



A

Pushbutton

## 8500 Series Subminiature Pushbutton Switches



### Features/Benefits

- Pre-travel or over-travel models available
- Ratings up to 3 AMPS
- Reliable contact design
- RoHS compliant

### Typical Applications

- Detection
- Telecommunications and networking equipment
- Computers and peripherals



Models Available

### Specifications

CONTACT RATING: Q contact material (853X Models): 1 AMP @ 120 V AC or 28 V DC; (855X Models): 3 AMPS @ 120 V AC or 28 V DC. See page A-65 for additional ratings.

#### ELECTRICAL LIFE:

853X MODELS: 250,000 actuations at full load.  
855X MODELS: 10,000 actuations at full load.

CONTACT RESISTANCE: Below 30 mΩ typ. initial @ 2-4 V DC, 100 mA, for both silver and gold plated contacts.

INSULATION RESISTANCE: 10<sup>9</sup>Ω min.

DIELECTRIC STRENGTH: 1,000 Vrms min. @ sea level.

OPERATING TEMPERATURE: -30°C to 65°C.

TORQUE SPECS: T, T1 15/32" bushings - 50 in. lbs max.  
All other 1/4 -40 bushing types 12 in. lbs max.

### Materials

CASE: Glass filled phenolic or diallyl phthalate (DAP) (UL 94V-0).

PLUNGER: Phenolic or glass filled polyester, black standard(UL94V-0).

CAP & FRAME: Nylon, black, standard.

BUSHING: Brass, nickel plated.

CONTACTS: Q contact material: Coin silver, silver plated. See page A-65 for additional contact materials.

TERMINALS: Q contact material: Copper alloy, silver plated. See page A-65 for additional contact materials.

TERMINAL SEAL: Epoxy.

HARDWARE: Nut: Brass, nickel plated; Lockwasher: Steel, bright nickel plated.

**NOTE:** Any models supplied with Q, B or G contact material are RoHS compliant.

**NOTE:** Specifications and materials listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.

### Build-A-Switch

To order, simply select desired option from each category and place in the appropriate box. Available options are shown and described on pages A-63 thru A-66. For additional options not shown in catalog, consult Customer Service Center. All models have epoxy terminal seal and are compatible with all "bottom-wash" PCB cleaning methods.

|                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div>Switch Function</div> <div><div>8531</div> SPST Off-Mom. 1 Amp</div> <div><div>8532</div> SPST Off-Mom. 1 Amp</div> <div><div>8533</div> SPST On-Mom. 1 Amp</div> <div><div>8534</div> SPST On-Mom. 1 Amp</div> <div><div>8551</div> SPST Off-Mom. 3 Amps</div> <div><div>8552</div> SPST Off-Mom. 3 Amps</div> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

\* Available with M or S plunger models, and B contact material only.



Dimensions are shown: Inches (mm)  
Specifications and dimensions subject to change

# 8500 Series Subminiature Pushbutton Switches



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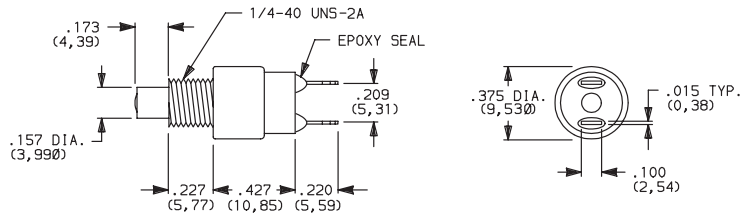
Pushbutton

## SWITCH FUNCTION



| NO. POLES | MODEL NO. | RATING | SWITCH FUNCTION                                                                   |                                                                                   | TOTAL TRAVEL                                         | ACTUATION FORCE    | SCHEMATIC            |                                                                                     |
|-----------|-----------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------|--------------------|----------------------|-------------------------------------------------------------------------------------|
|           |           |        | POS. 1                                                                            | POS. 2                                                                            |                                                      |                    |                      |                                                                                     |
|           |           |        |  |  |                                                      |                    |                      |                                                                                     |
| SP        | 8531      | 1 AMP  | OFF                                                                               | MOM.                                                                              | .095 (2,41) TYP. with overtravel<br>.042 (1,07) TYP. | 7.7 oz (220g) TYP. | N.O. with overtravel |  |
|           | 8551      | 3 AMPS |                                                                                   |                                                                                   |                                                      |                    |                      |                                                                                     |

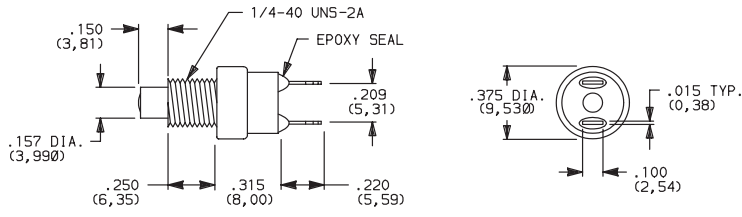
## SPST



Part number shown: 8531MZQE2

|    |      |        |     |      |                  |                  |      |                                                                                     |
|----|------|--------|-----|------|------------------|------------------|------|-------------------------------------------------------------------------------------|
| SP | 8532 | 1 AMP  | OFF | MOM. | .050 (1,27) TYP. | 6 oz (170g) TYP. | N.O. |  |
|    | 8552 | 3 AMPS |     |      |                  |                  |      |                                                                                     |

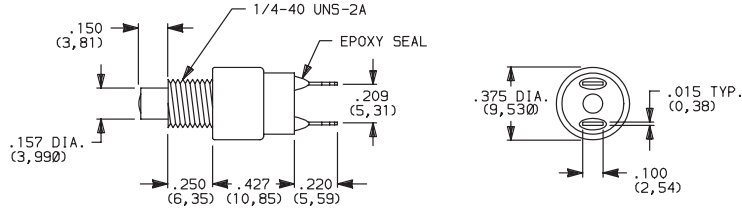
## SPST



Part number shown: 8532MZQE2

|    |      |       |    |      |                                                      |                      |                      |                                                                                       |
|----|------|-------|----|------|------------------------------------------------------|----------------------|----------------------|---------------------------------------------------------------------------------------|
| SP | 8533 | 1 AMP | ON | MOM. | .080 (2,03) TYP. with pretravel<br>.057 (1,45) TYP.  | 11.5 oz (456 g) TYP. | N.C. with pretravel  |  |
|    | 8534 | 1 AMP | ON | MOM. | .032 (0,81) TYP. with overtravel<br>.028 (0,71) TYP. | 10.3 oz (282g) TYP.  | N.C. with overtravel |                                                                                       |

## SPST

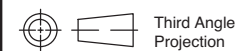


Part number shown: 8533MZQE2

MOM. = Momentary

All models with all options when ordered with G or Q contact material.

**C&K**



Third Angle  
Projection

Dimensions are shown: Inches (mm)  
Specifications and dimensions subject to change

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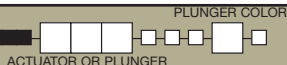


A

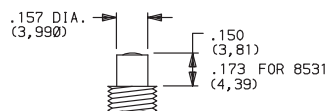
Pushbutton

# 8500 Series Subminiature Pushbutton Switches

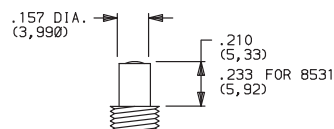
## PLUNGER



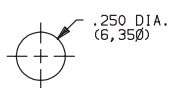
### M .150" HIGH PLUNGER



### S .210" HIGH PLUNGER



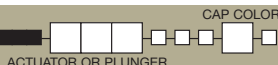
### PANEL MOUNTING



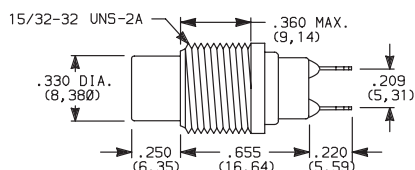
| OPTION CODE | PLUNGER COLOR |
|-------------|---------------|
| 2           | BLACK         |
| 3           | RED           |

**NOTE:** One mounting nut and lockwasher supplied with all actuators (except T actuator: two nuts supplied).

## ACTUATOR

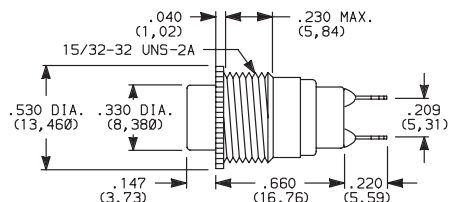


### T 15/32 BUSHING



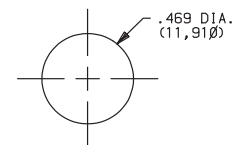
**NOTE:** No frame color choice required.

### T1 15/32 BUSHING WITH FRAME



**NOTE:** No frame color choice required.  
Available with 8532 and 8534 models only.

### PANEL MOUNTING



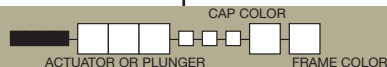
| OPTION CODE | CAP COLOR |
|-------------|-----------|
| 2           | BLACK     |
| 1           | WHITE     |
| 3           | RED       |
| 9           | GRAY      |

Cap Finish: gloss. Other colors available, consult Customer Service Center.

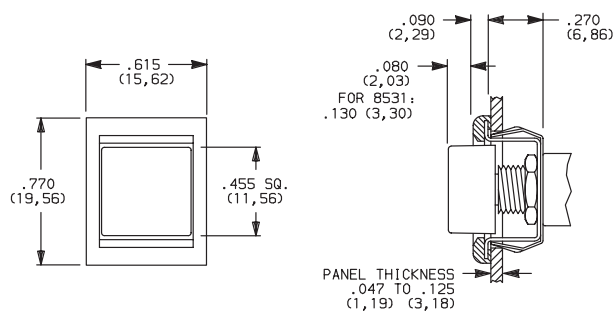
One mounting nut and lockwasher supplied with all actuators (except T actuator: two nuts supplied).

**NOTE:** Caps available for plunger options, see page A-65.

## ACTUATOR—SNAP-IN FRONT MOUNT



### J81 SNAP-IN WITH FRAME



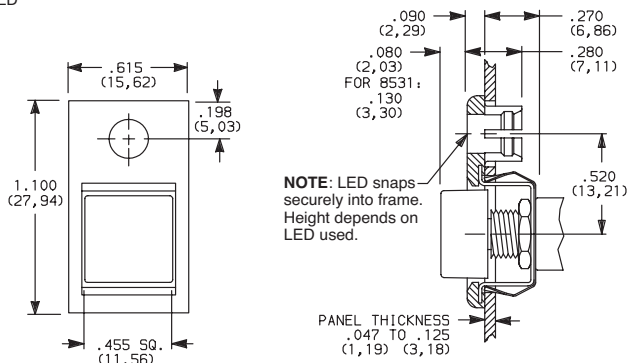
| OPTION CODE | CAP AND FRAME COLOR |
|-------------|---------------------|
| 2           | BLACK               |

Cap and Frame Finish: matte. Other colors available, consult Customer Service Center.

One mounting nut and lockwasher supplied with all actuators.

**NOTE:** Caps & frames available separately, see pages A-65 and A-66.

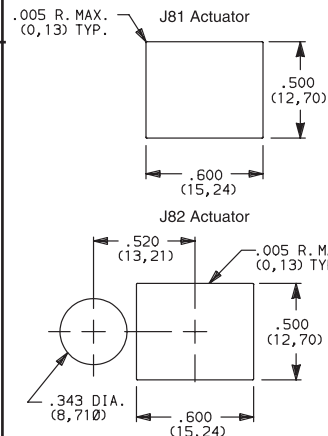
### J82 SNAP-IN WITH FRAME FOR LED



**NOTE:** LED snaps securely into frame. Height depends on LED used.

**LED not included.**  
For LED information, see page A-66.

### PANEL MOUNTING



Dimensions are shown: Inches (mm)  
Specifications and dimensions subject to change

**C&K**

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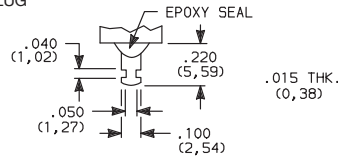
Pushbutton

## TERMINATIONS



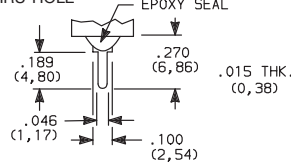
**Z**

SOLDER LUG

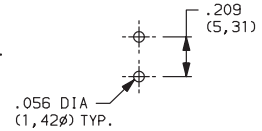


**C**

PC THRU-HOLE

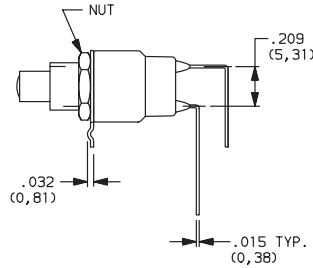
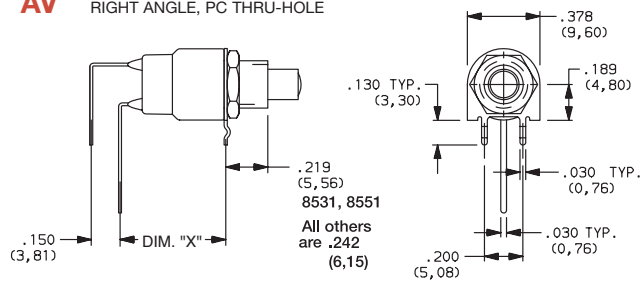


PC MOUNTING

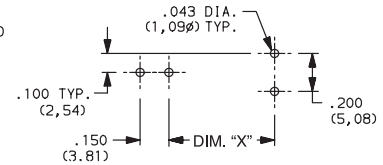


**AV**

RIGHT ANGLE, PC THRU-HOLE



PC MOUNTING



Available with

| MODEL NO.  | DIM "X" |
|------------|---------|
| 8531, 8533 | 0.550   |
| 8532, 8534 | 0.438   |

**NOTE:** Available with M or S plunger models, and B contact material only.

## CONTACT MATERIAL



| OPTION CODE | RoHS COMPLIANT * | RoHS COMPATIBLE * | TERMINAL PLATING              | CONTACT MATERIAL    | RATINGS                        |                                                                                                                        |
|-------------|------------------|-------------------|-------------------------------|---------------------|--------------------------------|------------------------------------------------------------------------------------------------------------------------|
| <b>B</b>    | YES              | YES               | GOLD <sup>1</sup>             | GOLD                | LOW LEVEL/DRY CIRCUIT          | 0.4 VA MAX. @ 20 V AC OR DC MAX.                                                                                       |
| <b>Q</b>    | YES              | YES               | SILVER <sup>4</sup>           | SILVER <sup>5</sup> | POWER                          | 853X MODELS: 1 AMP @ 120 V AC OR 28 V DC.<br>855X MODELS: 3 AMPS @ 120 V AC OR 28 V DC.                                |
| <b>G</b>    | YES              | YES               | GOLD OVER SILVER <sup>2</sup> | GOLD <sup>3</sup>   | LOW LEVEL/DRY CIRCUIT OR POWER | 0.4 V MAX @ 20 V AC OR DC MAX. OR 853X MODELS: 1 AMP @ 120 V AC OR 28 V DC. 855X MODELS: 3 AMPS @ 120 V AC OR 28 V DC. |

\* Note: See Technical Data section of this catalog for RoHS compliant and compatible definitions and specifications.

<sup>1</sup> CONTACTS & TERMINALS: Copper alloy, with gold plate over nickel plate.

<sup>2</sup> CONTACTS: Coin silver, with gold plate over nickel plate.

<sup>3</sup> TERMINALS: Copper alloy, with gold plate over nickel plate.

<sup>4</sup> CONTACTS: Coin silver, silver plated.

<sup>5</sup> TERMINALS: Copper alloy, silver plated.

**NOTE:** Any models supplied with Q, B or G contact material are RoHS compliant.

All models  with all options when ordered with G or Q contact material.

Q contact material standard with C, Z terminations.

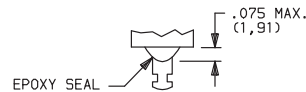
8551 & 8552 available with Q contact material only.

## SEAL



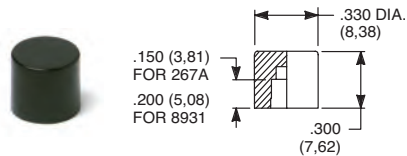
**E**

EPOXY SEAL



## REPLACEMENT HARDWARE

Cap for 0.157" dia. plungers



PART NO.

**267A01000** WHITE  
**267A02000** BLACK  
**267A03000** RED  
**267A09000** GRAY

85X2T, 8534T models only

Material: Nylon  
Finish: Gloss

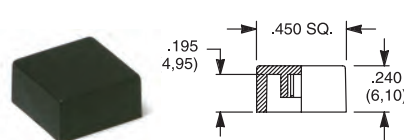
PART NO.

**893101000** WHITE  
**893102000** BLACK  
**893103000** RED  
**893109000** GRAY

85X1T, 8532T1, 8533T, 8534T1 models only

Material: Nylon  
Finish: Gloss

Cap, J80, J81 & J 82 options only



PART NO.

**448901000** WHITE  
**448902000** BLACK  
**448903000** RED  
**448909000** GRAY

Material: Nylon  
Finish: Gloss or matte

Frame



PART NO.

**613302263** BLACK

Material: Nylon  
Finish: Matte



Third Angle  
Projection

Other colors available, consult Customer Service Center.



Dimensions are shown: Inches (mm)  
Specifications and dimensions subject to change

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## AVAILABLE HARDWARE

### Frame

#### PART NO.

**615602263** BLACK

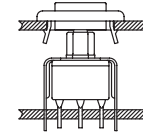
Material: Nylon  
Finish: Matte



**NOTE:** Additional nuts, locking rings and lockwashers available separately, see section "Technical Data and Additional Hardware".  
Other colors available, consult Customer Service Center.

Frames snap into panel opening and are independent from switch mounting. Accurate positioning of the PC mounted switch relative to the panel opening is necessary to provide proper clearance between actuator and frame. Available in two basic styles and four panel thicknesses .047-.125 in. Material: Nylon. Finish: Matte.

### TYPICAL APPLICATION



.047" (1,19) PANEL THK.

.062" (1,57) PANEL THK.

.090" (2,29) PANEL THK.

.125" (3,18) PANEL THK.

#### PART NO.

**432502263**

#### PART NO.

**432602263**

#### PART NO.

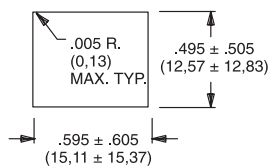
**432702263**

#### PART NO.

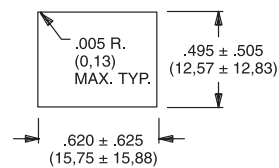
**432802263** BLACK

### PANEL MOUNTING

For part numbers  
4325xxxxx, 4326xxxxx

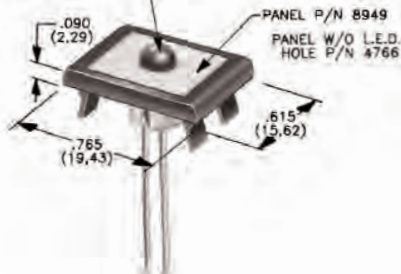


For part numbers  
4327xxxxx, 4328xxxxx



### Panel Inserts

L.E.D. (.200 DIA. (5,08)) SNAPS  
SECURELY INTO INSERT (P/N 8949).  
HEIGHT DEPENDS ON L.E.D. USED.



Above frames (part nos. 432XXXXXX) are also available with insert which accepts LED for indicator light assembly. Order insert separately from frame. Blank insert panel (without hole for LED) also available. **LED not included.**

PANEL INSERT  
WITH HOLE FOR LED

#### PART NO.

**894902000**

BLANK PANEL INSERT  
WITHOUT HOLE FOR LED

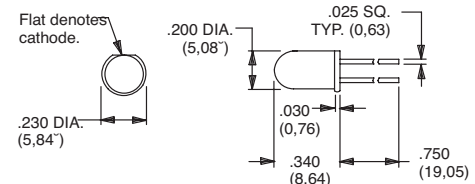
#### PART NO.

**476602000** BLACK

Special colors, custom markings available, consult Customer Service Center.

## LED INFORMATION

**Process Information:** Soldering to LED leads must be completed within 5 seconds at 500°F (260°C) maximum.  
LEDs are not supplied with J82 option. LED snaps into switch frame surrounding actuator and is wired externally.



Suggested LED for J82 option.  
Dimensions for reference only.



Dimensions are shown: Inches (mm)  
Specifications and dimensions subject to change