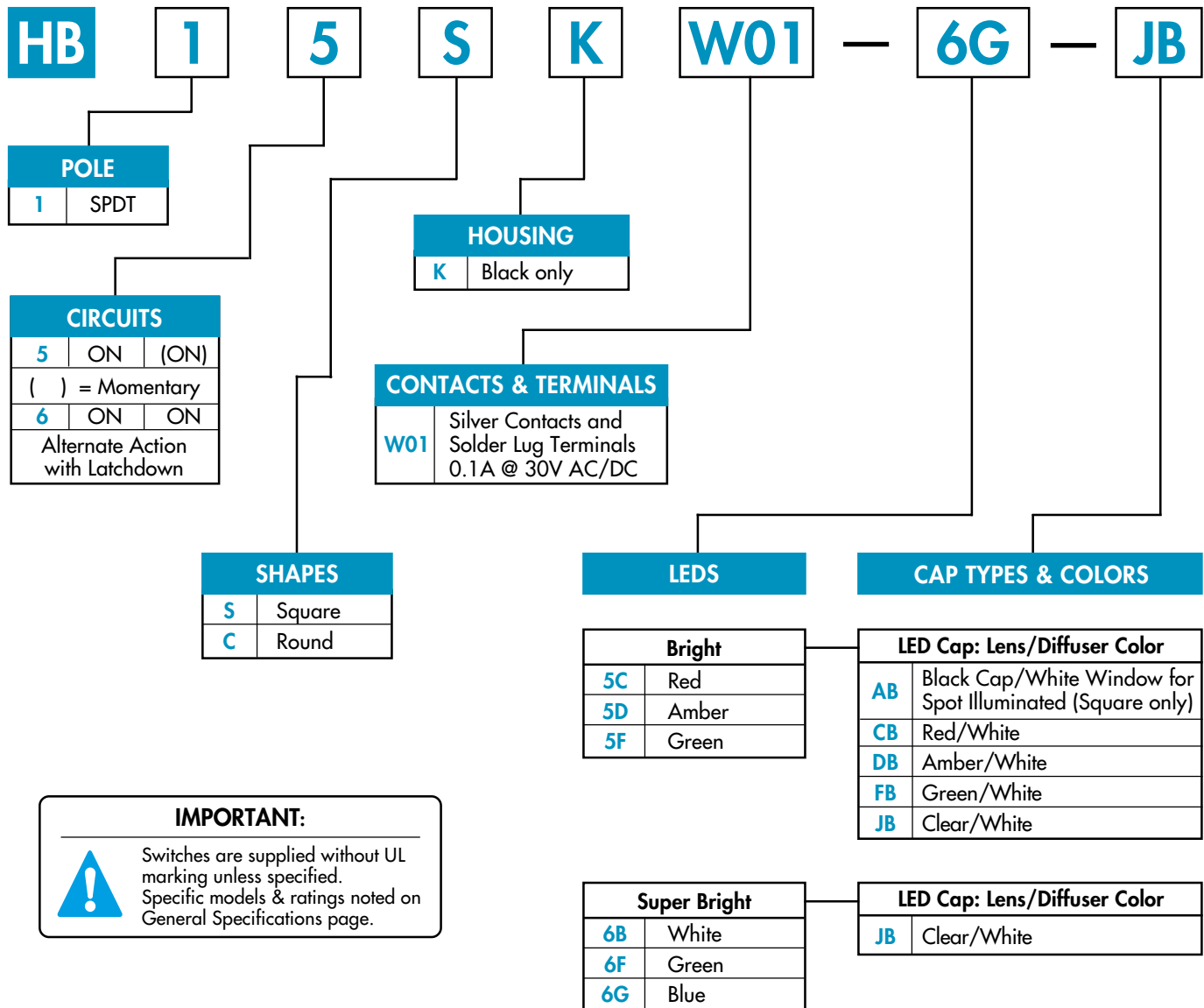


## TYPICAL SWITCH ORDERING EXAMPLE

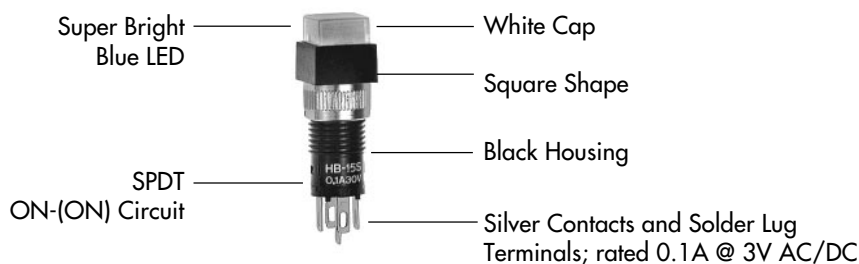


**IMPORTANT:**

Switches are supplied without UL marking unless specified. Specific models & ratings noted on General Specifications page.

### DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

**HB15SKW01-6G-JB**



### GENERAL SPECIFICATIONS

#### Electrical Capacity (Resistive Load)

**Power Level (code W):** 0.1A maximum @ 30V AC/DC

#### Other Ratings

**Contact Resistance:** 50 milliohms maximum  
**Insulation Resistance:** 100 megohms minimum @ 500V DC  
**Dielectric Strength:** 500V AC minimum  
**Mechanical Life:** 100,000 operations minimum  
**Electrical Life:** 50,000 operations minimum  
**Nominal Operating Force:** 350 grams  
**Contact Timing:** Nonshorting (break before make)  
**Travel:** 2.2mm (.087") pretravel; 0.8mm (.031") overtravel; 3.0mm (.118") total travel

#### Materials & Finishes

**Housing:** Glass fiber reinforced polyamide  
**Base:** Glass fiber reinforced polyamide  
**Movable Contact:** Phosphor bronze with silver plating  
**Stationary Contacts:** Phosphor bronze with silver plating  
**Common Terminal:** Phosphor bronze with silver plating  
**End Terminals:** Phosphor bronze with silver plating  
**Lamp Terminals:** Phosphor bronze with silver plating

#### Environmental Data

**Operating Temp Range:** -25°C through +50°C (-13°F through +122°F) for Illuminated  
 -25°C through +70°C (-13°F through +158°F) for Nonilluminated  
**Humidity:** 90 ~ 95% humidity for 96 hours @ 40°C (104°F)  
**Vibration:** 10 ~ 55Hz with peak-to-peak amplitude of 1.5mm traversing the frequency range  
 & returning in 1 minute; 3 right angled directions for 2 hours  
**Shock:** 50g acceleration (tested in 6 right angled directions, with 5 shocks in each direction)





#### Installation

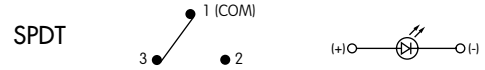
**Mounting Torque:** 5.0 kg/cm (4.34 lb/in) for round mounting nut  
**Cap Installation Force:** 1.0 kg (2.2 lb) maximum  
**Soldering Time & Temperature:** 3 seconds @ 350°C or 5 seconds @ 270°C  
**Process Seal:** Not available

#### Standards & Certifications

**UL Recognized:** All models recognized at 0.1A @ 30V AC/DC; UL File No. E44145

### POLES & CIRCUITS

		Plunger Position ( ) = Momentary		Connected Terminals		Throw & Power/Lamp Schematics
Pole	Model	Normal 	Down 	Normal 	Down 	Notes: Terminals are marked with NO, NC, C, L. LED circuit is isolated and requires external power source.
SP	HB15 HB16	ON ON	(ON) ON	1-3	1-2	



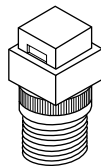
### SHAPES



**.354" Square Shroud**

Square shroud for use with square cap.

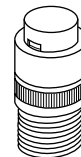
The shroud is an integral part of the switch body.



**.354" Diameter Shroud**

Round shroud for use with round cap.

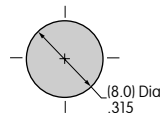
The shroud is an integral part of the switch body.



### Panel Cutout & Mounting

Recommended Panel Thickness:

0.5mm ~ 5.0mm (.020" ~ .197")



Overtightening the mounting nut may damage the switch housing.

### HOUSING



**Housing available in black only.**

### CONTACT MATERIALS, RATINGS, & TERMINALS



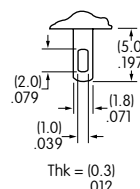
**Silver Contacts**

**Power Level**

**0.1A maximum @ 30V AC/DC**

#### Solder Lug






The .039" x .079" oblong hole accommodates one solid or one stranded 20-gauge wire or two 22-gauge wires.



#### PCB Mounting

Solder lug terminals are spaced .100" X .200". This enables PCB mounting which can be accomplished by elongating PC board holes to .080".

### LED COLORS & SPECIFICATIONS

Bright AT633				Bright			Super Bright			Unit	
				5C	5D	5F	6B	6F	6G		
			Color	Red	Amber	Green	White	Green	Blue		
Super Bright AT624 Blue AT629 White AT630 Green		Forward Peak Current		$I_{FM}$	30	30	25	30	30	30	mA
		Continuous Forward Current		$I_F$	20	20	20	20	20	20	mA
		Forward Voltage		$V_F$	1.85	2.0	2.2	3.6	3.5	3.6	V
		Reverse Peak Voltage		$V_{RM}$	5	5	5	5	5	5	V
		Current Reduction Rate Above 25°C		$\Delta I_F$	0.40	0.42	0.38	0.50	0.50	0.50	mA/°C
		Ambient Temp Range			-25°C ~ +50°C			-25°C ~ +50°C			
Electrical specifications are determined at a basic temperature of 25°C. LED circuit is independent of switch operation. Single element LED is colored in OFF state. For dimension drawings see the <a href="#">Accessories &amp; Hardware Index</a> . If the source voltage is greater than rated voltage, a ballast resistor is required. The ballast resistor calculation and more lamp detail are shown in the Supplement; see <a href="#">Supplement Index</a> .											
	No Lamp Code N indicates that no lamp is used with AT4035 and AT4036.										

### CAP TYPES & COLORS

Color Codes:    **A** Black    **B** White    **C** Red    **D** Amber    **E** Yellow    **F** Green    **G** Blue

#### Colored Cap for Bright LED

##### Cap Colors Available:

AB

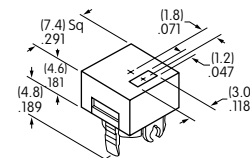
 Black Cap/  
White Translucent Window

Square only

Material: Polycarbonate

Finish: Matte

**AT4052**  
Spot Illuminated



##### Lens/Diffuser

##### Colors Available:

CB

 Red/White

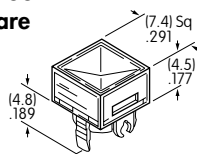
DB

 Amber/White

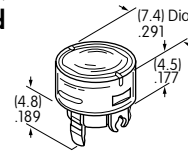
FB

 Green/White

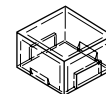
**AT4166**  
Square



**AT4167**  
Round



Material: Polycarbonate    Finish: Glossy



Transparent Colored  
Lens



Translucent  
White Diffuser



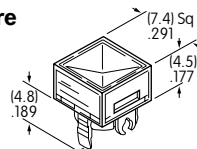
Colored LED  
AT633

#### White Cap for Bright & Super Bright LED

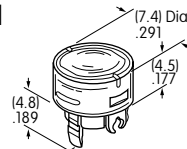
JB

 Clear Lens/  
White Diffuser

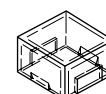
**AT4031**  
Square



**AT4032**  
Round



Material: Polycarbonate  
Finish: Glossy



Transparent Clear  
Lens



Translucent  
White Diffuser



Colored LED  
AT624, AT629,  
AT630, or AT633

### NONILLUMINATED CAP

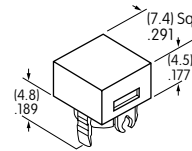
#### Cap Colors Available:



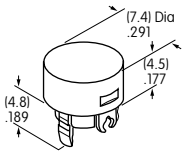
Material: Polycarbonate

Finish: Glossy

#### AT4035 Square

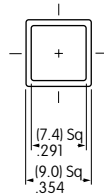


#### AT4036 Round



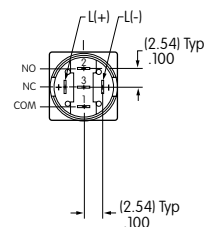
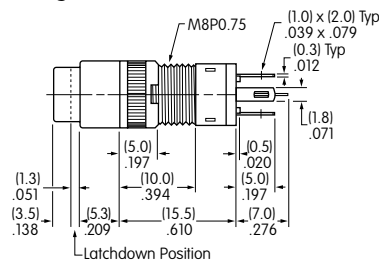
### TYPICAL SWITCH DIMENSIONS

#### Square

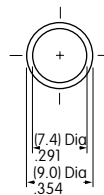


HB15SKW01-5C-CB

#### Single Pole

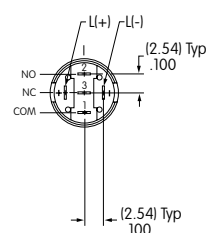
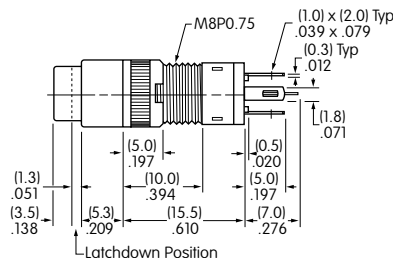


#### Round



HB16CKW01-5C-CB

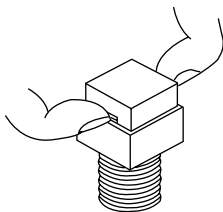
#### Single Pole



### ASSEMBLY INSTRUCTIONS

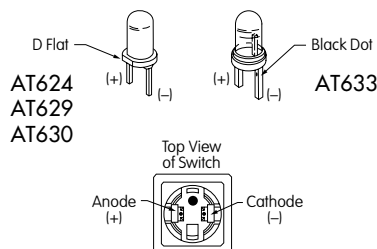
#### Cap Removal

1. Have cap in extended position (not latchdown) for alternate action models.
2. Use the grip slots on the sides of the cap and pull it out of the switch.



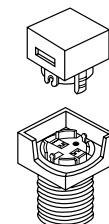
#### LED Polarity & Orientation in Lamp Socket

For AT624, AT629, AT630: Insert the LED with the D flat opposite the black dot molded inside the switch lamp socket. For AT633: Insert the LED with the Black Dot on the terminal to the right.



#### Cap Replacement

1. Match the prongs on the cap base with the projections in the switch, at the same time aligning the spring clips on the cap with the indentations in the switch.
2. Press firmly in place.



#### AT111 Lamping Tool

Lamping Tool AT111 may be used to remove and replace LED.



#### AT110 Socket Wrench

Socket Wrench AT110 may be used to tighten the mounting nut.



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