



# 8500 Series Subminiature Pushbutton Switches

Pushbutton  
A



## 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.



### Switch Function

- 8531** SPST Off-Mom. 1 Amp
- 8532** SPST Off-Mom. 1 Amp
- 8533** SPST On-Mom. 1 Amp
- 8534** SPST On-Mom. 1 Amp
- 8551** SPST Off-Mom. 3 Amps
- 8552** SPST Off-Mom. 3 Amps

### Actuator or Plunger

- M** .150" high
- J81** Snap-in with frame
- J82** Snap-in with frame for LED
- S** .210" high
- T** 15/32 bushing
- T1** 15/32 bushing with frame (8532 and 8534 only)

### Terminations

- Z** Solder lug
- AV\*** Right angle, PC thru-hole
- C** PC Thru-hole

### Contact Material

- Q** Silver
- B** Gold
- G** Gold over silver

### Seal

- E** Epoxy
- D** No epoxy seal

### Cap or Plunger Color

- 2** Black
- 1** White
- 3** Red
- 9** Gray

### Frame Color

- 2** Black
- NONE** Models without frame

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



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

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A  
Pushbutton

## SWITCH FUNCTION

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

### SPST



Part number shown: 8531MZQE2

SP	<b>8532</b>	1 AMP	OFF	MOM.	.050 (1,27) TYP.	6 oz (170g) TYP.	N.O.
	<b>8552</b>	3 AMPS					

### SPST



Part number shown: 8532MZQE2

SP	<b>8533</b>	1 AMP	ON	MOM.	.080 (2,03) TYP. with pretravel .057 (1,45) TYP.	11.5 oz (456 g) TYP.	N.C. with pretravel
	<b>8534</b>	1 AMP	ON	MOM.			

### SPST



Part number shown: 8533MZQE2

MOM. = Momentary

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



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**C&K**



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Pushbutton

A

## PLUNGER



**M** .150" HIGH PLUNGER



**S** .210" HIGH PLUNGER



PANEL MOUNTING



OPTION CODE	PLUNGER COLOR
<b>2</b>	BLACK
<b>3</b>	RED

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

CAP COLOR

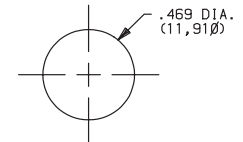
## ACTUATOR



**T** 15/32 BUSHING



PANEL MOUNTING



OPTION CODE	CAP COLOR
<b>2</b>	BLACK
<b>1</b>	WHITE
<b>3</b>	RED
<b>9</b>	GRAY

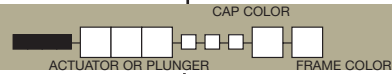
**NOTE:** No frame color choice required.

**T1** 15/32 BUSHING WITH FRAME

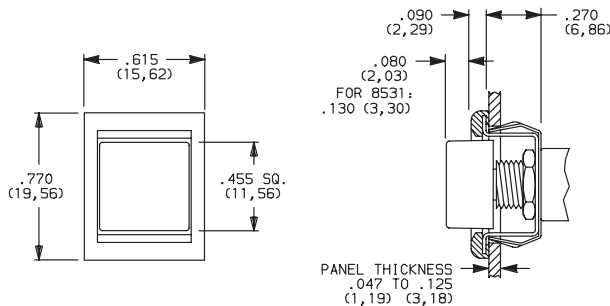


**NOTE:** No frame color choice required. Available with 8532 and 8534 models only.

## ACTUATOR—SNAP-IN FRONT MOUNT



**J81** SNAP-IN WITH FRAME



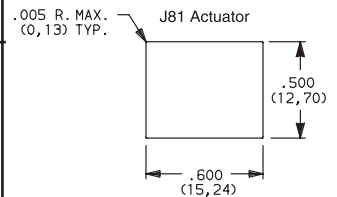
OPTION CODE	CAP AND FRAME COLOR
<b>2</b>	BLACK

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

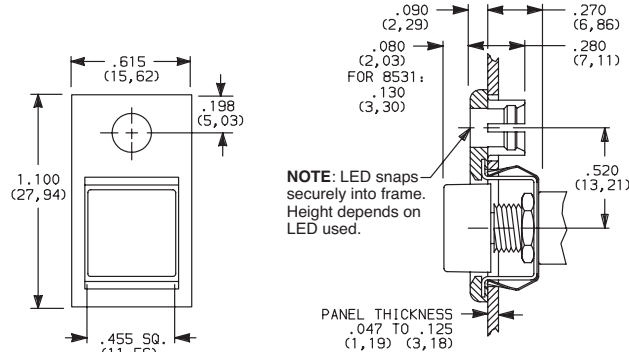
One mounting nut and lockwasher supplied with all actuators.

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

PANEL MOUNTING

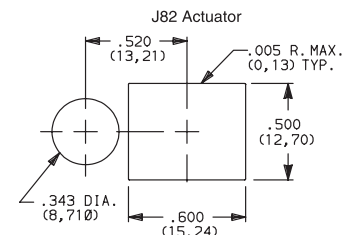


**J82** SNAP-IN WITH FRAME FOR LED



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

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



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



# 8500 Series Subminiature Pushbutton Switches



A  
Pushbutton

## TERMINATIONS

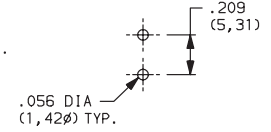
### Z SOLDER LUG



### 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. 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.		PART NO.	
<b>267A01000</b>	WHITE	<b>893101000</b>	WHITE
<b>267A02000</b>	BLACK	<b>893102000</b>	BLACK
<b>267A03000</b>	RED	<b>893103000</b>	RED
<b>267A09000</b>	GRAY	<b>893109000</b>	GRAY

85X2T, 8534T models only  
Material: Nylon  
Finish: Gloss

85X1T, 8532T1, 8533T, 8534T1 models only  
Material: Nylon  
Finish: Gloss

### Cap, J80, J81 & J 82 options only



PART NO.	
<b>448901000</b>	WHITE
<b>448902000</b>	BLACK
<b>448903000</b>	RED
<b>448909000</b>	GRAY

Material: Nylon  
Finish: Gloss or matte  
Other colors available, consult Customer Service Center.

### Frame



PART NO.	
<b>613302263</b>	BLACK

Material: Nylon  
Finish: Matte



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

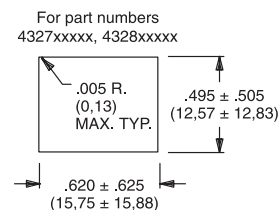
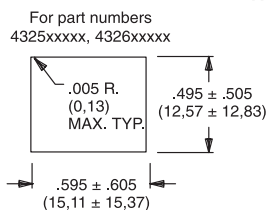


.090" (2,29) PANEL THK.      .125" (3,18) PANEL THK.

**PART NO.**  
**432702263**

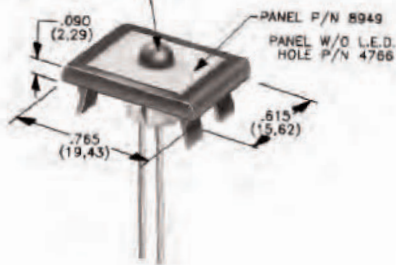
**PART NO.**  
**432802263** BLACK

### PANEL MOUNTING



### 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**

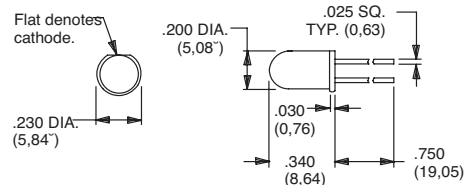
BLANK PANEL INSERT  
WITHOUT HOLE FOR LED

**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.



Third Angle  
Projection

Dimensions are shown: Inches (mm)  
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