red LED
 G = Green LED
 Y = Yellow LED

Example part number describes a stack of 6 elements consisting of two switches, a red LED, a green LED, a switch and a yellow LED. Shorter stacks will have fewer letters in the arrangement definition. Contact Grayhill for stacks of more than six elements.

Assemblies of LEDs Only

Example Part Number



Basic identification for LEDs
Number of ganged elements (2 thru 6)

Arrangement definition (left to right, front view)
 R = Red LED
 G = Green LED
 Y = Yellow LED

Example part number describes a stack of 3 LEDs, arranged red, yellow and green from left to right. Maximum number of stacked LEDs in this part numbering scheme is six. Contact Grayhill for stacks of more than six elements.

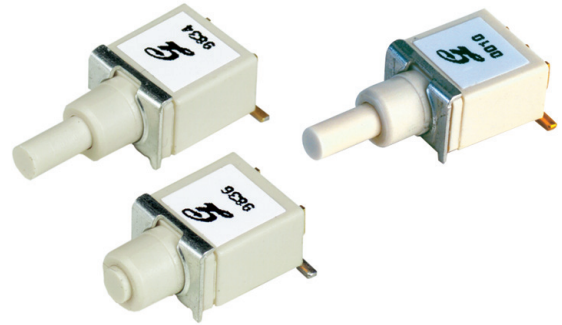
Available from your local Grayhill Distributor.

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

SERIES 38BM AND 38BC Sub-Miniature Surface Mount

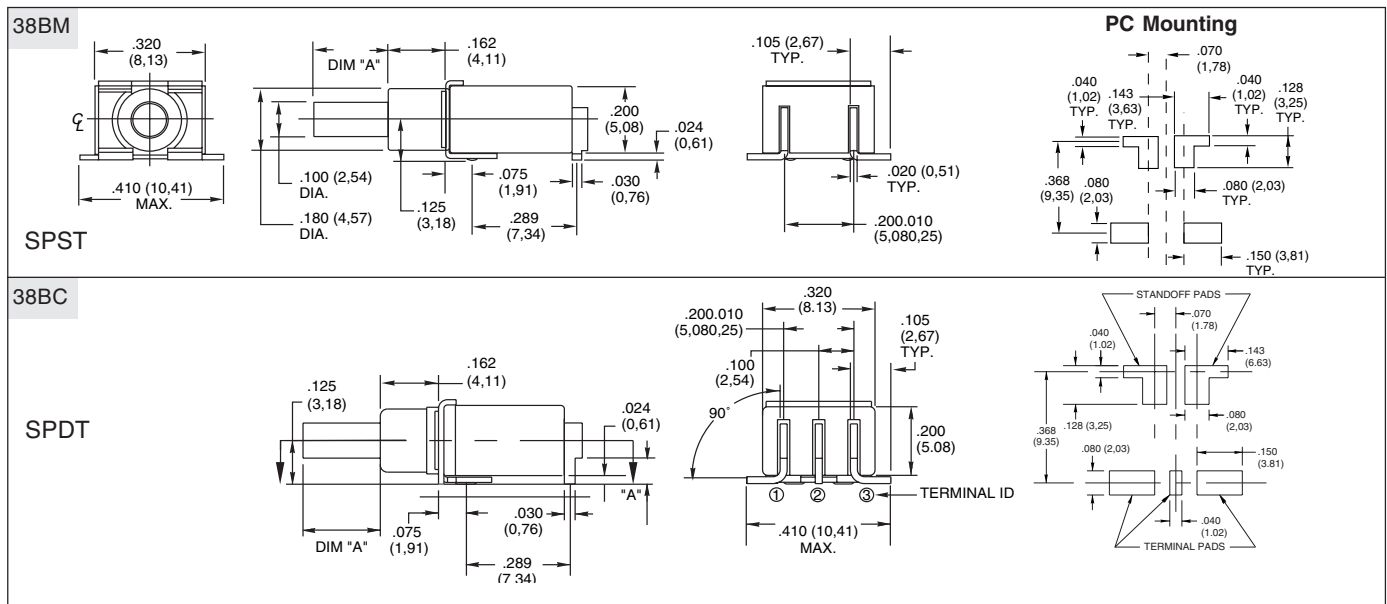
FEATURES

- Surface Mount Process Compatible
- Sealed Construction
- SPST and SPDT, Momentary Contact
- Extended or Flush Plunger
- Drop-In Replacement for Industry Standard



SPECIFICATIONS

DIMENSIONS In inches (and millimeters)



Rating Criteria

Operating Life: 80,000 make-and-break cycles at full load

Contact Rating (resistive load):

Gold Contacts: 0.4 VA maximum at 20 Vac or Vdc maximum

Silver Contacts: I.O. Amps maximum at 120 Vac or 28 Vdc

Contact Resistance: Below 20 milliohms typical initial at 2-4 Vdc, 100 mA

Insulation Resistance: 1000 megaohms min.
Voltage Breakdown: 1000 Vrms minimum at sea level

Operating Temperature: -30°C to +85°C

Solderability: Per MIL-STD-202F, Method 208D, or EIA RS-186E Method 9 (1 hour steam aging)

Materials and Finishes

Base and Cover: Thermoplastic (UL 94V-0)

Plunger: Thermoplastic (UL 94V-0), with standard internal o-ring seal

Terminals: Copper alloy, gold plate over nickel plate

Spring: Plated Music Wire

Contact System: Copper alloy, gold or silver plate (as specified) over nickel plate

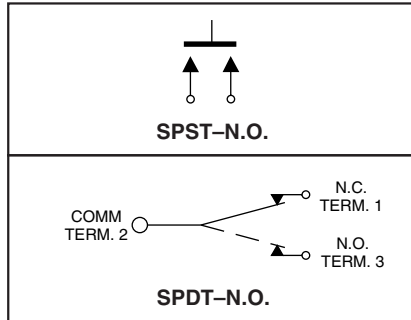
Switch Support: Brass, tin-plated

Available from your local Grayhill Distributor.

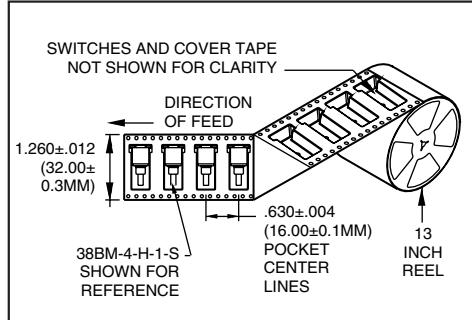
For prices and discounts, contact a local Sales Office, an authorized local Distributor or Grayhill.

SERIES 38BM AND 38BC
Sub-Miniature Surface Mount

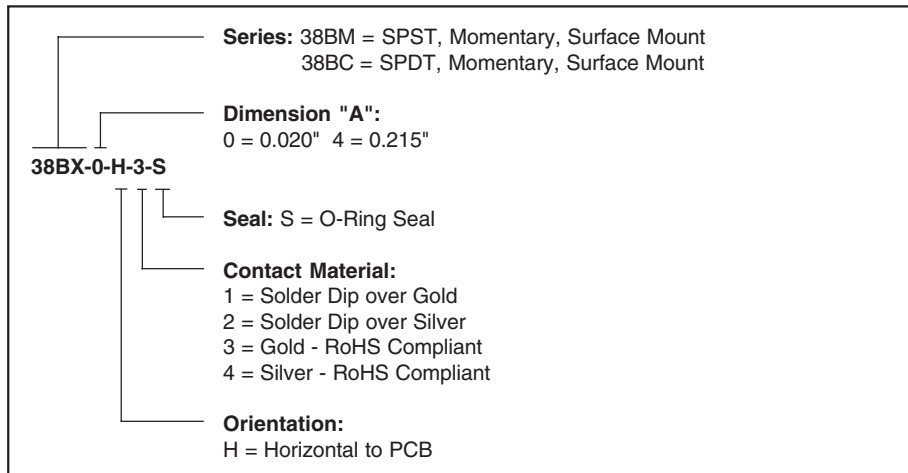
CIRCUITRY



TAPE AND REEL PACKAGING



ORDERING INFORMATION

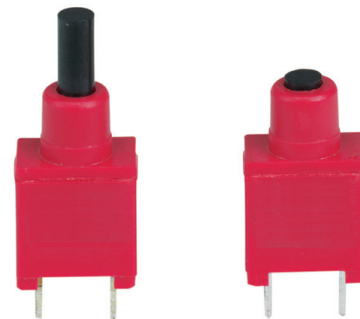


Pushbutton Switches

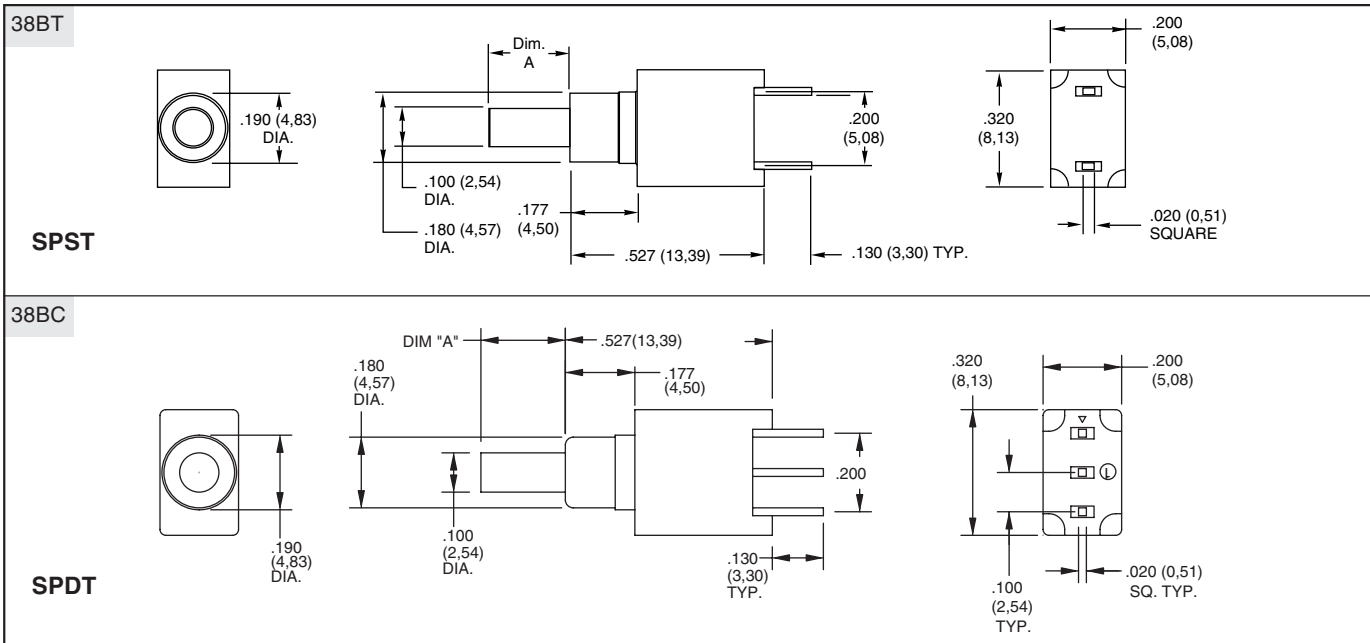
SERIES 38BT and 38BC
Sub-Miniature Vertical PC Mount

FEATURES

- Actuates at Right Angle to Printed Circuit Board
- Drop-In Replacement for Industry Standard
- SPST and SPDT, Momentary Contact
- Sealed Plunger Option



DIMENSIONS In inches (and millimeters)



Unless otherwise indicated, tolerances are ± .010 (0,25)

SPECIFICATIONS

Electrical Ratings

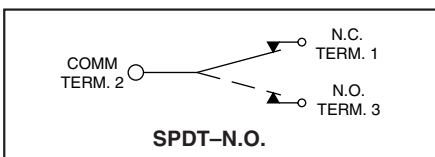
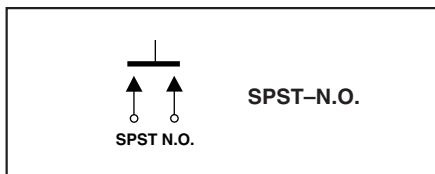
Operating Life: 80,000 make-and-break cycles at full load
Contact Rating (resistive load):
Gold Contacts: 0.4 VA maximum at 20 Vac or Vdc
Silver Contacts: 1.0 Amp maximum at 120 Vac or 28 Vdc
Contact Resistance: Below 20 milliohms typical initial at 2-4 Vdc, 100 mA, for both silver and gold-plated contacts

Insulation Resistance: 1000 megaohms minimum
Voltage Breakdown: 1000 Vrms minimum at sea level
Operating Temperature: -30°C. to +85°C.
Solderability: Per MIL-STD-202F, Method 208D, or EIA RS-186E, Method 9 (1 hour steam aging)

Materials and Finishes

Base and Cover: Thermoplastic (UL 94V-0)
Plunger: Thermoplastic (UL 94V-0), (S versions include an internal o-ring seal)
Terminals: Copper alloy, gold or silver plate (as specified) over nickel plate
Spring: Plated music wire
Contact System: Copper alloy, gold or silver plate (as specified) over nickel plate

CIRCUITRY



ORDERING INFORMATION

Series: 38BT = SPST, Momentary, Thru-Hole
 38BC = SPDT, Momentary, Thru-Hole
Dimension A: 0 = 0.020" 4 = 0.215"
Seal: S = O-Ring Seal, N = No Seal
Contact Material: 1 = Solder Dip over Gold
 2 = Solder Dip over Silver
 3 = Gold - RoHS Compliant
 4 = Silver - RoHS Compliant
Orientation: V = Vertical to PCB

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

Pushbutton Switches

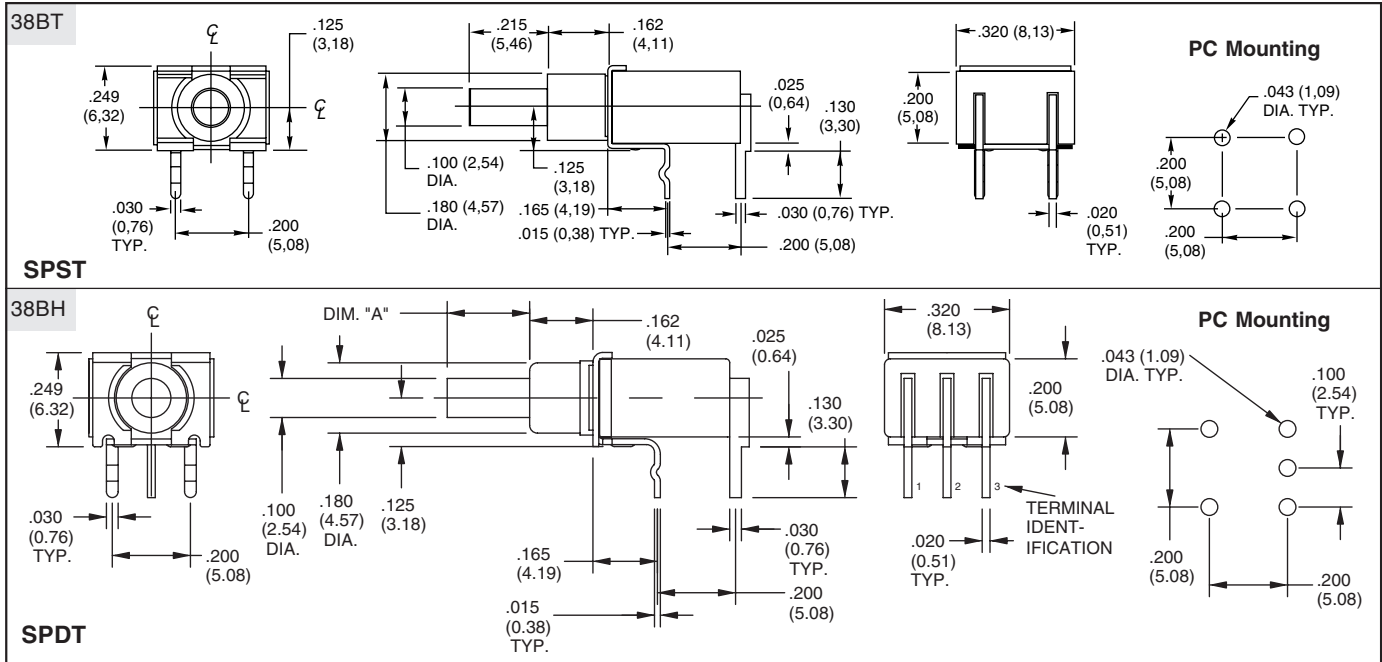
SERIES 38BT and 38BH Sub-Miniature Horizontal PC Mount

FEATURES

- Drop-In Replacement for Industry Standard
- Sealed Plunger Option
- Printed Circuit Board Mount
- SPST and SPDT, Momentary Contact



DIMENSIONS In inches (and millimeters)



SPECIFICATIONS

Rating Criteria

Operating Life: 80,000 make-and-break cycles at full load

Contact Rating (resistive load):

Gold Contacts: 0.4 VA maximum at 20 Vac or Vdc maximum

Silver Contacts: 1.0 Amp maximum at 120 Vac or 28 Vdc

Contact Resistance: Below 20 milliohms typical initial at 2-4 Vdc, 100 mA

Insulation Resistance: 1000 megaohms minimum

Voltage Breakdown: 1000 Vrms minimum at sea level

Operating Temperature: -30°C. to +85°C.

Solderability: Per MIL-STD-202F, Method 208D, or EIA RS-186E Method 9 (1 hour steam aging)

Materials and Finishes

Base and Cover: Thermoplastic (UL 94V-0)

Plunger: Thermoplastic (UL 94V-0), (S versions include an internal o-ring seal)

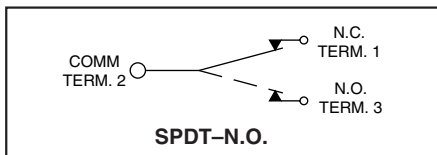
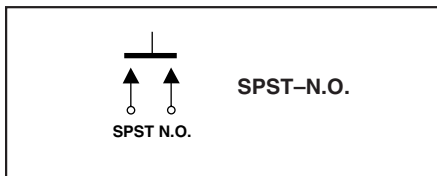
Terminals: Copper alloy, gold or silver plate (as specified) over nickel plate

Spring: Plated Music Wire

Contact System: Copper alloy, gold or silver plate (as specified) over nickel plate

Switch Support: Brass, tin-plated

CIRCUITRY



ORDERING INFORMATION

38BX-4-H-3-N

Series: 38BT = SPST, Momentary, Thru Hole
38BH = SPDT, Momentary, Thru Hole

Dimension A: 0 = 0.020" 4 = 0.215"

Seal: S = O-Ring Seal, N = No Seal

Contact Material: 1 = Solder Dip over Gold
2 = Solder Dip over Silver
3 = Gold - RoHS Compliant
4 = Silver - RoHS Compliant

Orientation: H = Horizontal to PCB

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



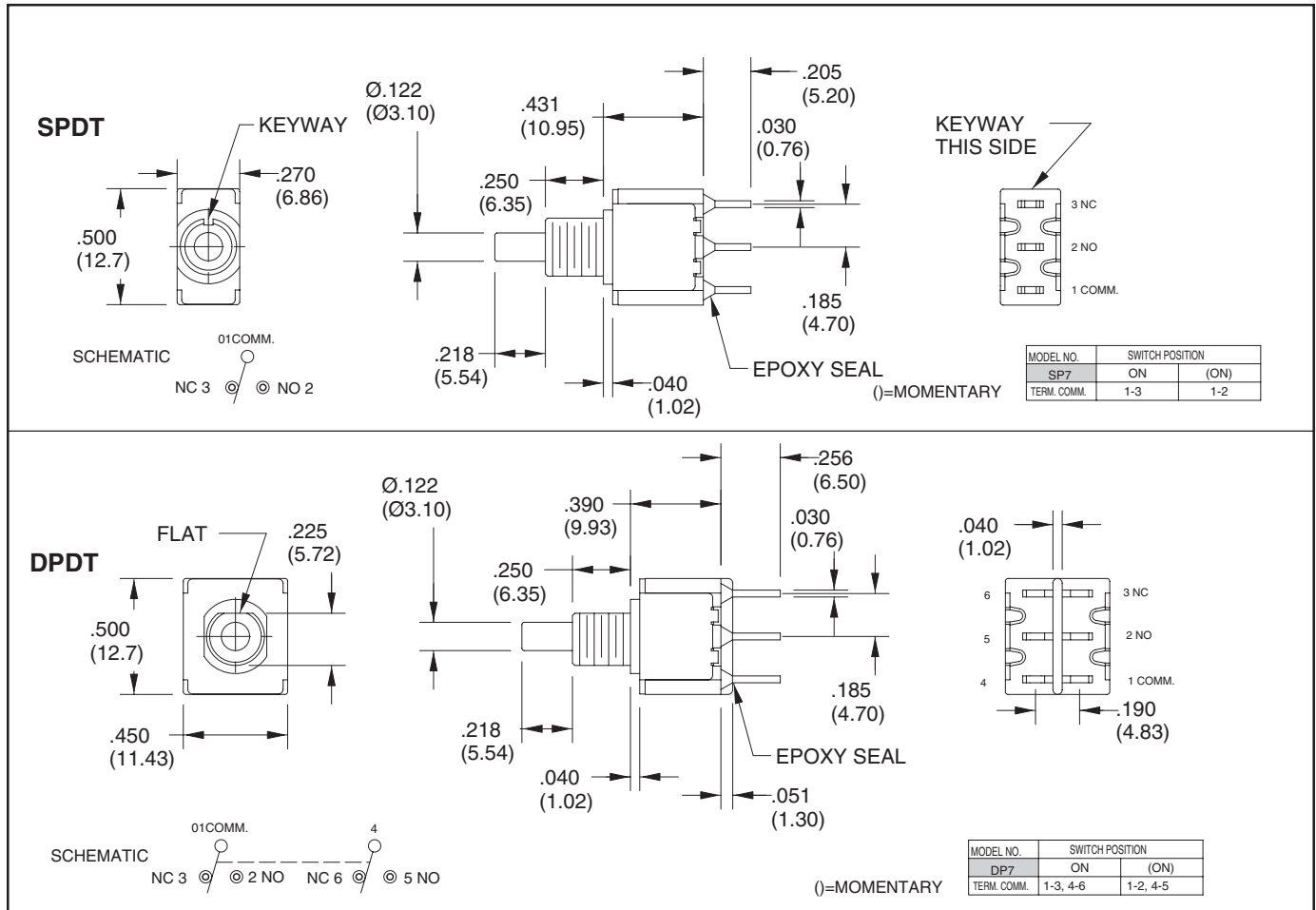
SERIES 38C Miniature Pushbutton Switches

FEATURES

- SPDT and DPDT Circuitry
- Choice of Bushings, and Terminations
- Caps and Frames Available
- UL Recognized



DIMENSIONS IN INCHES (AND MILLIMETERS)

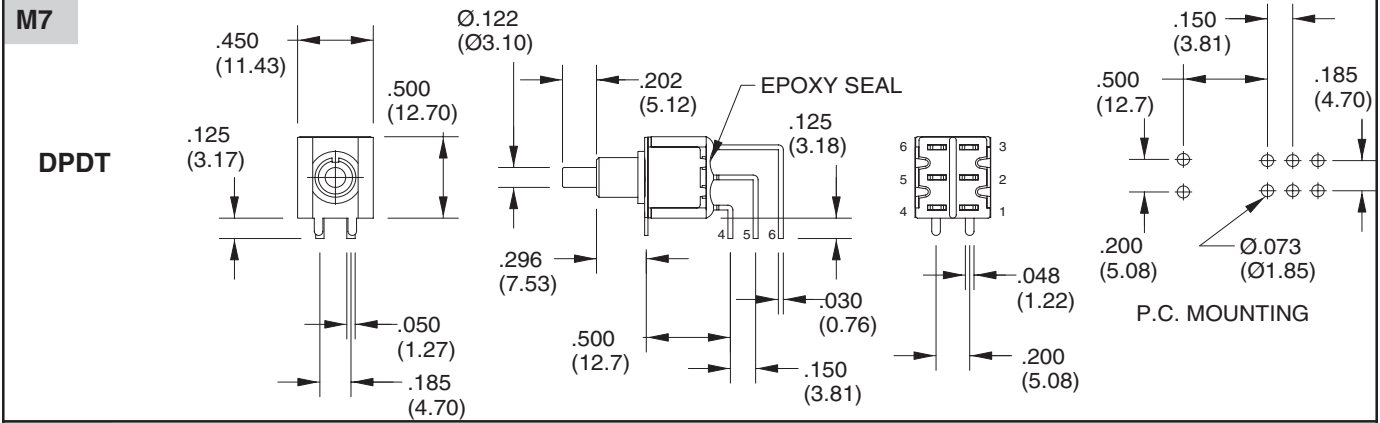


TERMINATION OPTIONS IN INCHES (AND MILLIMETERS)

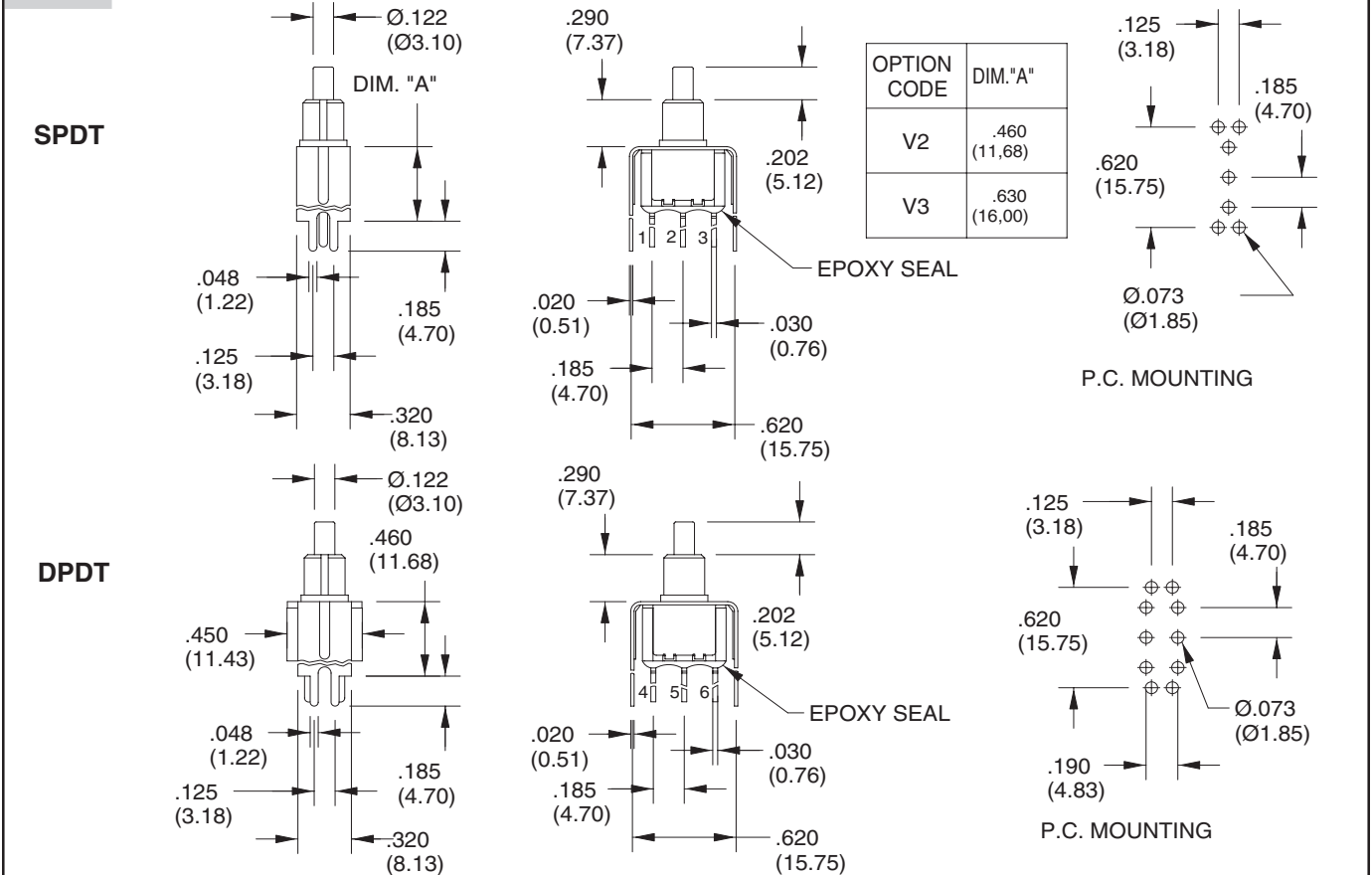
<p>M1 Solder Lug (Std)</p> <p>THK. .030 (0.76)</p>	<p>M2 P. C. Mount</p> <p>THK. .030 (0.76)</p>	<p>M3 P. C. Mount, Quick Connect</p> <p>.030 (0.76) THK.</p>	<p>WX Wire Wrap</p> <table border="1"> <thead> <tr> <th>OPTION CODE</th> <th>DIM. "A"</th> </tr> </thead> <tbody> <tr> <td>W1</td> <td>.750(19.05)</td> </tr> <tr> <td>W2</td> <td>.964(24.48)</td> </tr> <tr> <td>W3</td> <td>.425(10.80)</td> </tr> <tr> <td>W4</td> <td>1.062(26.97)</td> </tr> </tbody> </table>	OPTION CODE	DIM. "A"	W1	.750(19.05)	W2	.964(24.48)	W3	.425(10.80)	W4	1.062(26.97)
OPTION CODE	DIM. "A"												
W1	.750(19.05)												
W2	.964(24.48)												
W3	.425(10.80)												
W4	1.062(26.97)												
<p>M6 Right Angle P. C. Mount, Horizontal</p> <p>SPDT</p> <p>DPDT</p> <p>P.C. MOUNTING</p> <p>P.C. MOUNTING</p>													
<p>M7 Right Angle P.C. Mount, Vertical</p> <p>SPDT</p> <p>P.C. MOUNTING</p>													

Pushbutton Switches

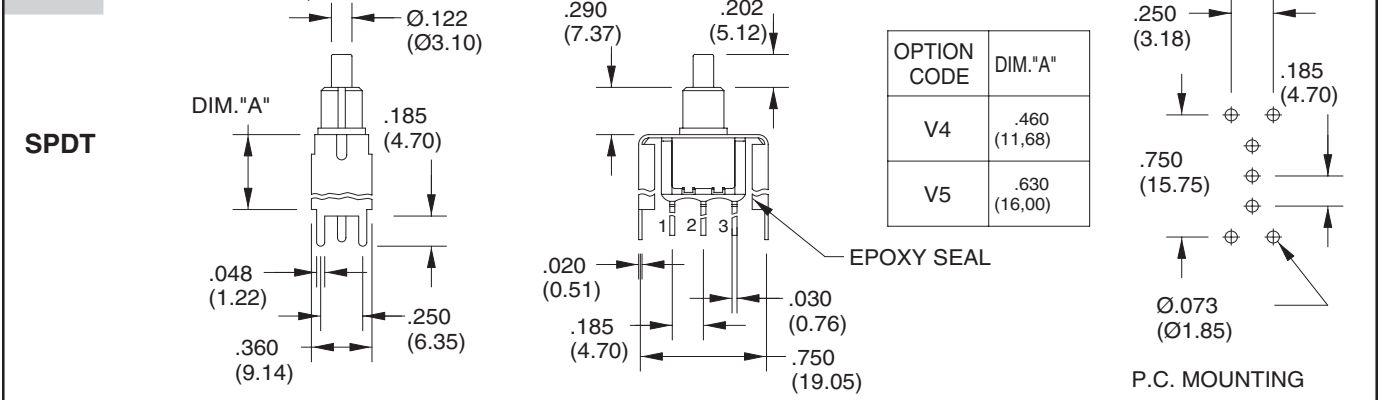
TERMINATION OPTIONS (CONT.) IN INCHES (AND MILLIMETERS)



V2-V3 Vertical Bracket, P. C. Mount

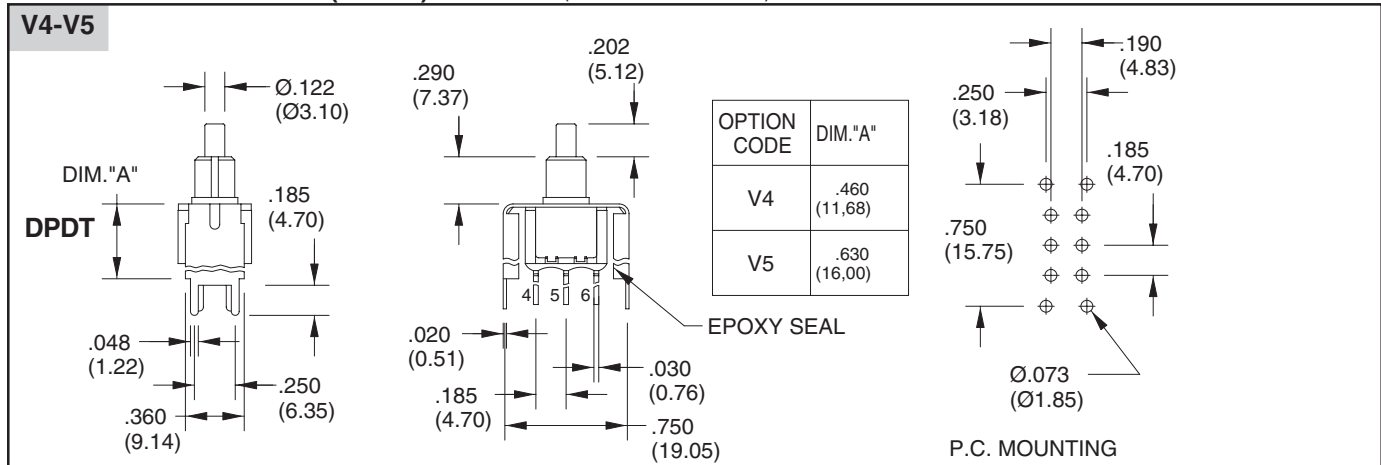


V4-V5 Vertical Bracket, P. C. Mount



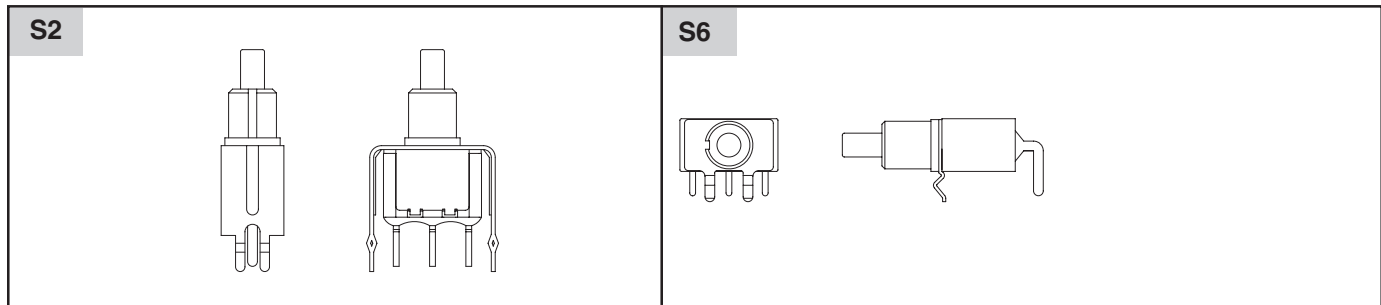
Pushbutton Switches

TERMINATION OPTIONS (CONT.) IN INCHES (AND MILLIMETERS)

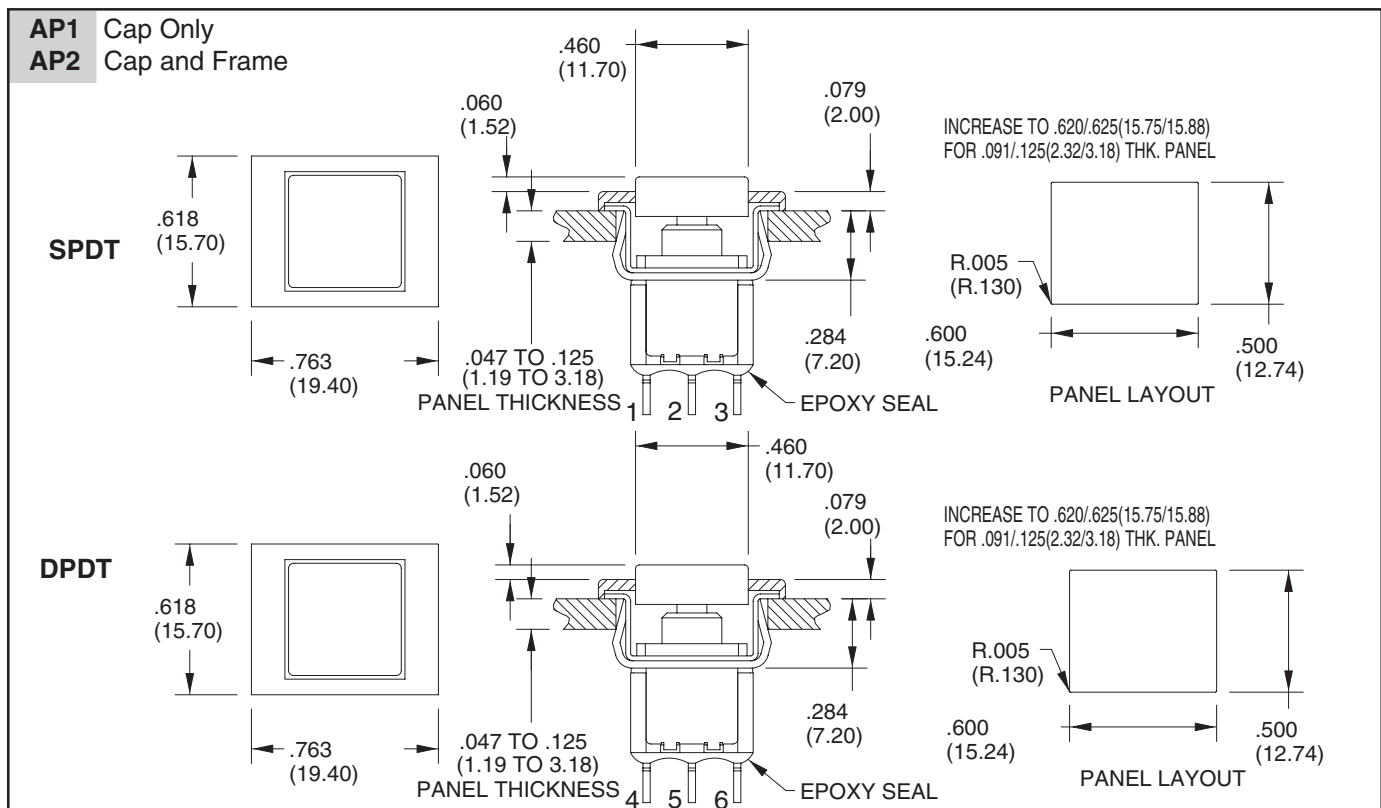


Snap-in Termination Options

(Snap-in termination options have the same PC layout as M2, M6 and M7 options)

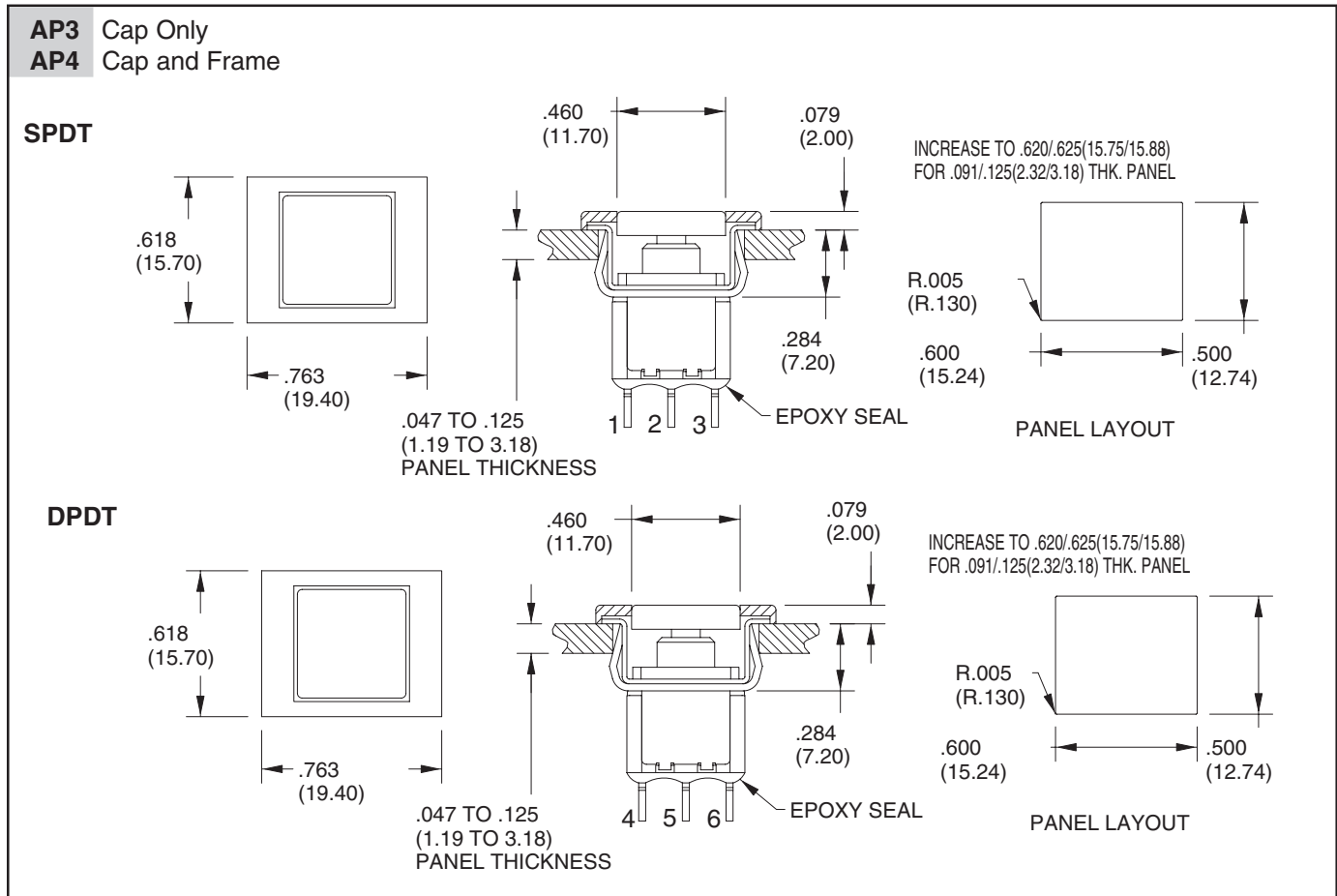


BUSHING OPTIONS IN INCHES (AND MILLIMETERS)
FOR PANEL MOUNTING



Pushbutton Switches

BUSHING OPTIONS IN INCHES (AND MILLIMETERS) FOR PANEL MOUNTING



SPECIFICATIONS

RATINGS

Contact Rating: Q & G option - 3A with resistive load @ 125 VAC or 28 VDC; 1.5A with resistive load @ 250 VAC. R option - 0.4 VA max @ 20 Vmax (AC or DC)

Electrical Life: 50,000 make-and-break cycles at full load

Travel: .050 ± .010

Contact Resistance: 20 milliohms max. initial @ 2-4 VDC, 100 mA

Insulation Resistance: 1,000 megaohms minimum

Dielectric Strength: 1,000 V RMS @ sea level

Operating Temperature: -30°C to 85°C

MATERIALS

Case: Diallyl phthalate (DAP) (UL94V-0)

Plunger: Glass filled nylon or glass filled polyester

Bushing: Brass, nickel plated

Housing: Stainless steel

Terminal/Switch Support: Brass, electrotin plated

Terminal Seal: Epoxy

ORDERING INFORMATION

SERIES	MODEL NO.	PLUNGER	BUSHING	TERMINATION	CONTACT	SEAL
38C	SP7		B10	M1	Q	T
38C = Miniature Pushbutton Switches	Options: SP7, DP7 (see models for switching positions)	Options: Blank=std as shown in dwg 0 = 0.0 (Flush) 1 = .205 (5.02) 2 = .079 (2.00)	Options: AP1, AP2, AP3, AP4, B10, B11, B21, B21 (see bushing options)	Options: M1, M2, M3, M6, M7, S2, S6, V2, V3, V4, V5, W1, W2, W3, W4 (see termination options)	R = Copper alloy, gold plate over nickel plate. Q = Copper alloy, silver plated G=Gold plate over silver plate	T = Lead Free and RoHS Compliant

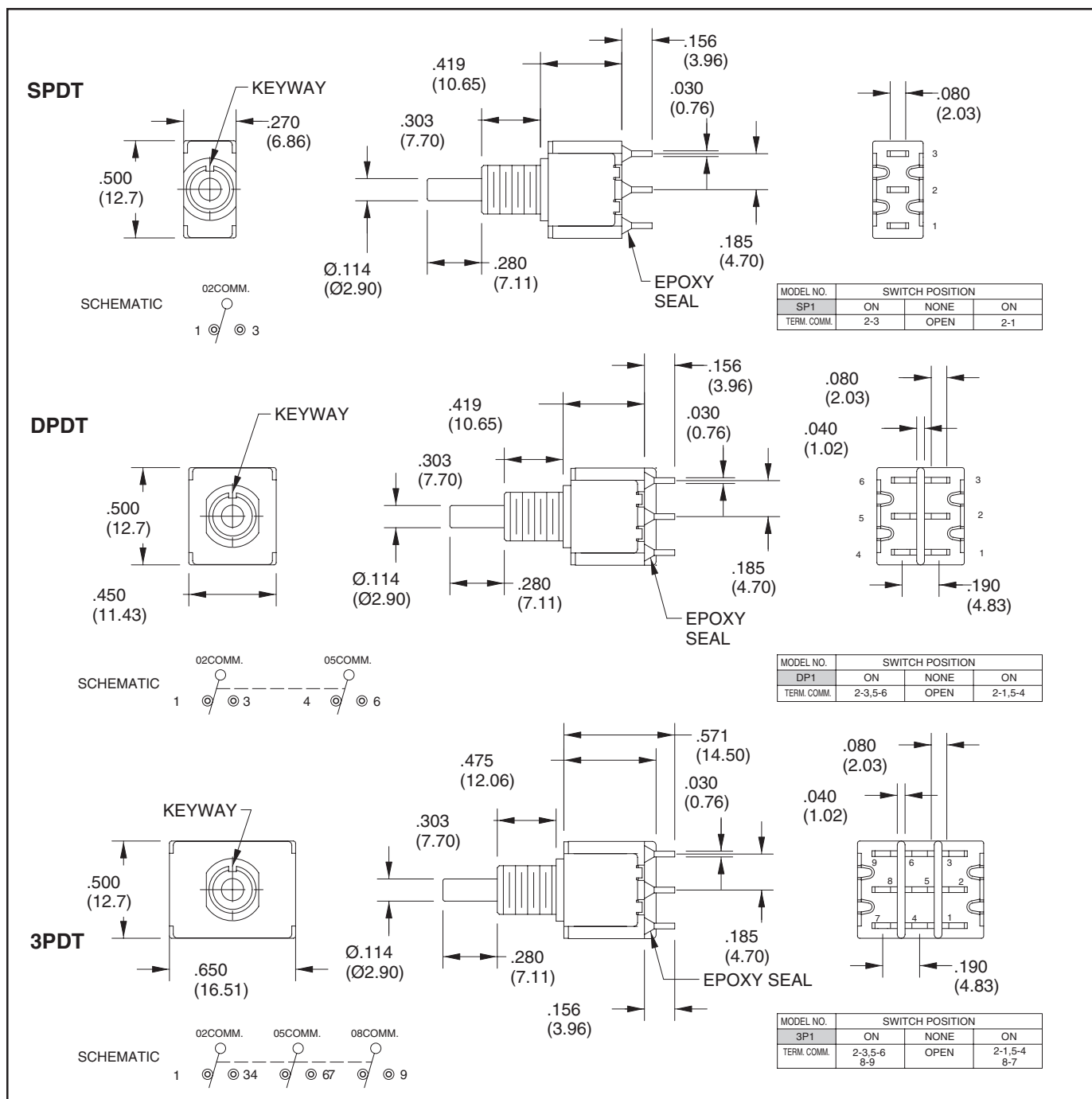
SERIES 38D
Alternate Action
Pushbutton Switches

FEATURES

- SPDT, DPDT, 3PDT, 4PDT Circuitry
- Choice of Plunger Length, Bushings, and Terminations
- UL Recognized

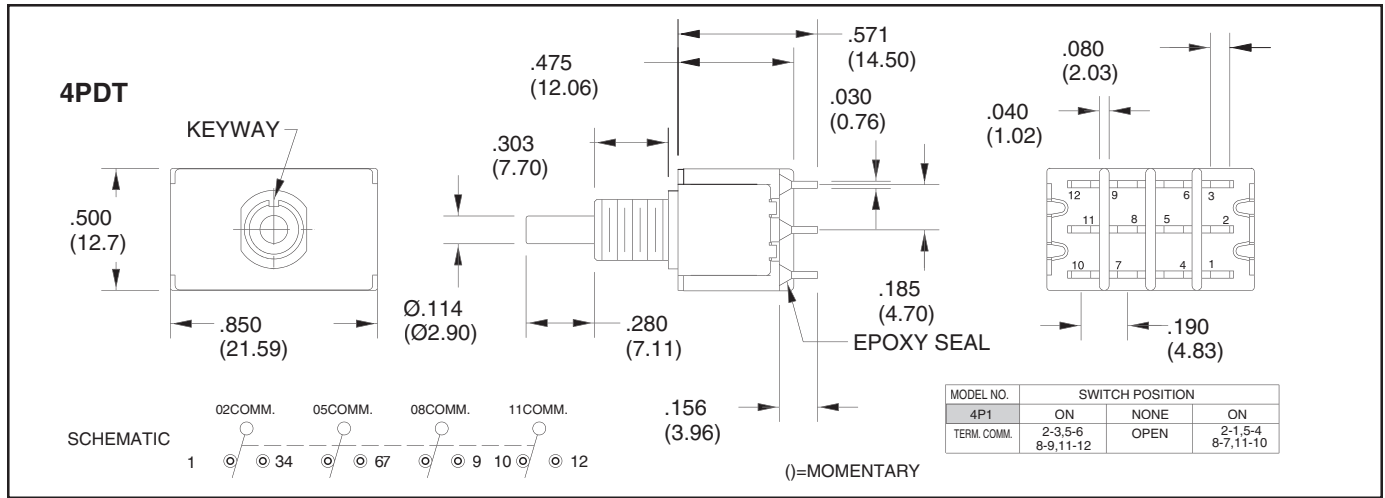


MODELS IN INCHES (AND MILLIMETERS)

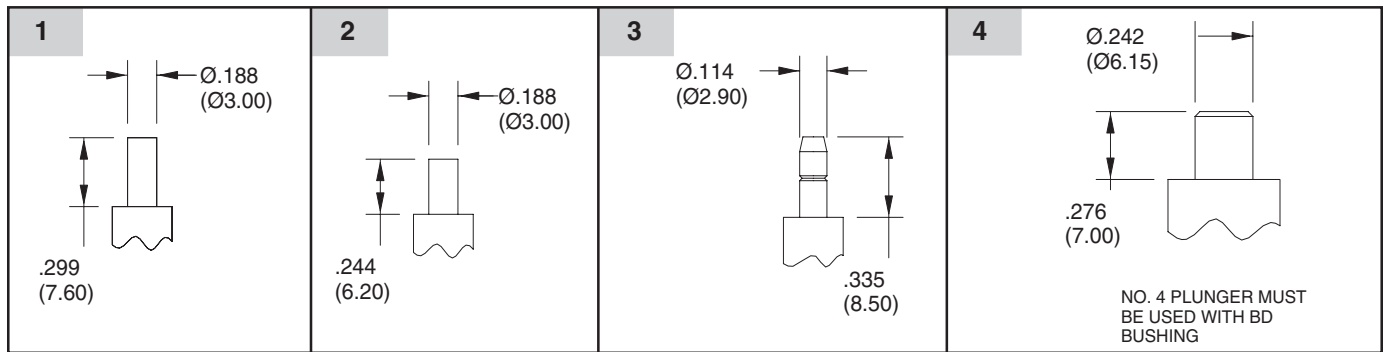


Pushbutton Switches

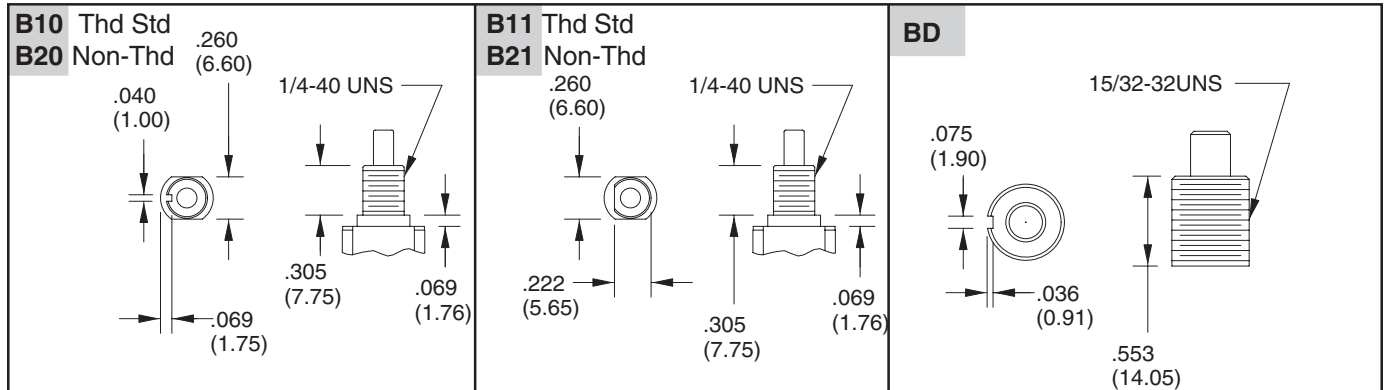
TERMINATION OPTIONS IN INCHES (AND MILLIMETERS)



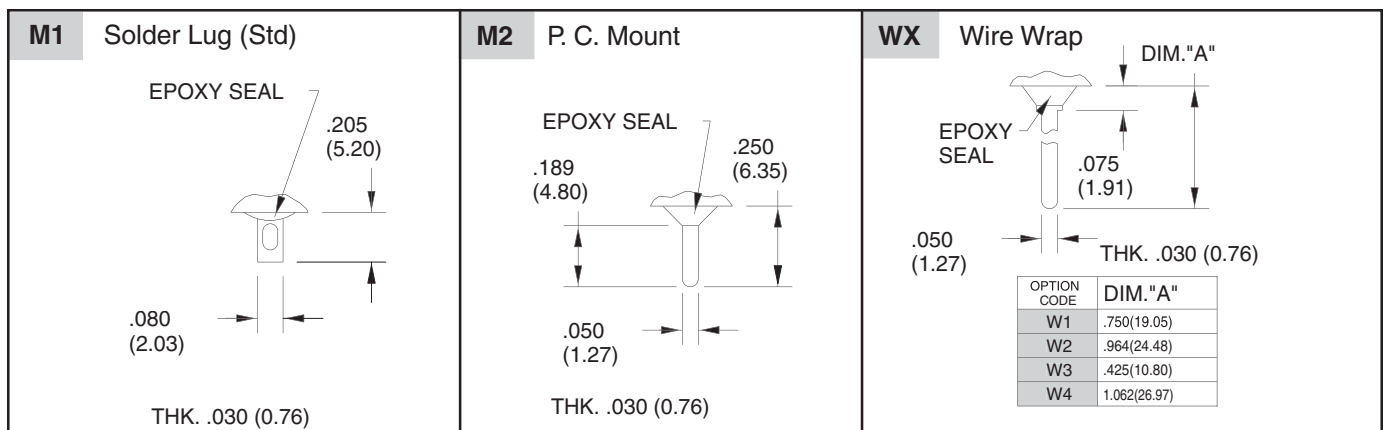
PLUNGER OPTIONS IN INCHES (AND MILLIMETERS)



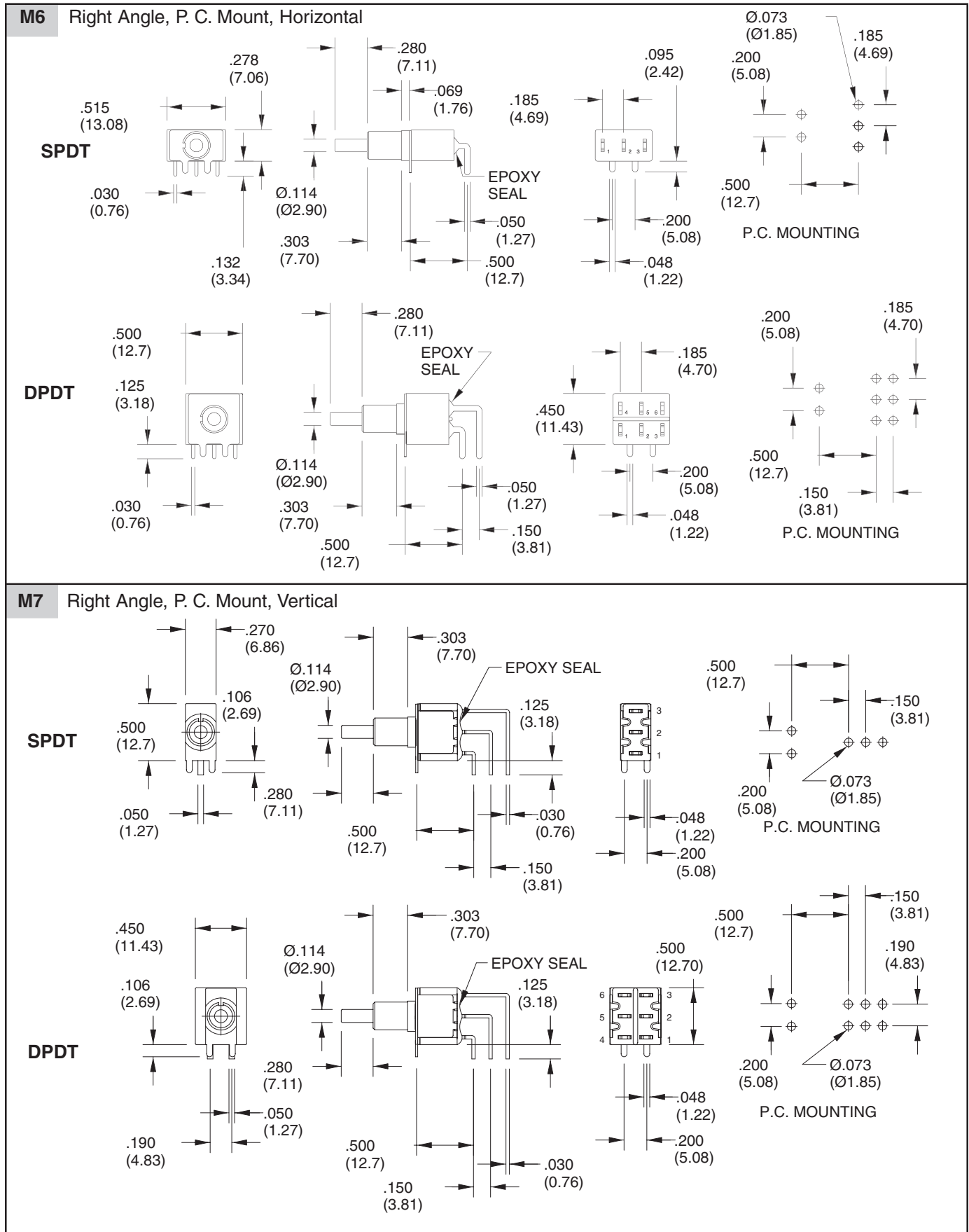
BUSHING OPTIONS IN INCHES (AND MILLIMETERS)



TERMINATION OPTIONS IN INCHES (AND MILLIMETERS)

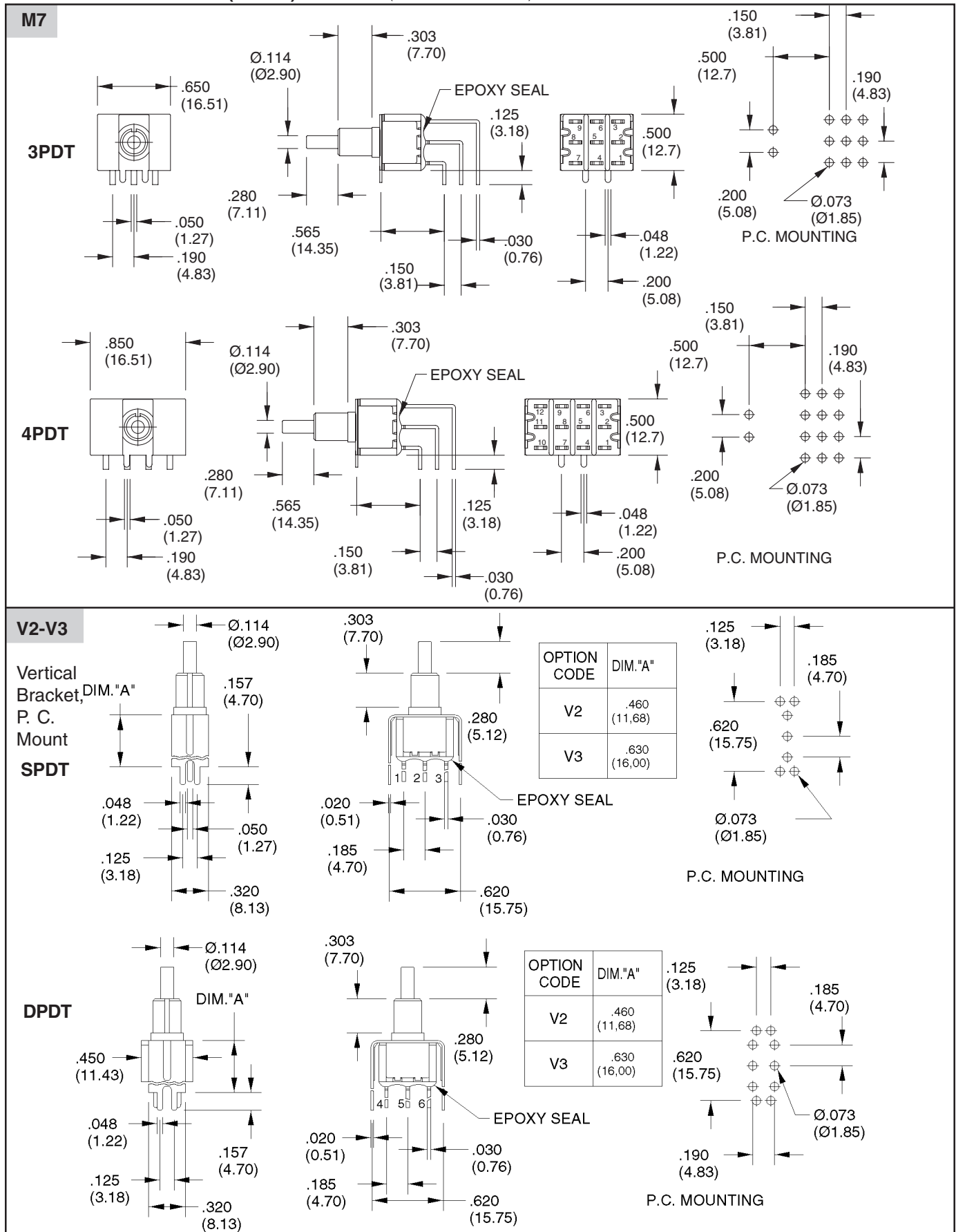


TERMINATION OPTIONS (CONT.) IN INCHES (AND MILLIMETERS)

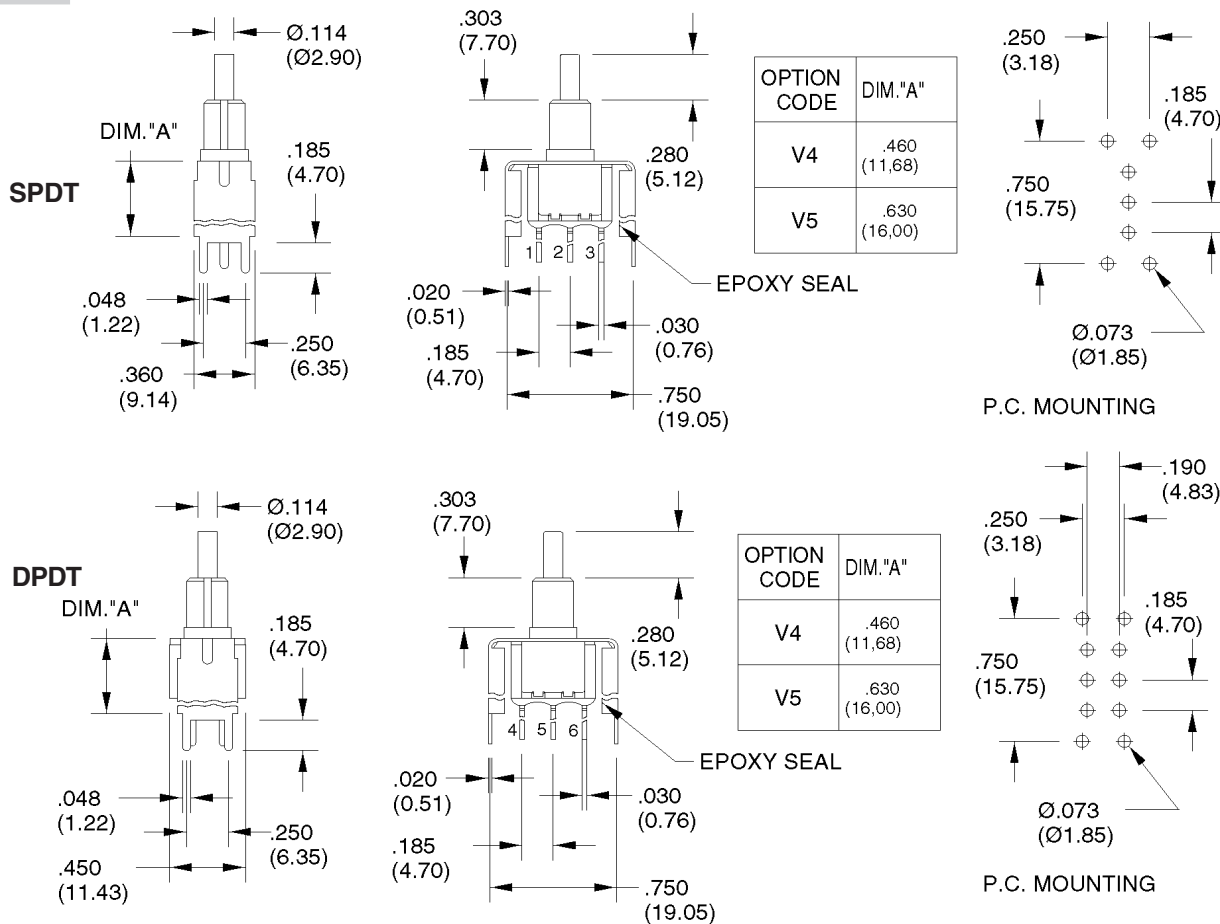


Pushbutton Switches

TERMINATION OPTIONS (CONT.) IN INCHES (AND MILLIMETERS)



V4-V5 Vertical Bracket, P. C. Mount



Pushbutton Switches

SPECIFICATIONS

RATINGS

Contact Rating: Q & G option - 6A @ 125 VAC or 28 VDC or 28 VDC; 3A @ 250 VAC. R option - 0.4 VA max @ 20 Vmax (AC or DC)
Electrical Life: 50,000 make-and-break cycles at full load

Contact Resistance: 10 milliohms max. initial @ 2-4 VDC, 100 mA
Insulation Resistance: 1,000 megaohms minimum
Dielectric Strength: 1,500 V RMS @ sea level
Operating Temperature: -30°C to 85°C

MATERIALS

Case: Diallyl phthalate (DAP) (UL94V-0)
Plunger: Glass filled nylon or glass filled polyester
Bushing: Zinc, nickel plated
Housing: Stainless steel
Terminal Seal: Epoxy

ORDERING INFORMATION

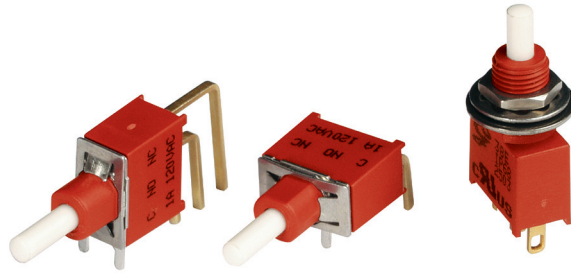
SERIES	MODEL NO.	PLUNGER	BUSHING	TERMINATION	CONTACT	SEAL
38D	SP1	1	B10	M1	Q	T
38D = Alternate Action Pushbutton Switches	Options: SP1, DP1, 3P1, 4P1 (see models for switching positions)	Options: 1, 2, 3, 4 (see plunger options)	Options: B10, B11, B20, B21, BD (see bushing options)	Options: M1, M2, M6, M7, S2, S6 V2, V3, V4, V5, W1, W2, W3, W4 (see termination options)	R = Copper alloy, gold plate over nickel plate. Q = Copper alloy, silver plated G=Gold plate over silver plate	T = Lead Free and RoHS Compliant

SERIES 38E

Sealed Snap Action Miniature Pushbutton Switches

FEATURES

- SPDT and DPDT Circuitry
- Choice of Bushings, and Terminations
- UL Recognized
- IP-68 Degree of Protection
- RoHS Compliant



MODELS IN INCHES (AND MILLIMETERS)

SPDT

MODEL NO.	SWITCH POSITION	
WSP7	ON	(ON)
TERM. COMB.	1-3	1-2

()=MOMENTARY

DPDT

MODEL NO.	SWITCH POSITION	
WDP7	ON	(ON)
TERM. COMB.	1-3, 4-6	1-2, 4-5

()=MOMENTARY

PLUNGER OPTIONS IN INCHES (AND MILLIMETERS)

DIM."A"

FOR B1 BUSHING

OPTION CODE	DIM."A"
1	.173(4.40)
2	.220(5.60)
3	.087(2.20)

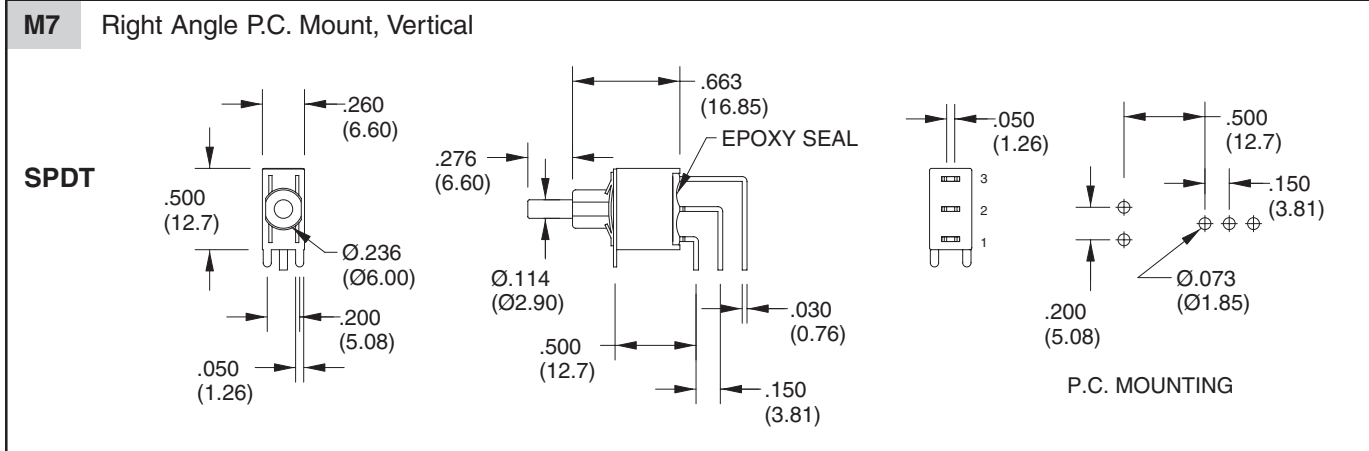
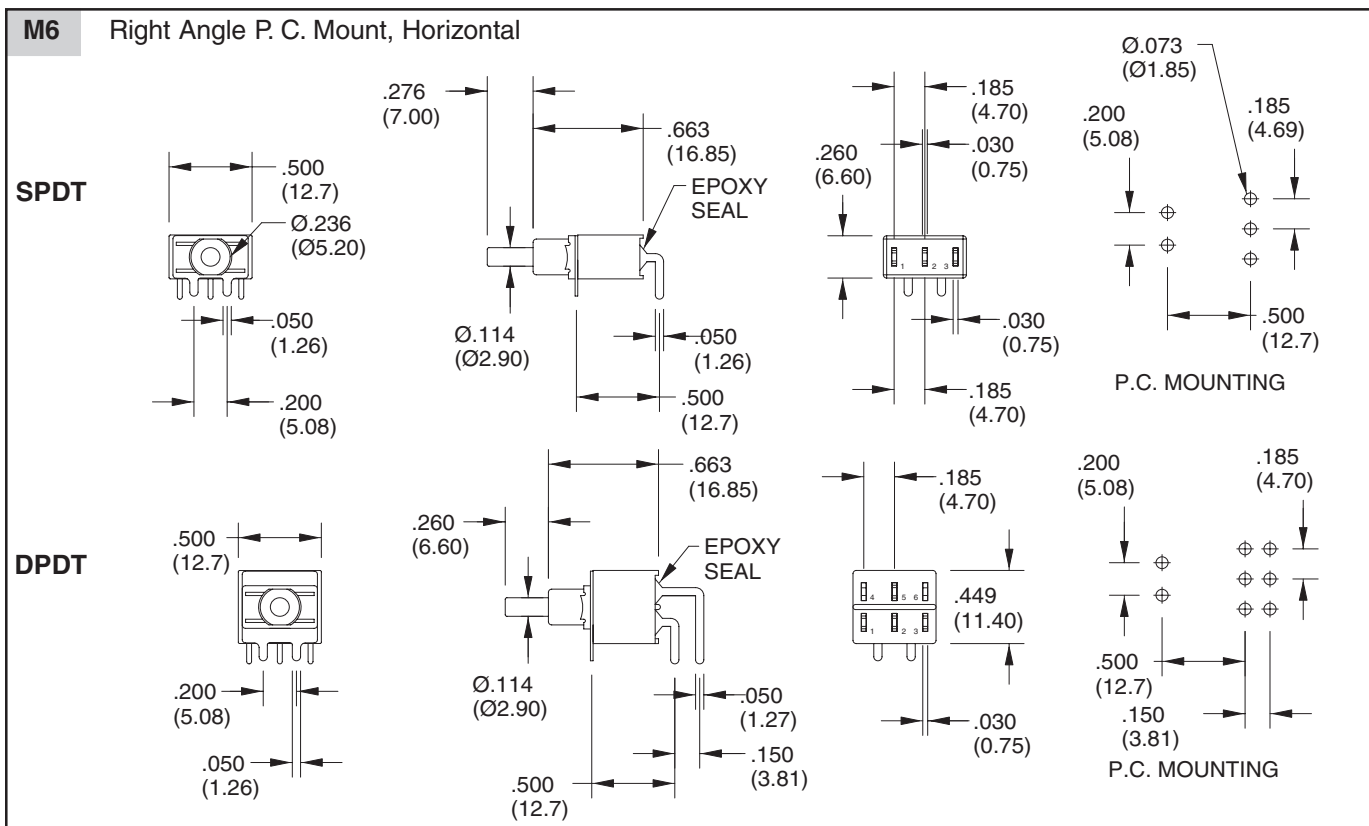
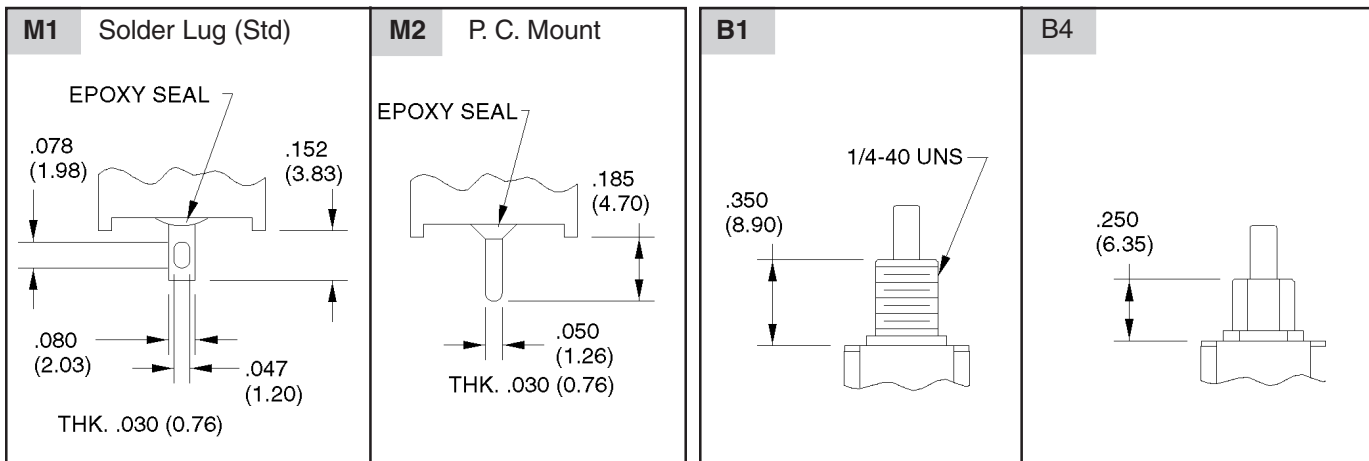
DIM."A"

FOR B4 BUSHING

OPTION CODE	DIM."A"
1	.276(7.00)
2	.327(8.30)
3	.193(4.90)

BUSHING OPTIONS IN INCHES (AND MILLIMETERS)

TERMINATION OPTIONS IN INCHES (AND MILLIMETERS)

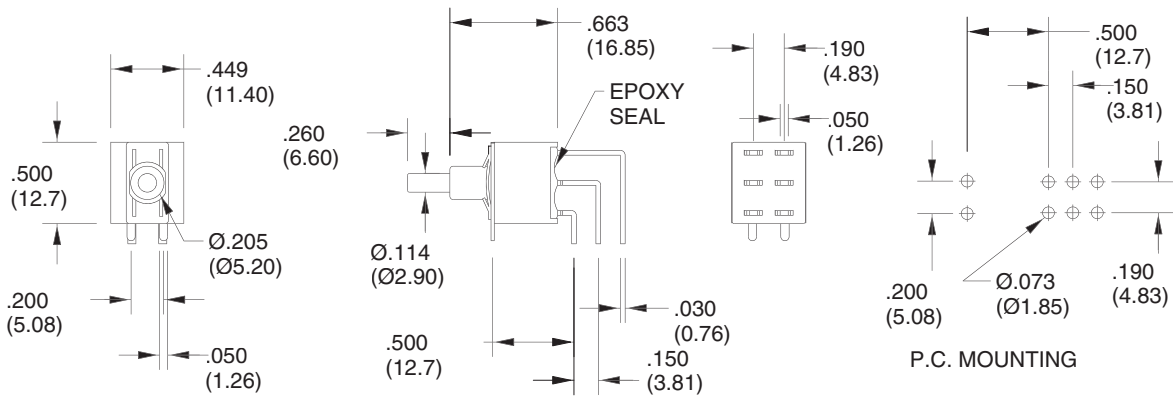


Pushbutton Switches

TERMINATION OPTIONS (CONT.) IN INCHES (AND MILLIMETERS)

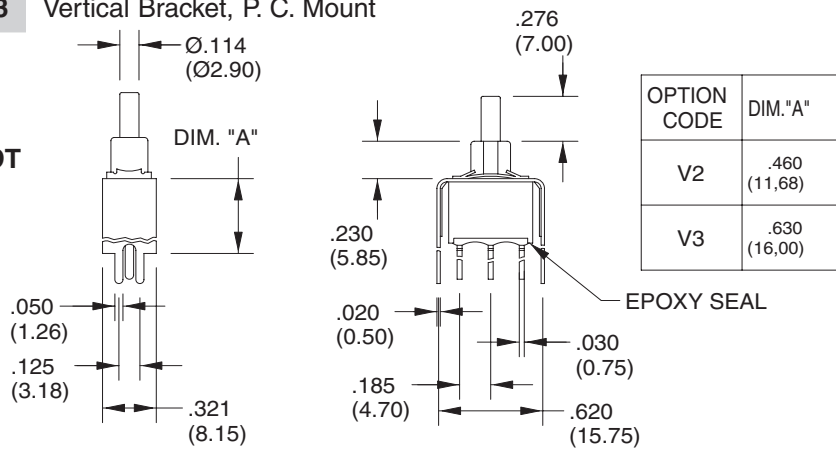
M7

DPDT

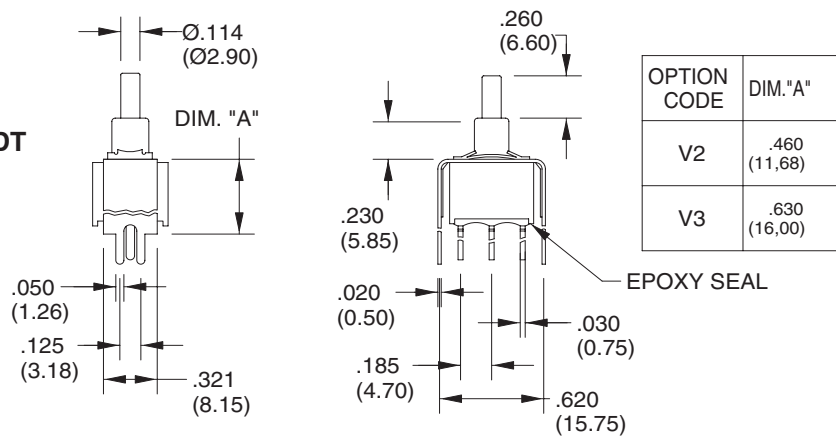


V2-V3 Vertical Bracket, P. C. Mount

SPDT

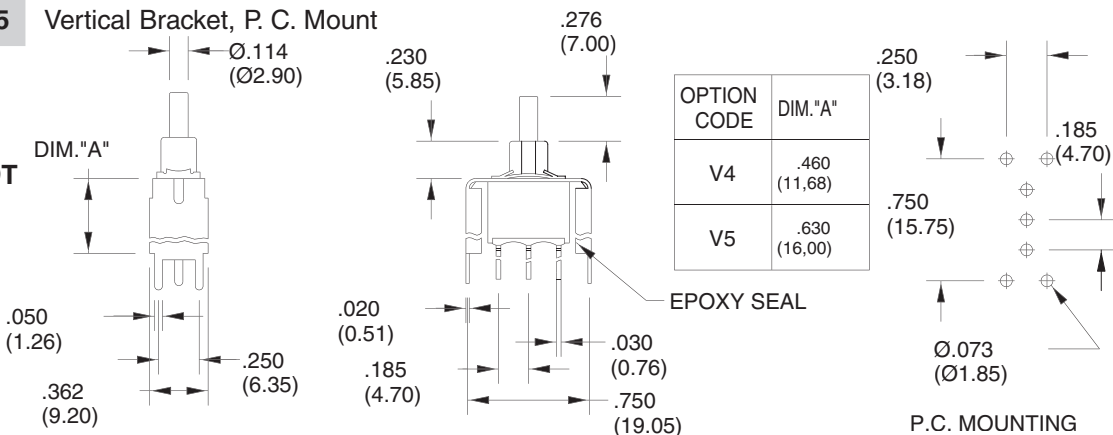


DPDT

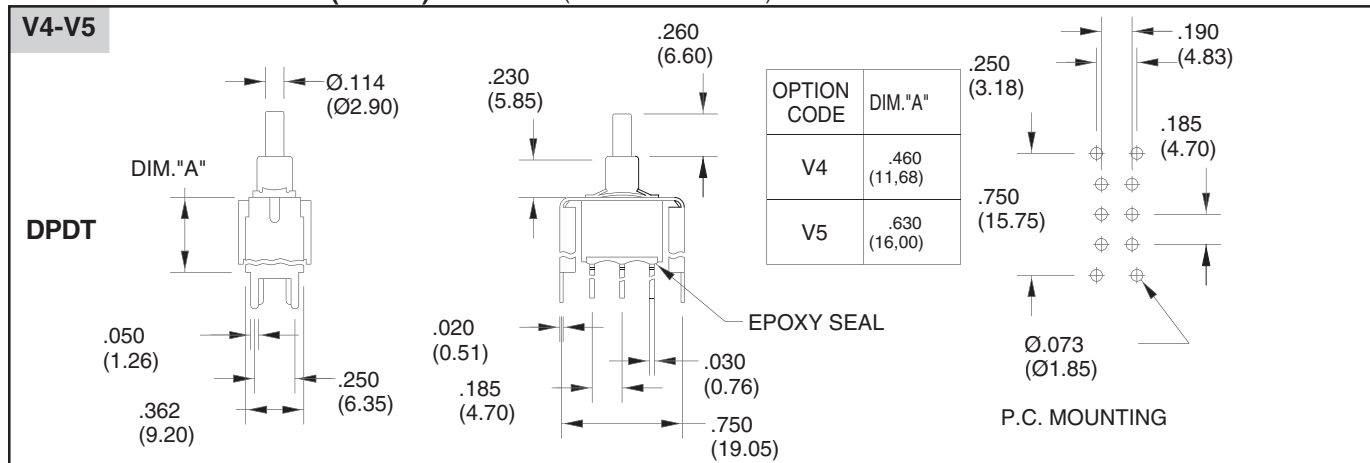


V4-V5 Vertical Bracket, P. C. Mount

SPDT

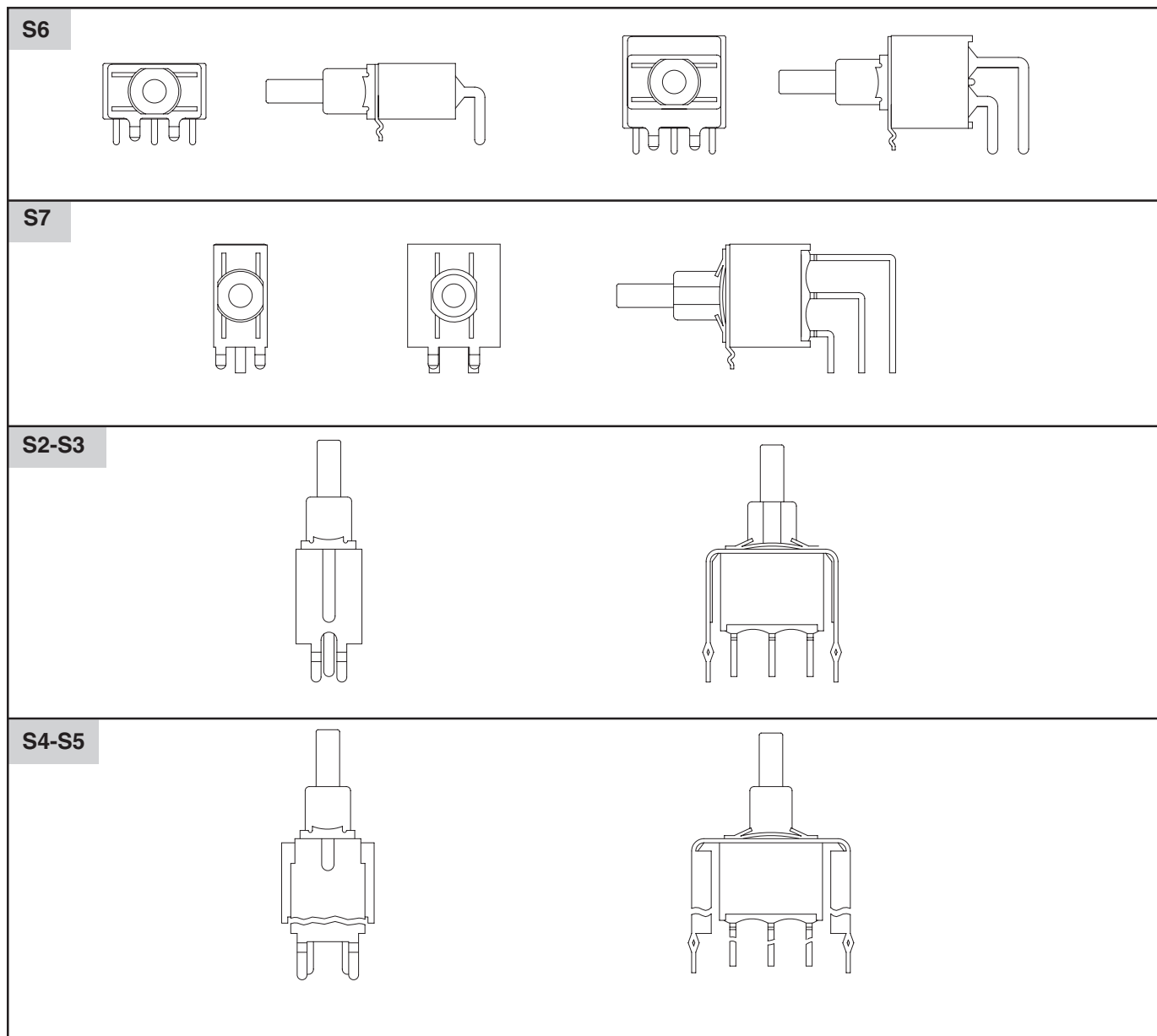


TERMINATION OPTIONS (CONT.) IN INCHES (AND MILLIMETERS)



Snap-in Termination Options

(Snap-in termination options have the same PC layout as M2, M6 and M7 options)



Pushbutton Switches

SPECIFICATIONS

RATINGS

Contact Rating: Q & G option - 1A with resistive load @ 125 VAC or 28 VDC.
 R option - 0.4 VA max @ 20 Vmax (AC or DC)
Electrical Life: 50,000 make-and-break cycles at full load
Travel: .040 ± .010

Contact Resistance: 10 milliohms max. initial @ 2-4 VDC, 100 mA
Insulation Resistance: 1,000 megaohms minimum
Dielectric Strength: 1,500 V RMS @ sea level
Operating Temperature: -30°C to 85°C

MATERIALS

Case: Glass filled Nylon 6/6 (UL94V-0)
Plunger: Glass filled nylon or glass filled polyester
Bushing: Brass, nickel plated
Housing: Stainless steel
Terminal/Switch Support: Brass or steel, electrotin plated
Terminal Seal: Epoxy

ORDERING INFORMATION

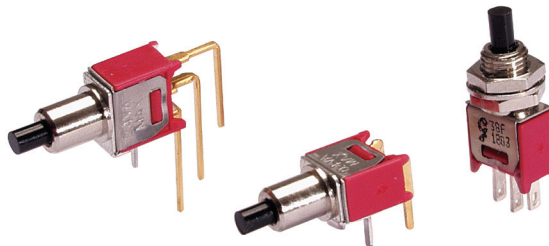
SERIES	MODEL NO.	PLUNGER	BUSHING	TERMINATION	CONTACT	SEAL
38E	WSP7	1	B1	M1	Q	T
38E = Sealed Snap Action Pushbutton Switches	Options: WSP7, WDP7 (see models for switching positions)	Options: 1, 2, 3 (see plunger options)	Options: B1, B4 (see bushing options)	Options: M1, M2, M6, M7, S2, S3, S4, S5, S6, S7 V2, V3, V4, V5, (see termination options)	R = Copper alloy, gold plate over nickel plate. Q = Copper alloy, silver plated G=Gold plate over silver plate	T = Lead Free and RoHS Compliant

Pushbutton Switches

SERIES 38F
Sub-Miniature
Pushbutton Switches

FEATURES

- Save Space and Weight
- SPDT and DPDT Circuitry
- Choice of Actuators, Bushings, and Terminations
- UL Recognized



MODELS IN INCHES (AND MILLIMETERS)

SPST

FLAT
Ø.240 (Ø6.10)
.173 (4.39)
10-48UNS
.155 (3.94)
Ø.100 (Ø2.54)
.214 (5.45)
.282 (7.18)
.200 (5.08)
.020 (0.51)
.110 (2.79)
.321 (8.16)
.059 (1.52)

SCHEMATIC

()=MOMENTARY

MODEL NO.	SWITCH POSITION	
SP9	OFF	(ON)

SPDT

FLAT
Ø.240 (Ø6.10)
.173 (4.39)
10-48UNS
.155 (3.94)
Ø.100 (Ø2.54)
.214 (5.45)
.282 (7.18)
.200 (5.08)
.020 (0.51)
.160 (4.06)
.110 (2.79)
.321 (8.16)
.059 (1.52)

SCHEMATIC

N.C.1
2COMM.
3 N.O.

()=MOMENTARY

MODEL NO.	SWITCH POSITION	
SP8	ON	(ON)
TERM. COMM.	2-1	2-3

BUSHING OPTIONS IN INCHES (AND MILLIMETERS)

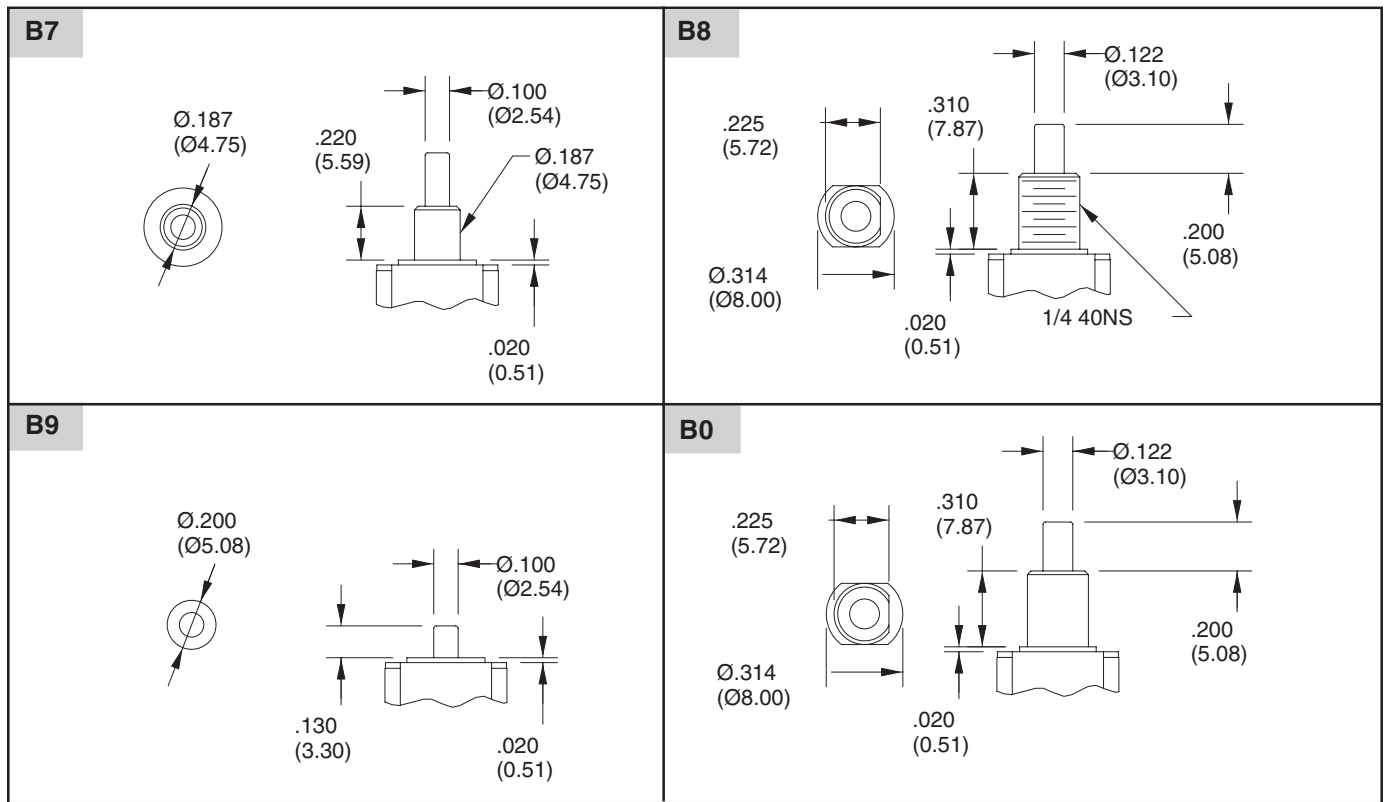
B5

Ø.100 (Ø2.54)
.220 (5.59)
10-48 UNS
.173 (4.39)
.020 (0.51)

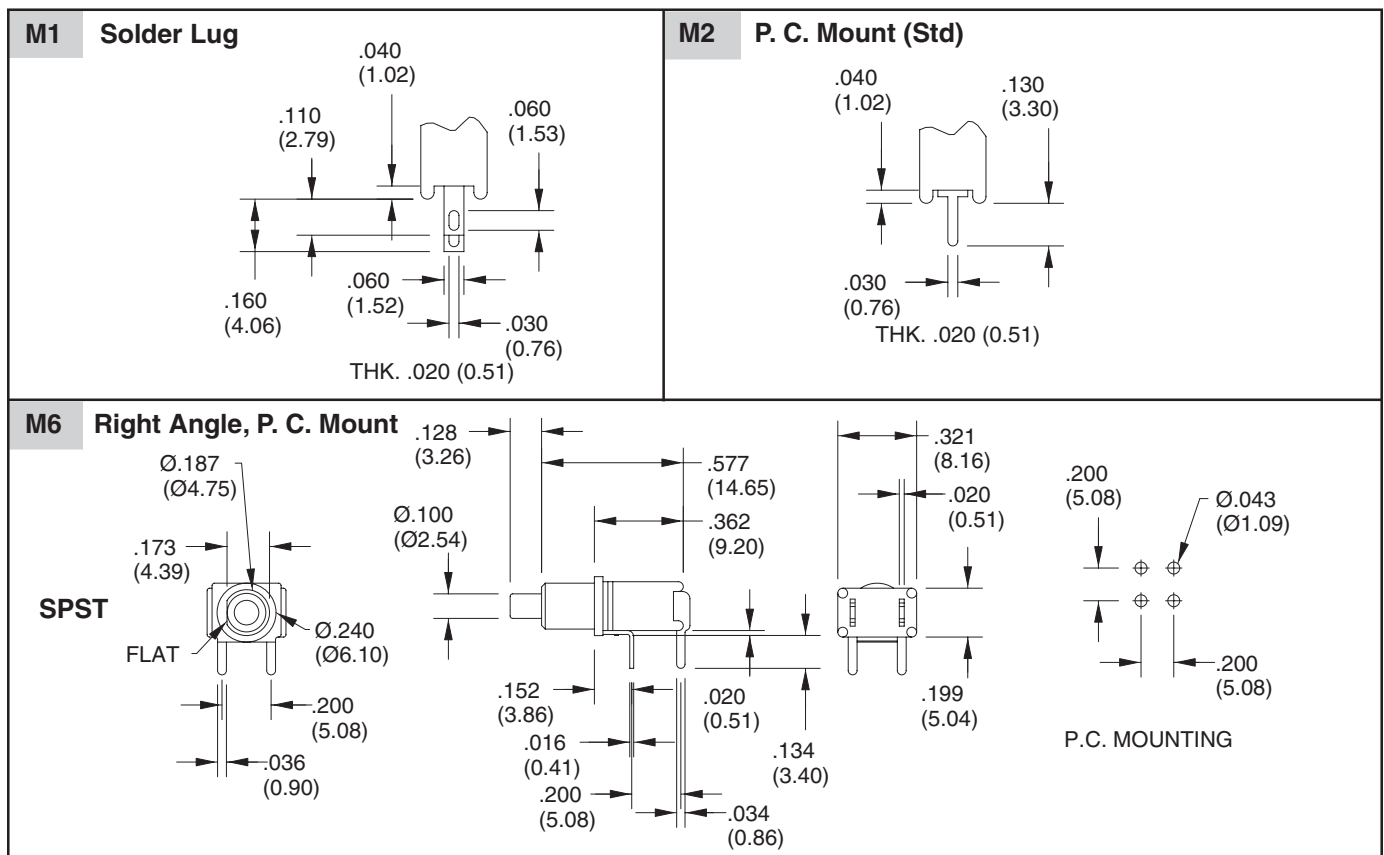
B6

Ø.100 (Ø2.54)
.220 (5.59)
Ø.187 (Ø4.75)
.173 (4.39)
.020 (0.51)

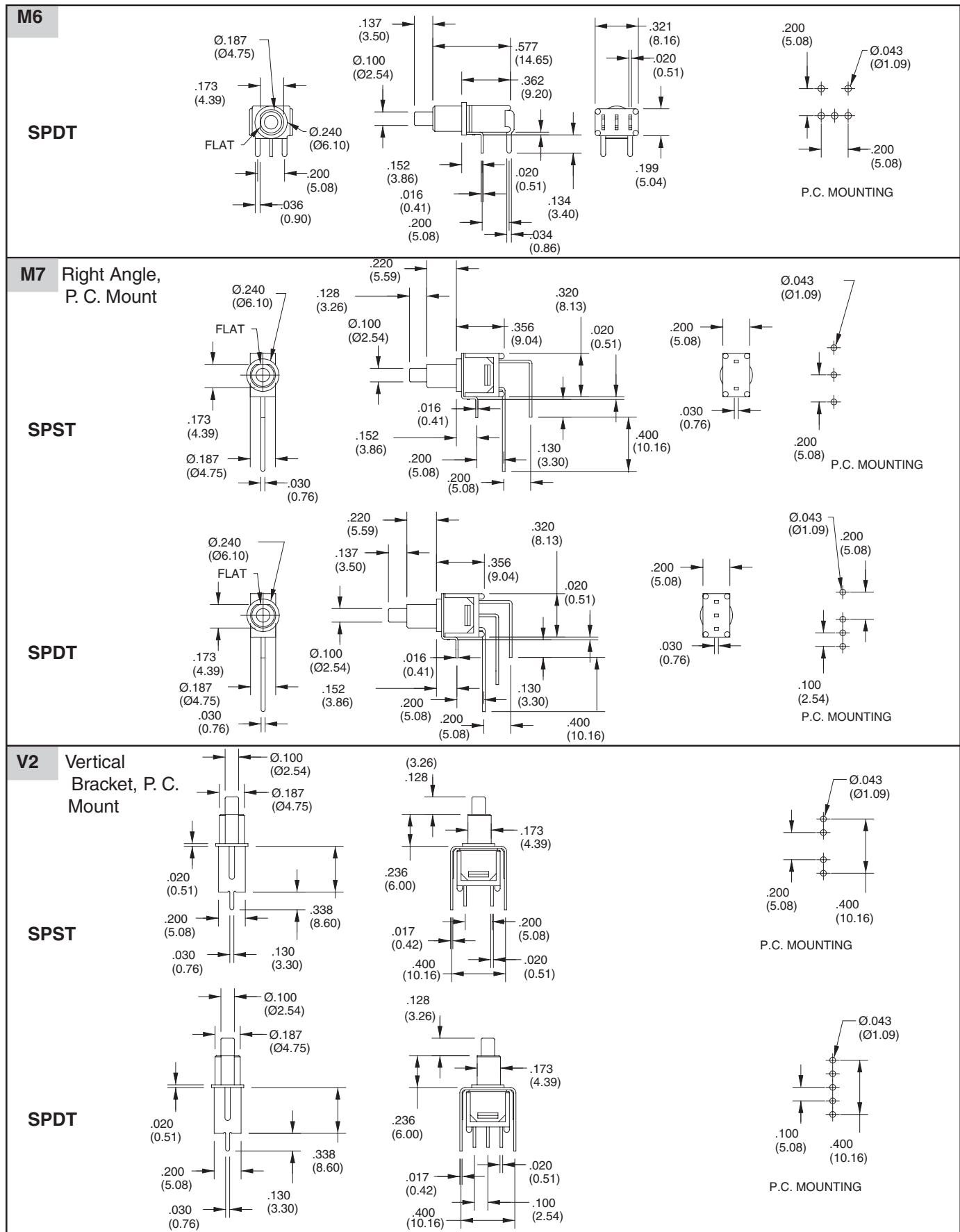
BUSHING OPTIONS (CONT.) IN INCHES (AND MILLIMETERS)



TERMINATION OPTIONS IN INCHES (AND MILLIMETERS)



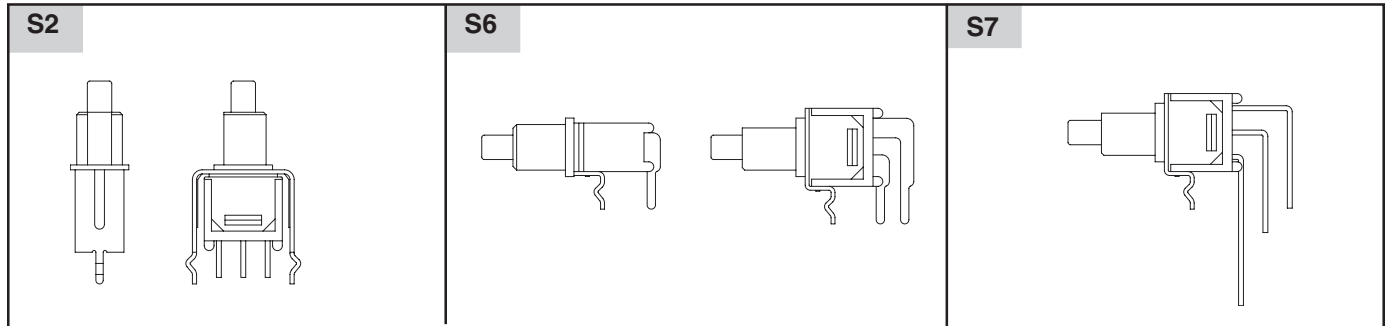
TERMINATION OPTIONS (CONT.) IN INCHES (AND MILLIMETERS)



Pushbutton Switches

Snap-in Termination Options

(Snap-in termination options have the same PC layout as M2, M6 and M7 options)



SPECIFICATIONS

RATINGS

Contact Rating: Q & G option - 1A with resistive load @ 125 VAC or 28 VDC; R option - 0.4 VA max @ 20 Vmax (AC or DC)

Electrical Life: 30,000 make-and-break cycles at full load

Travel: .030 ± .010

Contact Resistance: 20 milliohms max. initial @ 2-4 VDC, 100 mA

Insulation Resistance: 1,000 megaohms minimum

Dielectric Strength: 1,000 V RMS @ sea level

Operating Temperature: -30°C to 85°C

MATERIALS

Case: Diallyl phthalate (DAP) (UL94V-0)

Plunger: Polyester

Bushing: Brass, nickel plated

Housing: Stainless steel

Terminal/Switch Support: Brass, electroplated

Terminal Seal: Epoxy

ORDERING INFORMATION

SERIES	MODEL NO.	BUSHING	TERMINATION	CONTACT	SEAL
38F	SP8	B5	M1	Q	T
38F = Sub-Miniature Pushbutton Switches	Options: SP8, SP9 (see models for switching positions)	Options: B5, B6, B7, B8, B9, B0 (see bushing options)	Options: M1, M2, M6, M7, V2, S2, S6, S7 (see termination options)	R = Copper alloy, gold plate over nickel plate. Q = Copper alloy, silver plated G=Gold plate over silver plate	T = Lead Free and RoHS Compliant

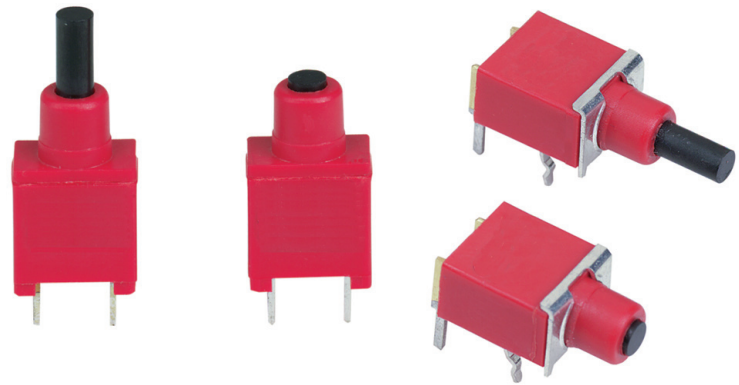
Example Part Number: 38FSP8B5M1QE

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

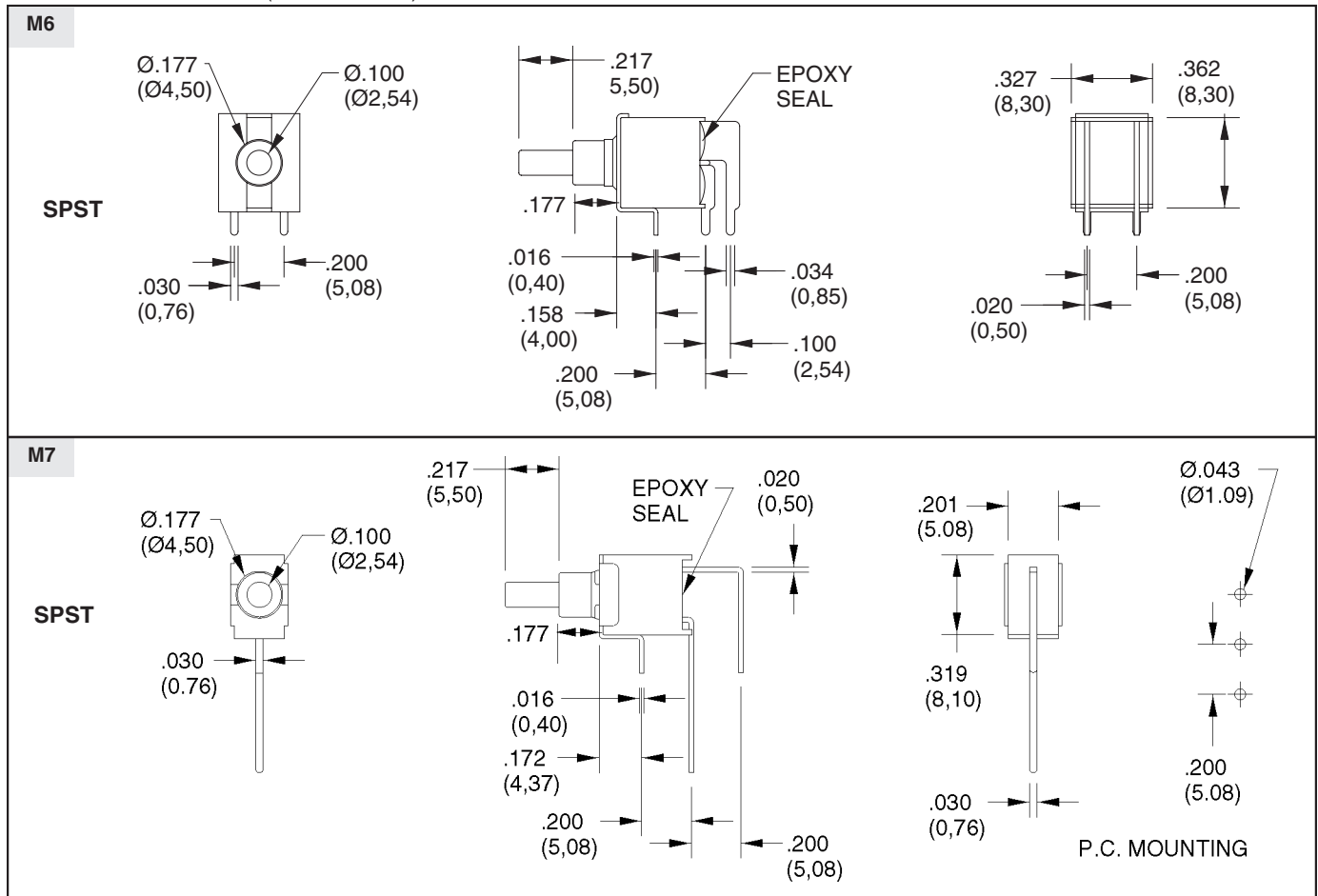
SERIES 38G
Sealed Subminiature
Pushbutton Switches

FEATURES

- Drop-In Replacement for Industry Standard
- Choice of Terminations
- Printed Circuit Board Mount
- SPST, DPST and SPDT Momentary Contact
- Sealed Per IP67



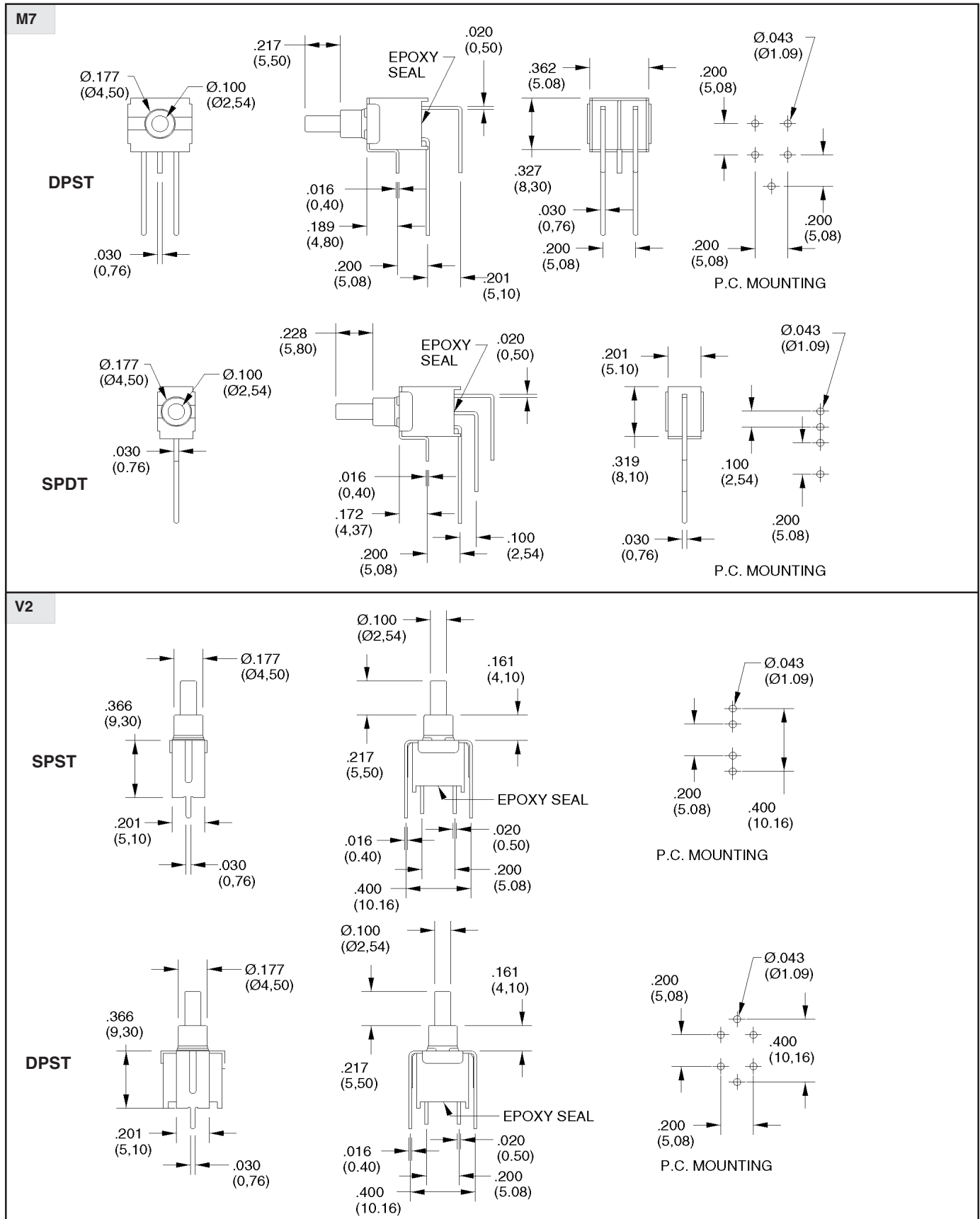
DIMENSIONS In inches (and millimeters)



Pushbutton Switches

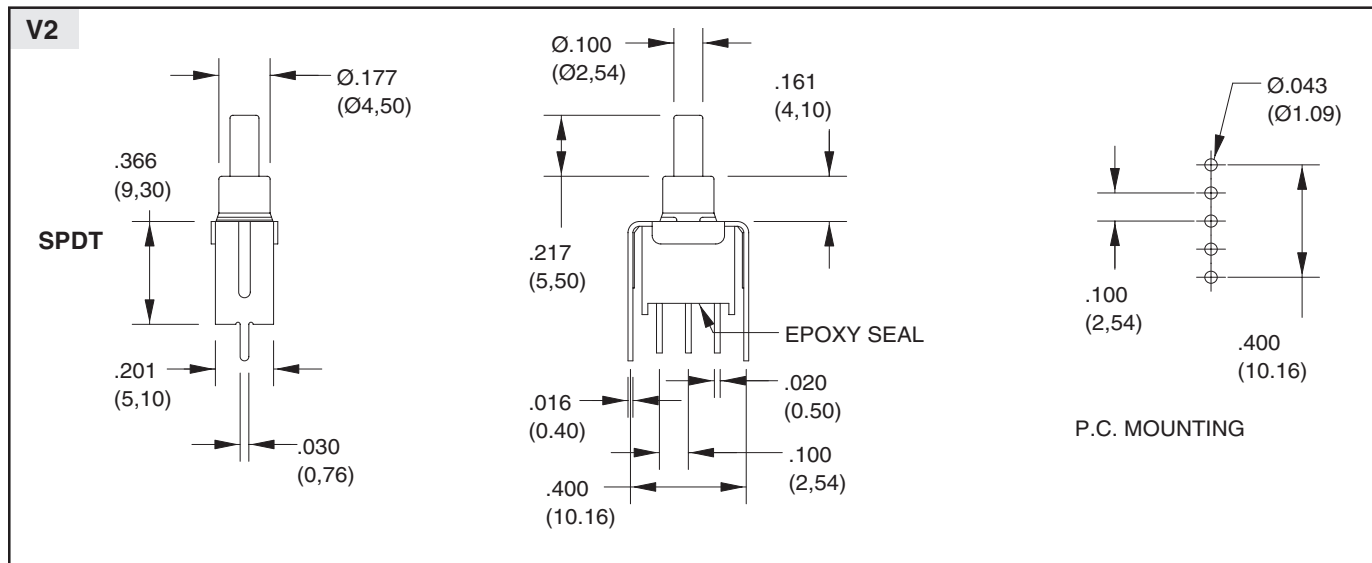
SERIES 38G

DIMENSIONS In inches (and millimeters)

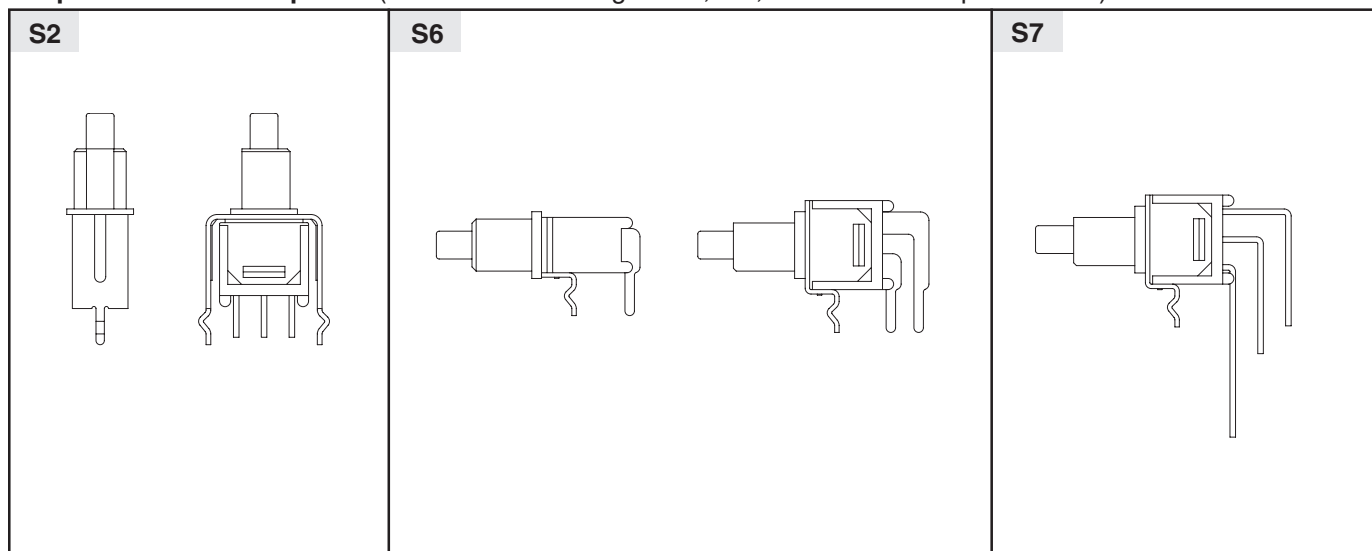


SERIES 38G

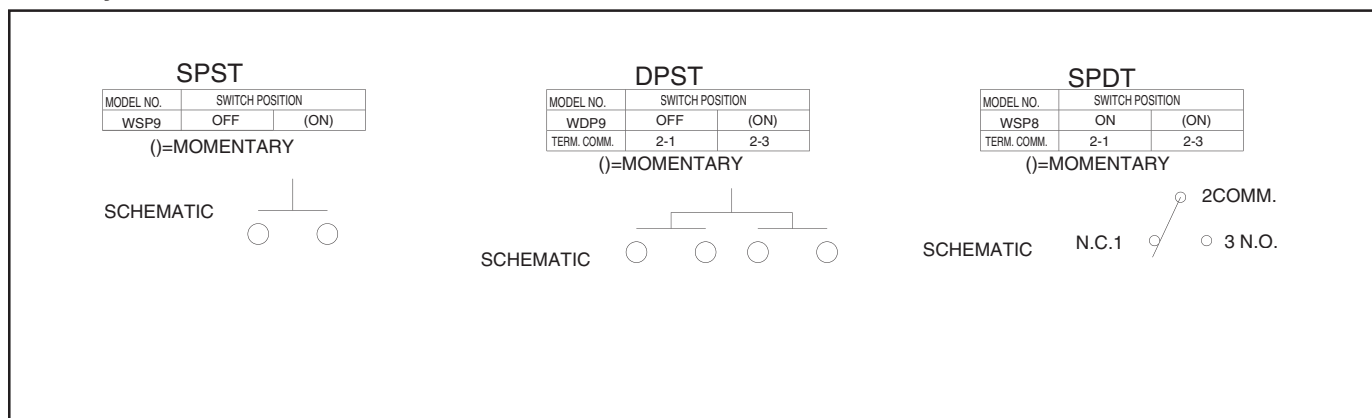
DIMENSIONS In inches (and millimeters)



Snap-in Termination Options (Same P.C. mounting as V2, M6, M7 but with snap-in bracket)



Circuitry



Pushbutton Switches

SERIES 38G

SPECIFICATIONS

Rating Criteria

Operating Life: 30,000 make-and-break cycles at full load

Contact Rating (resistive load):

R Option: 0.4 VA maximum at 20 Vac or Vdc maximum

G Option: 1A max at 125 Vac or 28 Vdc

Contact Resistance: 20 milliohms max initial at 2-4 Vdc, 100 mA

Insulation Resistance: 1000 megaohms minimum

Voltage Breakdown: 1500 Vrms minimum at sea level

Operating Temperature: -30°C. to +85°C.

Terminals: Copper alloy

Spring: Plated Music Wire

Contact System: Copper alloy

Switch Support: Brass, tin-plated

Materials and Finishes

Case: Glass filled Nylon 6/6 (UL 94V-0)

Plunger: Thermoplastic Polyester(UL 94V-0) (with internal o-ring seal)

ORDERING INFORMATION

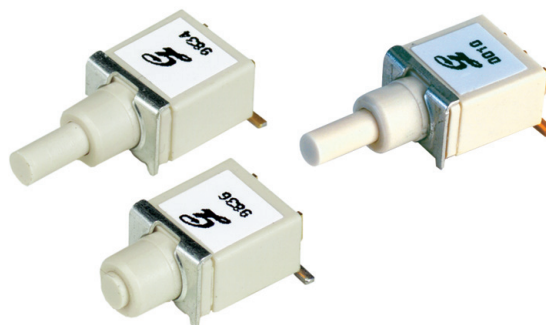
38G	WSP8	M7	R	T
Subminiature Sealed Pushbutton Switches	Options: WSP8, WSP9, WDP9 (see models for switching positions)	Options: M6, M7, S2, S6, S7, V2 (see termination options)	R = Copper alloy, gold plate over nickel plate. G=Gold plate over silver plate	T = Lead Free and RoHS Compliant

SERIES 38H

Sealed Surface Mount Subminiature Pushbutton Switches

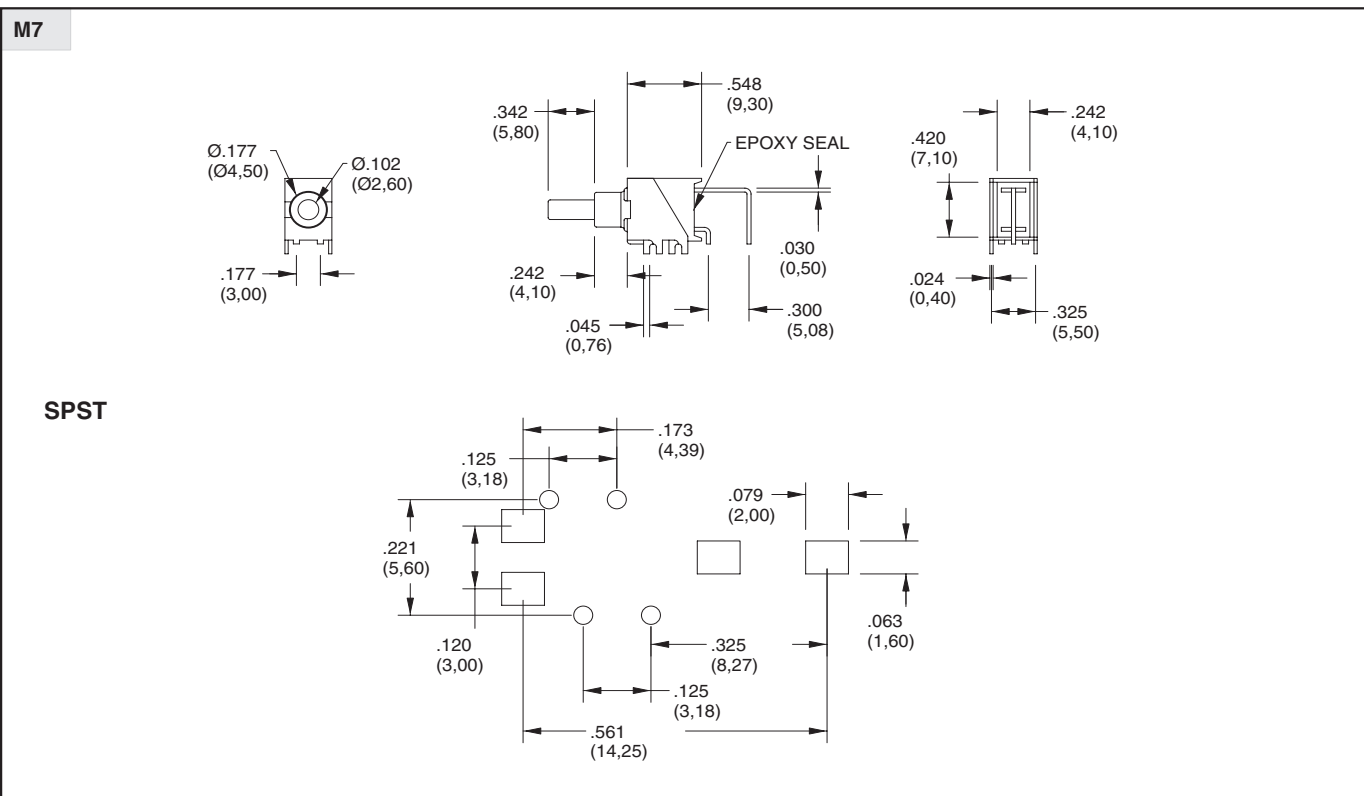
FEATURES

- ï Surface Mount Process Compatible
- ï Sealed Construction
- ï Solder-Coated Terminals
- ï Tape and Reel Packaging
- ï SPST and SPDT Momentary Contact
- Sealed Per IP67



SERIES 38H

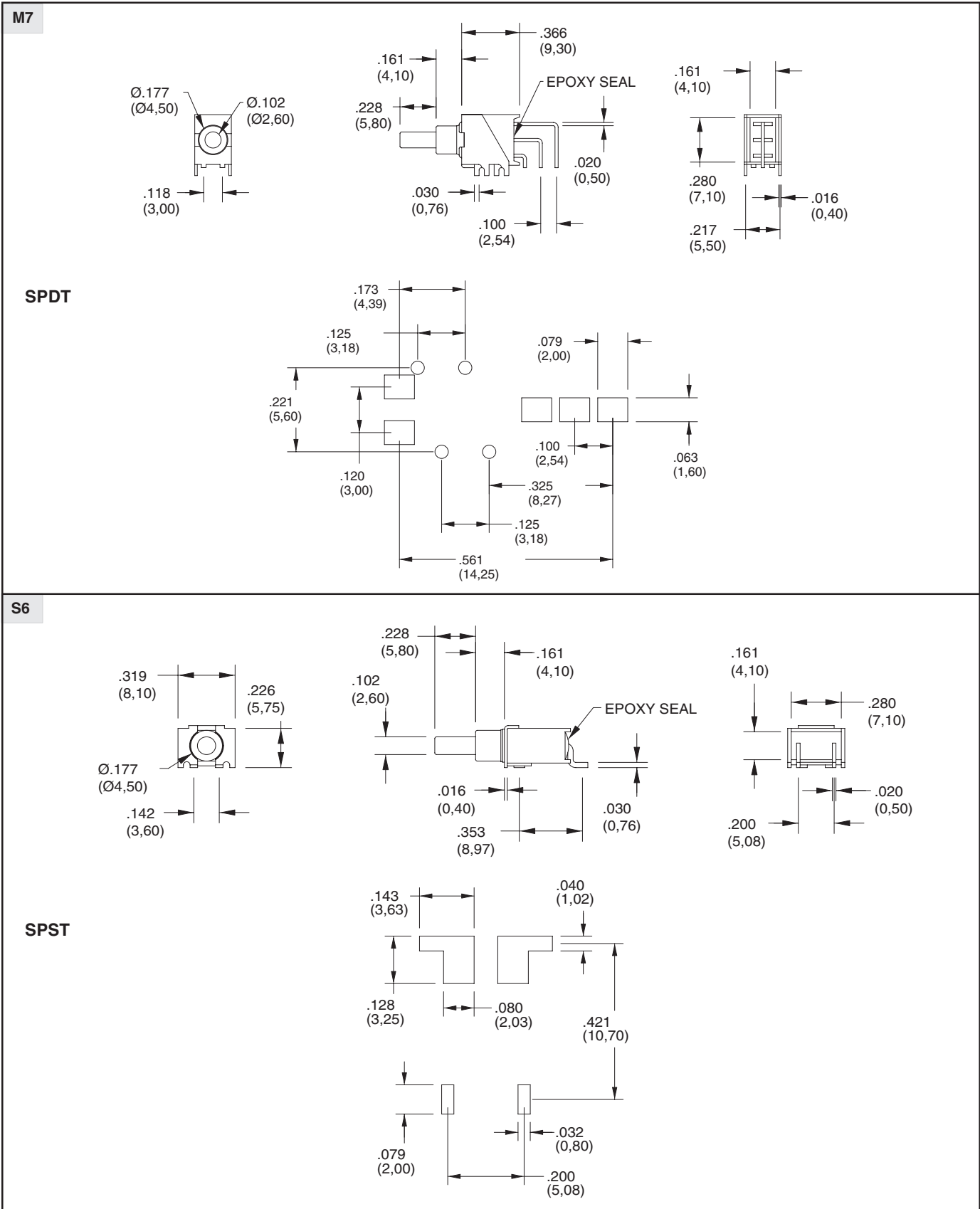
DIMENSIONS In inches (and millimeters)



Pushbutton Switches

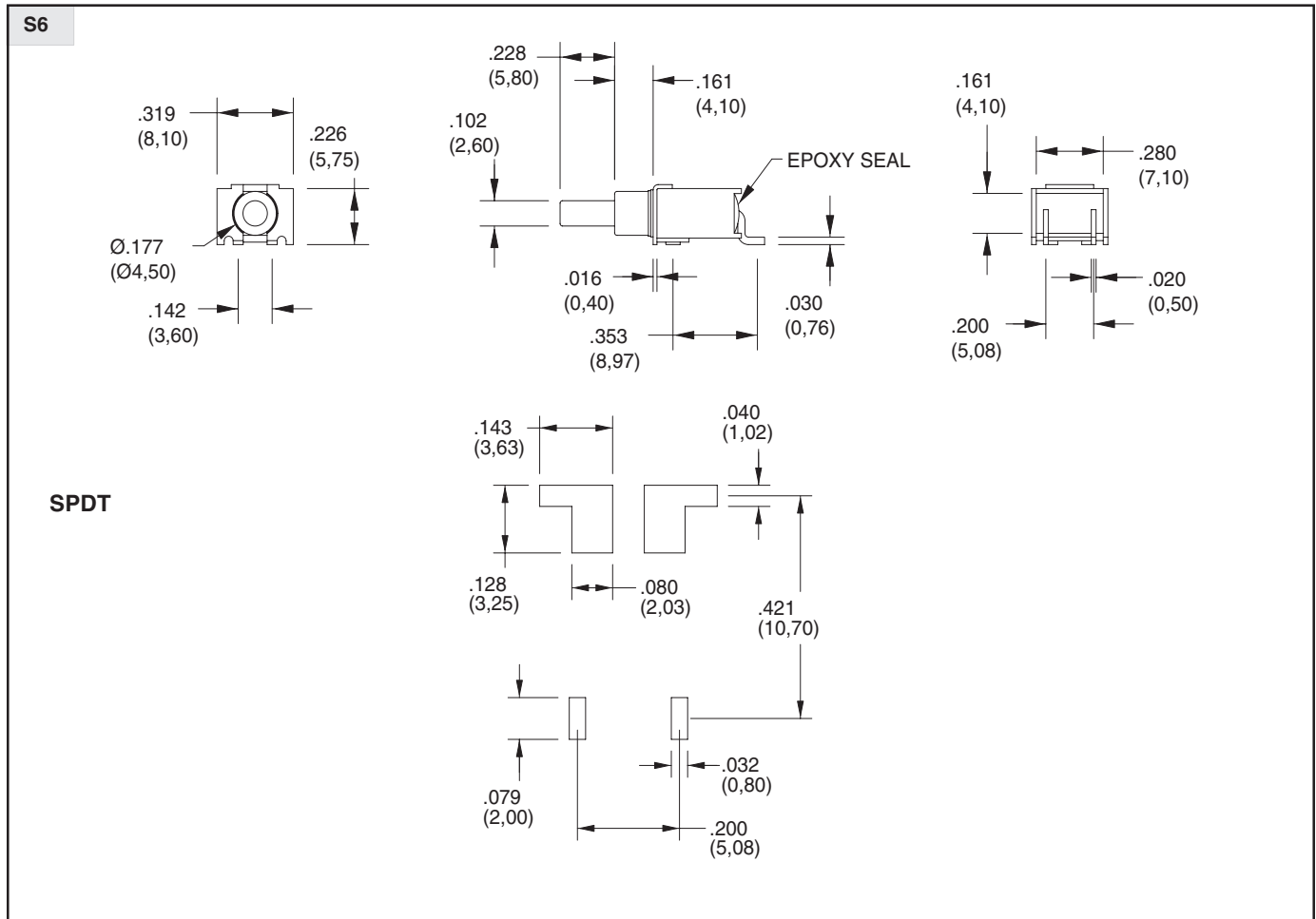
SERIES 38H

DIMENSIONS In inches (and millimeters)



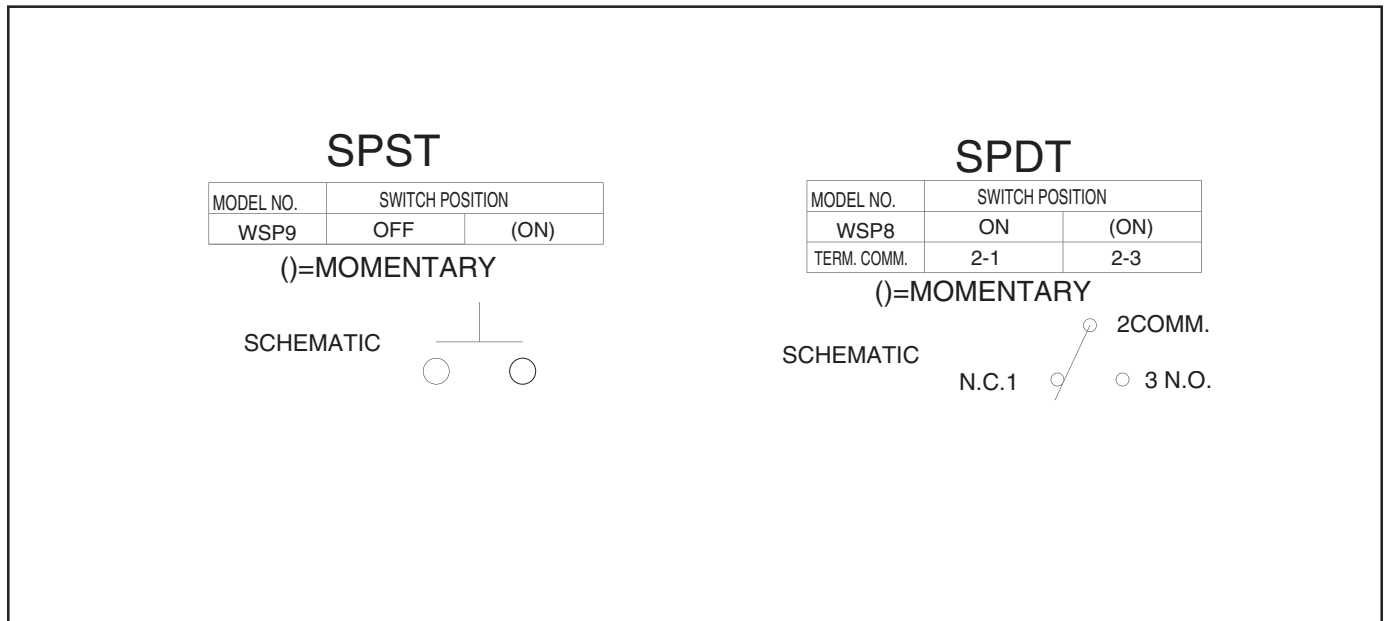
SERIES 38H

DIMENSIONS In inches (and millimeters)



Pushbutton Switches

Circuitry



SERIES 38H

SPECIFICATIONS

Rating Criteria

Operating Life: 30,000 make-and-break cycles at full load

Contact Rating (resistive load):

R Option: 0.4 VA maximum at 20 Vac or Vdc maximum

Q & G Options: 1A max at 125 Vac or 28 Vdc

Contact Resistance: 20 milliohms max initial at 2-4 Vdc, 100 mA

Insulation Resistance: 1000 megaohms minimum

Voltage Breakdown: 1500 Vrms minimum at sea level

Operating Temperature: -30°C. to +85°C.

Contact System: Copper alloy

Switch Support: Brass, tin-plated

Materials and Finishes

Case: Glass Filled Nylon 4/6, UL94V-

Plunger: Thermoplastic Polyester(UL 94V-0) (with internal o-ring seal)

Terminals: Copper alloy

Spring: Plated Music Wire

ORDERING INFORMATION

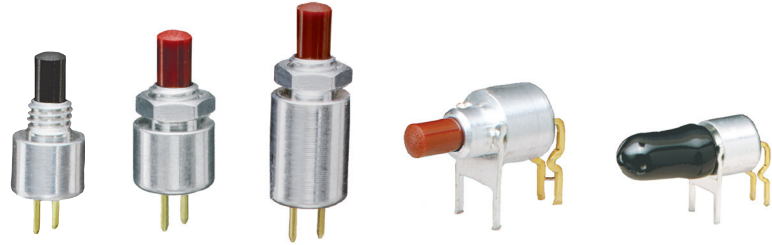
SERIES	MODEL NO.	TERMINATION	CONTACT	SEAL
38H	WSP8	M7	R	T
Sealed Surface Mount Subminiature Pushbutton Switches	Options: WSP8, WSP9 (see models for switching positions)	Options: M7, S6 (see termination options)	R = Copper alloy, gold plate over nickel plate. G = Copper alloy, Gold plate over silver plate Q = Copper alloy, Silver Plate	T = Lead Free and RoHS compliant

Pushbutton Switches

SERIES 39 SPST, 150 mA

FEATURES

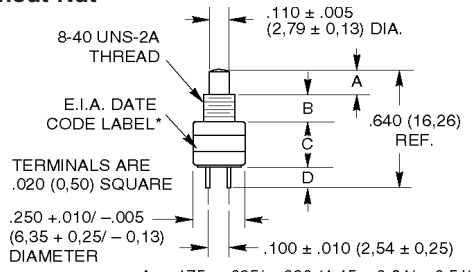
- 1/4" Diameter
- Up to 1,000,000 Cycles of Operation
- PC Mount



DIMENSIONS In Inches (and millimeters)

SPST–Normally Open, Without Nut

39-405*



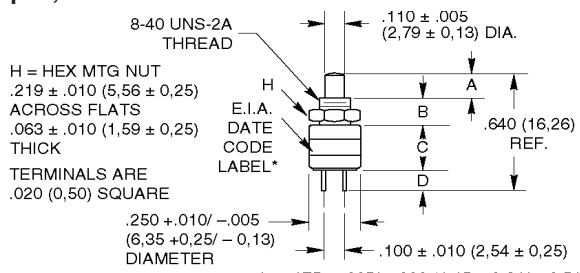
TERMINALS ARE .020 (0,50) SQUARE
 *Label increases nominal diameter to .255 (6,48)
 A = .175 + .025 / - .020 (4,45 + 0,64 / - 0,51)
 B = .125 ± .010 (3,18 ± 0,25)
 C = .215 ± .015 (5,46 ± 0,38)
 D = .125 ± .010 (3,18 ± 0,25)

Rating at 28 Vdc Resistive	Operations at Rated Load	*Complete Part Number	Button Color
150 mA	1,000,000	39-405 RED 39-405 BLK	Red Black

Action	Total Travel	Actuating Force (oz.)
Momentary	.035 ± .015 (0,89 ± 0,38)	4 + 4 - 2

SPST–Normally Open, With Nut

39-401*



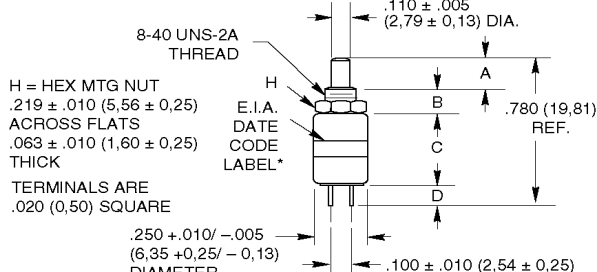
H = HEX MTG NUT
 .219 ± .010 (5,56 ± 0,25)
 ACROSS FLATS
 .063 ± .010 (1,59 ± 0,25)
 THICK
 *Label increases nominal diameter to .255 (6,48)
 A = .175 + .025 / - .020 (4,45 + 0,64 / - 0,51)
 B = .125 ± .010 (3,18 ± 0,25)
 C = .215 ± .015 (5,46 ± 0,38)
 D = .125 ± .010 (3,18 ± 0,25)

Rating at 28 Vdc Resistive	Operations at Rated Load	*Complete Part Number	Button Color
150 mA	1,000,000	39-401 RED 39-401 BLK	Red Black

Action	Total Travel	Actuating Force (oz.)
Momentary	.035 ± .015 (0,89 ± 0,38)	4 + 4 - 2

SPST–Normally Open, With Overtravel

39-424*



H = HEX MTG NUT
 .219 ± .010 (5,56 ± 0,25)
 ACROSS FLATS
 .063 ± .010 (1,60 ± 0,25)
 THICK
 *Label increases nominal diameter to .255 (6,48)
 A = .175 + .025 / - .020 (4,45 + 0,64 / - 0,51)
 B = .125 ± .010 (3,18 ± 0,25)
 C = .355 ± .015 (9,02 ± 0,38)
 D = .125 ± .010 (3,18 ± 0,25)

Rating at 28 Vdc Resistive	Operations at Rated Load	*Complete Part Number	Button Color
150 mA	100,000	39-424 RED 39-424 BLK	Red Black

Action	Total Travel	Over Travel	Actuating Force (oz.)
Momentary	.130 ± .025 (3,30 ± 0,64)	.015 (0,38) Min.	5 ± 3

Pushbutton Switches

SERIES 39 Miniature Limit

FEATURES

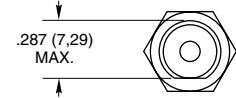
- Adjustable Location Setting
- Plunger Sealed Version

DIMENSIONS In Inches (and millimeters)

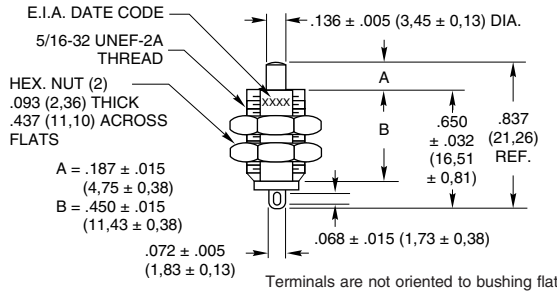


SPST-Normally Open, With Overtravel

39-101



Mounting Hole
.339 (8,61) Diameter
'D' shape per above.



Terminals are not oriented to bushing flat

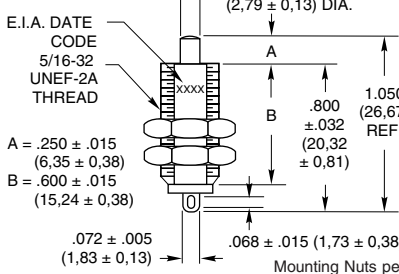
Rating at 115 Vac Resistive	Rating at 220 Vac Resistive	Operations at Rated Load	Part Number	Button Color
1/2 Amp	1/4 Amp	500,000	39-101	Nat. Nylon

Action	Total Travel	Over Travel	Actuating Force (oz.)
Momentary	.187 ± .015 (4,75 ± 0,38)	.060 (1,52) Min. from top of bushing	5 + 3 - 2

SPST-Normally Open, With Extended Overtravel

39-102

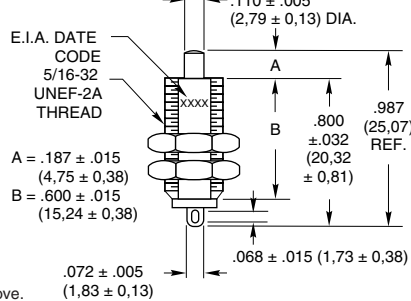
39-103



Mounting Nuts per above.

SPST-Normally Open, With Overtravel, Sealed Actuator

39-701

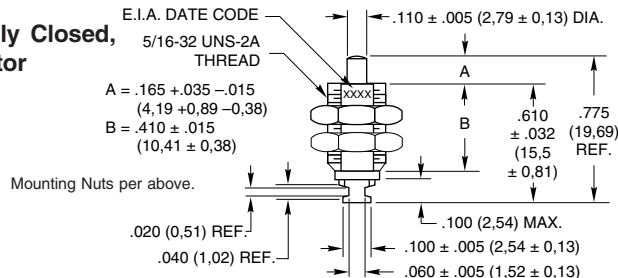


Rating at 115 Vac Resistive	Rating at 220 Vac Resistive	Operations at Rated Load	Part Number	Button Color
150 mA	75 mA	30,000	39-102	Nat. Nylon
150 mA	75 mA	100,000	39-701	Nat. Nylon
1/2 Amp	1/4 Amp	30,000	39-103	Nat. Nylon

Action	Total Travel	Over Travel	Actuating Force (oz.)
Momentary	.250 ± .015 (6,35 ± 0,38)	39-102 and 39-103: .200 (5,08) Nominal. from top of bushing	6.8 ± 5
Momentary	.187 ± .015 (4,75 ± 0,38)	39-701: .060 (1,52) Min. from top of bushing	8 ± 4

SPST-Normally Closed, Sealed Actuator

39-702



Mounting Nuts per above.

Rating at 115 Vac Resistive	Rating at 220 Vac Resistive	Operations at Rated Load	Part Number	Button Color
1/4 Amp	1/8 Amp	100,000	39-702	Nat. Nylon

Action	Total Travel	Over Travel	Actuating Force (oz.)
Momentary	.042 ± .010 (1,07 ± 0,25)	None	8 ± 4

CIRCUITRY



SPECIFICATIONS

Rating Criteria

Contact Resistance: 25 milliohms maximum on a new switch

Voltage Breakdown: 1,000 Vac between mutually insulated parts

Insulation Resistance: 1,000 megohms minimum

Operating Temperature: -40°C to +85°C

Materials and Finishes

Bushing and Mounting Nuts: Brass, tin zinc
Insulation Sleeve: Molded polyester for 39-101, 39-102, 39-103 and 39-701; phenolic per MIL-M-14 type CFG for 39-702

Base: Thermoset plastic

Terminals: Commercial bronze, gold plated over nickel for 39-101, 39-102, 39-103 and 39-701; silver for 39-702

Springs: Tinned music wire

Contacts: Commercial bronze, gold-plated for 39-101, 39-102, 39-103 and 39-701; fine silver for 39-702

Button: Thermoplastic

O-Ring: (39-701 & 39-702) Silicone

STANDARD OPTIONS

Optional plating: gold-plated contacts for dry circuit conditions, contact Grayhill.

ORDERING INFORMATION

Part No.	Description
39-101	SPST, N.O. With Overtravel
39-102	SPST, N.O. With Extended Overtravel
39-103	SPST, N.O. With Extended Overtravel
39-701	SPST, N.O. With Overtravel, Sealed
39-702	SPST, N.C. Sealed

Available from your local Grayhill Distributor.

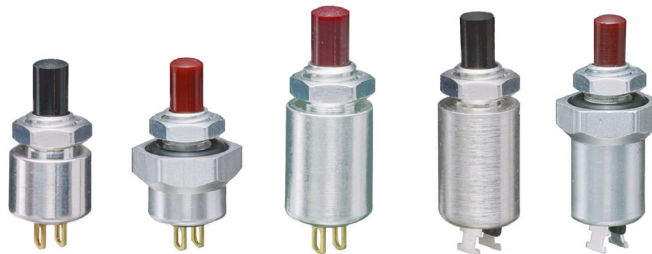
For prices and discounts, contact a local Sales Office, an authorized local Distributor or Grayhill.



SERIES 39
SPST, 150 mA to 1/2 Amp

FEATURES

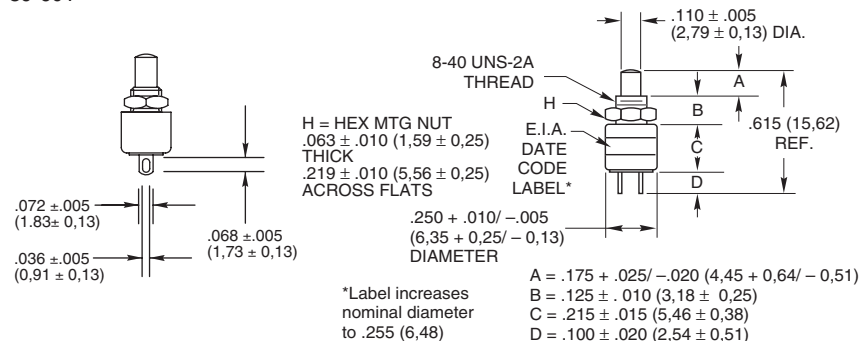
- Requires an Absolute Minimum of Space
- Molded-In Terminals in SPST–N.O.
- Solder Lug Terminals



DIMENSIONS In Inches (and millimeters)

Normally Open–SPST Economy and Standard Version

39-1
39-3
39-601*



Economy Version

Electrical Ratings	Operations at Rated Load	*Complete Part Number	Button Color
At 5 Vdc 150 mA	At 20 Vdc 20 mA	1,000,000	39-601 RED 39-601 BLK

Action	Total Travel	Actuating Force (oz.)	Mtg. Hole
Momentary	.035 ± .015 (0,89 ± 0,38)	4 + 4 - 2	11/64" (4,37) DIA.

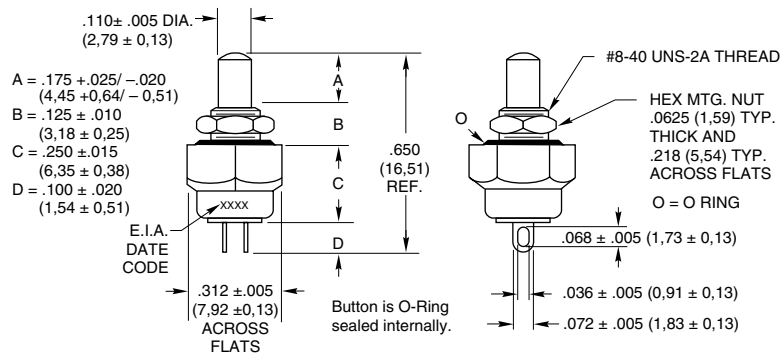
Standard

Electrical Ratings	Operations at Rated Load	Complete Part Number	Button Color
At 115 Vac 1/2 Amp Res.	At 220 Vac 1/4 Amp Res	1,000,000	39-1 39-3

Action	Total Travel	Actuating Force (oz.)	Mtg. Hole
Momentary	.035 ± .015 (0,89 ± 0,38)	4 + 4 - 2	11/64" (4,37) DIA.

Normally Open–SPST with Sealed Bushing and Button

39-351*

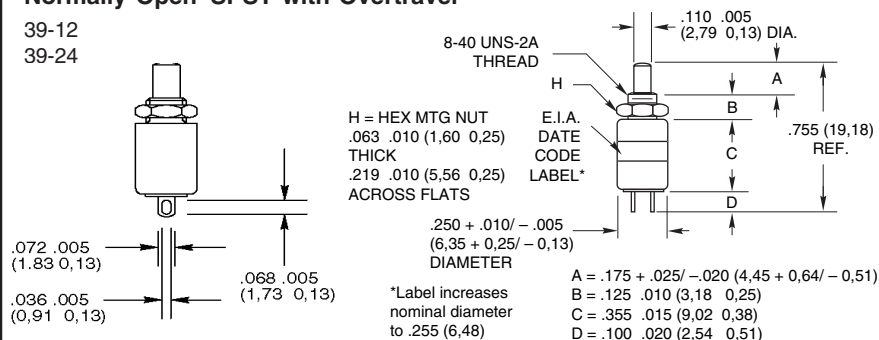


Rating at 115 Vac Resistive	Rating at 220 Vac Resistive	Operations at Rated Load	*Complete Part Number	Button Color
1/2 Amp	1/4 Amp	250,000	39-351 RED 39-351 BLK	Red Black

Action	Total Travel	Actuating Force (oz.)
Momentary	.035 ± .015 (0,89 ± 0,38)	16 ± 8

Normally Open–SPST with Overtravel

39-12
39-24



Rating at 115 Vac Resistive	Rating at 220 Vac Resistive	Operations at Rated Load	Complete Part Number	Button Color
1/2 Amp	1/4 Amp	100,000	39-12 39-24	Red Black

Action	Total Travel	Over Travel	Actuating Force (oz.)	Mtg. Hole
Momentary	.130 ± .025 (3,30 ± 0,64)	.015 (0,38) Min.	5 ± 3	11/64" (4,37) DIA.

DIMENSIONS In Inches (and millimeters)

Normally Closed-SPST

39-2

H = HEX MTG NUT
 $.063 \pm .010$ (1,60 ± 0,25) THICK
 $.219 \pm .010$ (5,56 ± 0,25) ACROSS FLATS

8-40 UNS-2A THREAD

E.I.A. DATE CODE LABEL*

DIAMETERS
 $.105 \pm .005$ (2,67 ± 0,13) DIA.
 $.780$ (19,81) REF.
 $.250 + .010 / -.005$ (6,35 + 0,25 / - 0,13) DIA.
 $.100 \pm .010$ (2,54 ± 0,25)
 $.060 \pm .010$ (1,52 ± 0,25)

A = .175 ± .025 (4,45 ± 0,64)
B = .125 ± .010 (3,18 ± 0,25)
C = .390 ± .010 (9,91 ± 0,25)
D = .100 (2,54) MAX.

Rating at 115 Vac Resistive	Rating at 220 Vac Resistive	Operations at Rated Load	Part Number	Cap Color
1/4 Amp	1/8 Amp	250,000	39-2	Black

Action	Total Travel	Actuating Force (oz.)	Mtg. Hole
Momentary	.042 ± .010 (1,07 ± 0,25)	+ 4 - 2	.172 (4,37) DIA.

Normally Closed-SPST with Sealed Bushing and Button

39-352*

#8-40 UNS-2A THREAD

H = HEX MTG. NUT
 $.0625$ (1,59) TYP. THICK AND
 $.218$ (5,56) TYP. ACROSS FLATS

O-RING

E.I.A. DATE CODE LABEL*

DIAMETERS
 $.110 \pm .005$ DIA. (2,79 ± 0,13)
 $.819$ (20,80) REF.
 $.250 + .010 / -.005$ (6,35 + 0,25 / - 0,13)
 $.312 \pm .005$ (7,92 ± 0,13) ACROSS FLATS
 $.100 \pm .010$ (2,54 ± 0,25)
 $.060 \pm .010$ (1,52 ± 0,25)

A = .165 + .035 / -.015 (4,19 + 0,89 / - 0,38)
B = .125 ± .007 (3,18 ± 0,18)
C = .429 ± .015 (10,90 ± 0,38)
D = .100 (2,54) MAX.
E = 10° TO 40° APPROX.

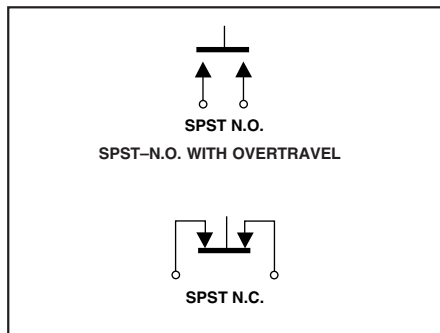
Button is o-ring sealed internally.
 *Label increases nominal diameter to .255 (6,48)

Rating at 115 Vac Resistive	Rating at 220 Vac Resistive	Operations at Rated Load	*Complete Part Number	Button Color
1/4 Amp	1/8 Amp	100,000	39-352 RED 39-352 BLK	Red Black

Action	Total Travel	Actuating Force (oz.)
Momentary	.042 ± .010 (0,17 ± 0,25)	8 ± 4

Pushbutton Switches

CIRCUITRY



SPECIFICATIONS

Rating Criteria

Contact Resistance: 25 milliohms maximum on a new switch

Voltage Breakdown: 1,000 Vac between mutually insulated parts

Insulation Resistance: 1,000 megohms minimum

Operating Temperature: -40°C to +85°C

Mounting Torque: 2 inch-pounds

Materials and Finishes

Mounting Nut: Brass, tin zinc

Housing: Aluminum, clear anodized for 39-351 and 39-352; Brass, zinc trivalent chromate-plated for others

Button: Thermoset plastic

Base: Thermoset plastic

Shorting Bar: Fine silver for 39-2 and 39-352; brass, gold-plated over nickel plate for 39-601; fine silver, gold-plated for others

Terminals: Fine silver for 39-2 and 39-352; commercial bronze with gold-plated fine silver contact surface for others

Spring: Tinned music wire

O-Rings: (39-351 and 39-352) Internal ring is silicone; external ring is buna 'N'

ACCESSORY

Button Cap
 Part No. 30B1012
 For use with part numbers 39-351 and 39-352.
 (Fasten to button with Cyanoacrylate Adhesive)
 See page E-XX for dimensions.

ORDERING INFORMATION

Part Number	Description
39-1	N.O., Red Button
39-2	N.C., Black Button
39-3	N.O., Black Button
39-12	N.O., Overtravel Red Button
39-24	N.O., Overtravel Black Button
39-351 RED	N.O., Sealed, Red Button
39-351 BLK	N.O., Sealed, Black Button
39-352 RED	N.C., Sealed, Red Button
39-352 BLK	N.C., Sealed, Black Button
39-601 RED	N.O., Economy, Red Button
39-601 BLK	N.O., Economy, Black Button

Accessory cap may be used with all switches shown except 39-2.

Accessory Part Number	Description
30B1012-5	Red Button Cap
30B1012-9	Black Button Cap
30B1012-8	White Button Cap

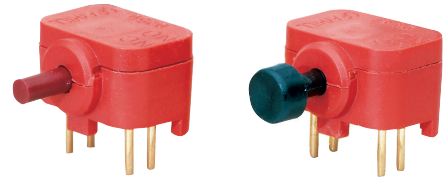
Available from your local Grayhill Distributor.

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

SERIES 39
SPST and SPDT, 1/4 Amp

FEATURES

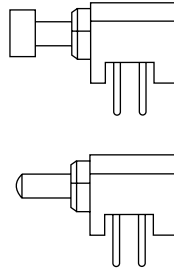
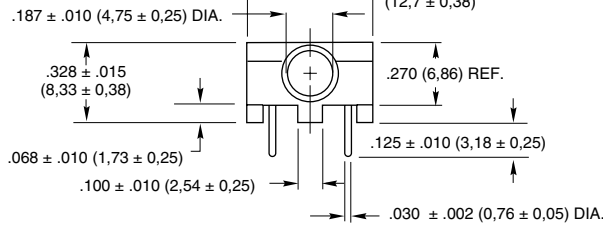
- Fully Protected During Flux Cleaning Operations



DIMENSIONS In Inches (and millimeters)

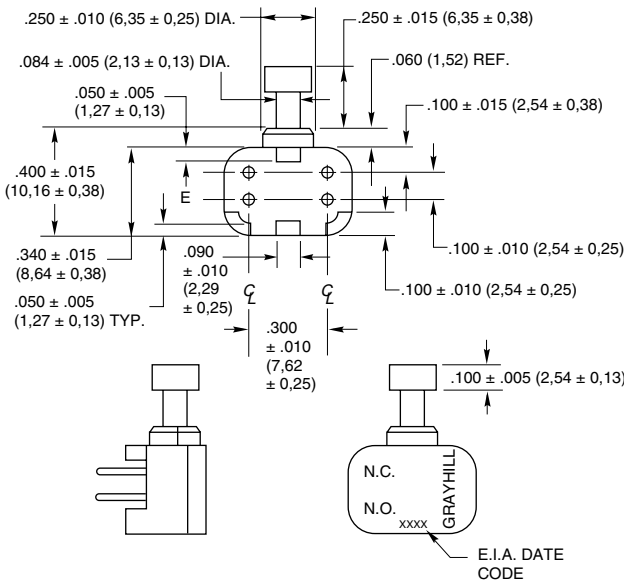
SPDT-PC Mount
Large Button Style

39-261*



Rating at 28 Vdc Resistive	Rating at 115 Vac Resistive	Rating at 220 Vac Resistive	Operations at Rated Load	Partial Part Number
150 mA	1/4 Amp	1/8 Amp	500,000	39-251* 39-261*

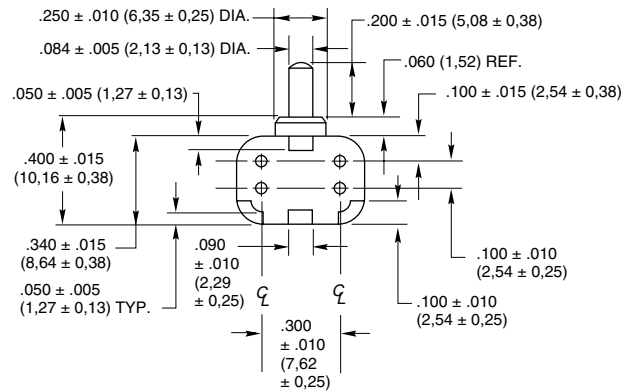
Action	Total Travel	Actuating Force (oz.)
Momentary	.090 + .010/ - .015 (2,29 + 0,25/ - 0,38)	10 ± 3 oz.



Small Button Style

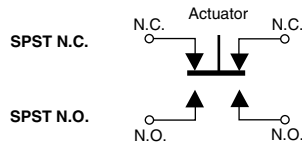
39-251*

END OF BUTTON HAS A .200 (5,08) SPHERICAL RADIUS

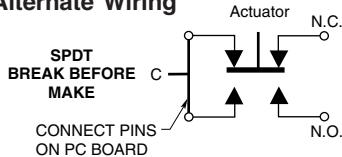


CIRCUITRY

2 Circuits Per Switch



Alternate Wiring



SPECIFICATIONS

Rating Criteria

Contact Resistance: 25 milliohms maximum on a new switch

Voltage Breakdown: 1,000 Vac between mutually insulated parts

Insulation Resistance: 1,000 megohms minimum

Operating Temperature: -40°C to +125°C

Materials and Finishes

Button: Nylon

Base and Cover: Polyester, red in color

Shorting Bar: Phosphor bronze, gold-plated over nickel

Terminals: Brass, gold-plated over nickel

Spring: Tinned music wire

O-Ring: Fluorosilicone

ORDERING INFORMATION

*Complete Part Number	Description
39-251 RED	Small Red Button, SPDT
39-251 BLK	Small Black Button, SPDT
39-261 RED	Large Red Button, SPDT
39-261 BLK	Large Black Button, SPDT

Available from your local Grayhill Distributor.

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

Pushbutton Switches