

# Distinctive Characteristics

Full face or spot illumination with incandescent lamps or multi-element LEDs, with or without resistors.

Choice of super bright LEDs in white, green, and blue as well as bright LEDs in red, amber, and green.

Combination bezel-barrier is an integral part of the switch and prevents accidental actuation.

Unique thermoplastic elastomer seal inside caps plus rolled sleeve of nitrile butadiene rubber at joining of housing and inner case, all for added protection to interior mechanism.

Dust and oil tight as well as splashproof panel seal models qualify to IP65 of IEC60529 Standards (similar to NEMA 4 and 13). Panel seal models provided with exterior o-ring.

Distinctive design of snap-action contacts for shock resistance, long life, and sensitive actuation.

High density design to give behind panel depth of less than one inch.

Terminals are epoxy sealed to lock out flux, dust, solvents, and other contaminants.

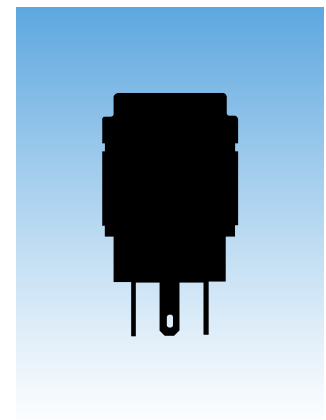
Latchdown for indication of circuit status, plus audible, tactile feedback with smooth, responsive operation.

Nonilluminated models available and shown in the Pushbutton section.

Matching indicators available and shown at the end of Section M.



Actual Size



## General Specifications

### Electrical Capacity (Resistive Load)

**Power Level (silver):** 3A @ 125V AC or 3A @ 250V AC or 3A @ 30V DC  
**Logic Level (gold):** 0.4VA maximum @ 28V AC/DC maximum  
 (Applicable Range 0.1mA ~ 0.1A @ 20mV ~ 28V)  
 Note: Find additional explanation of operating range in Supplement section.

### Other Ratings

**Contact Resistance:** 50 milliohms maximum for silver; 100 milliohms maximum for gold  
**Insulation Resistance:** 200 megohms minimum @ 500V DC  
**Dielectric Strength:** 1,000V AC minimum between contacts for 1 minute minimum;  
 1,500V AC minimum between contacts & case for 1 minute minimum  
**Mechanical Life:** 1,000,000 operations minimum for momentary circuit  
 200,000 operations minimum for maintained circuit  
**Electrical Life:** 100,000 operations minimum  
**Nominal Operating Force:** Single pole: 1.47N for nonsealed; 1.67N for sealed  
 Double pole: 2.75N for nonsealed; 2.94N for sealed  
**Contact Timing:** Nonshorting (break-before-make)  
**Travel:** Pretravel .059" (1.5mm); Overtravel .059" (1.5mm); Total Travel .118" (3.0mm)

### Materials & Finishes

**Housing/Bezel:** Glass fiber reinforced polyamide (UL94V-0)  
**Snap-in Frame:** Stainless steel  
**Base:** Diallyl phthalate resin (UL94V-0)  
**Movable Contactor:** Phosphor bronze with silver or gold plating  
**Movable Contacts:** Silver alloy with silver plating or brass with gold plating  
**Stationary Contacts:** Silver alloy or copper with gold plating  
**Switch Terminals:** Phosphor bronze with tin plating  
**Lamp Terminals:** Phosphor bronze with tin plating

### Environmental Data

**Operating Temp Range:** -25°C through +50°C (-13°F through +122°F)  
**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 (490m/s<sup>2</sup>) acceleration (tested in 6 right angled directions, with 5 shocks in each direction)  
**Sealing:** IP65 of IEC60529 standard for panel seal models

### Installation

**Mounting Torque:** 0.785Nm (6.95 lb•in) maximum  
**Soldering Time & Temperature:** Manual Soldering: See Profile A in Supplement section.

### Standards & Certifications



**Flammability Standards:** UL94V-0 housing & base

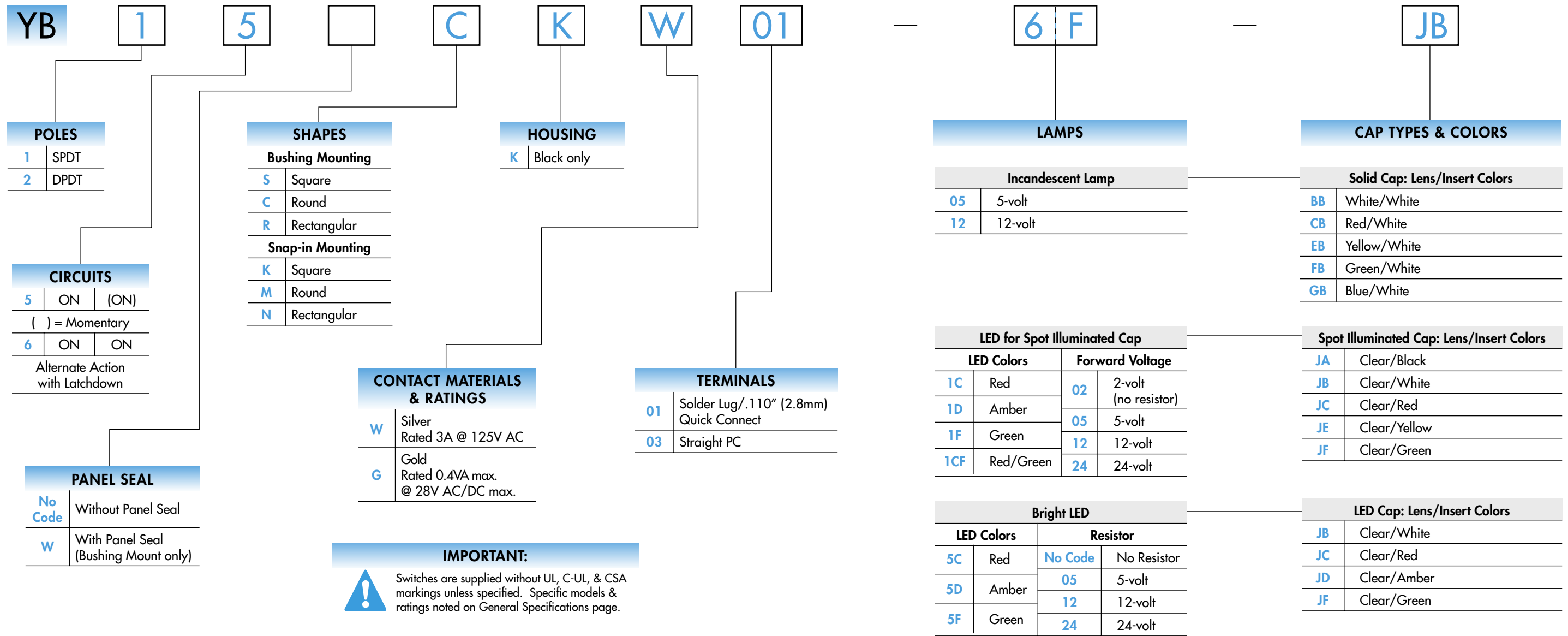


**UL & C-UL Recognized:** All solder lug models recognized at 3A @ 125/250V AC or 0.4VA @ 28V AC/DC maximum;  
 UL File No. WOYR2.E44145; add "/U" to end of part number to order UL mark on switch;  
 UL File No. WOYR8.E44145; add "/C-UL" to end of part number to order C-UL mark on switch.



**CSA Certified:** All solder lug models certified at 3A @ 125/250V AC or 0.4VA @ 28V AC/DC maximum;  
 CSA File Nos. 023535-0-000; add "/C" to end of part number to order CSA mark on switch.

TYPICAL SWITCH ORDERING EXAMPLE




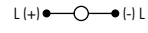
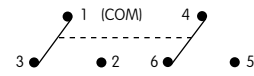
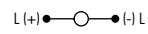
**IMPORTANT:**  
Switches are supplied without UL, C-UL, & CSA markings unless specified. Specific models & ratings noted on General Specifications page.

DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

YB15CKW01-6F-JB



## POLES & CIRCUITS

Pole	Model	Plunger Position ( ) = Momentary		Connected Terminals		Throw & Switch/Lamp Schematics
		Normal	Down	Normal	Down	
SP	YB15 *YB16	ON ON	(ON) ON	1-3	1-2	Notes: Switch is marked with NC, NO, COM, L+, L-. Lamp circuit is isolated and requires external power source.  
DP	YB25 *YB26	ON ON	(ON) ON	1-3 4-6	1-2 4-5	 

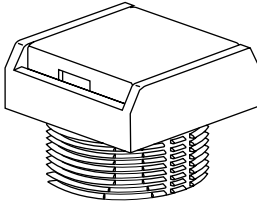
\* When in latched position for the alternate circuit, cap position is .020" (0.5mm) above the built-in bezel.

## PANEL SEAL

**No Code**

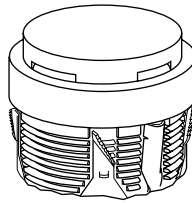
Without Panel Seal

Bushing  
Mounting



Supplied with mounting nut.

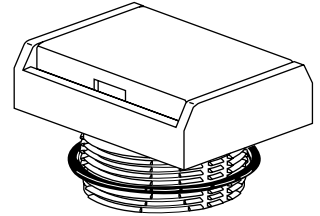
Snap-in  
Mounting



**W**

With Panel Seal

Bushing  
Mounting  
only



Supplied with mounting nut and o-ring AT089.

## SHAPES & MOUNTING TYPES

Bushing Mounting

Snap-in Mounting

**S** Square

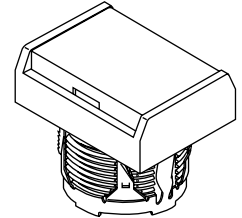
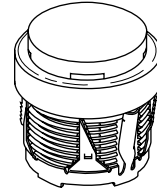
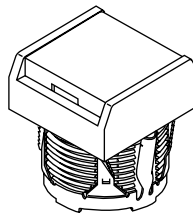
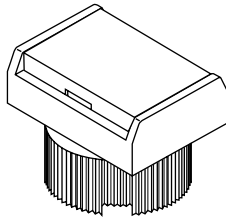
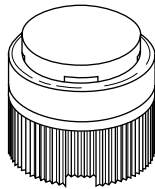
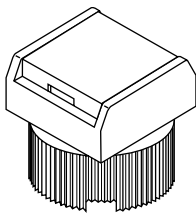
**C** Round

**R** Rectangular

**K** Square

**M** Round

**N** Rectangular



Bezel-barrier is an integral part of the switch body.

## HOUSING

**K**

Black

Housing available in black only. The 1-piece body and bezel-barrier have a matte finish.

## CONTACT MATERIALS & RATINGS

**W**

Silver Contacts

Power Level

3A @ 125/250V AC

**G**

Gold Contacts

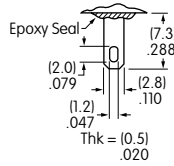
Logic Level

0.4VA max. @ 28V AC/DC max.

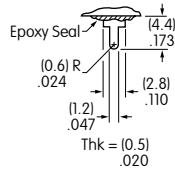
Complete explanation of operating range in Supplement section.

## TERMINALS

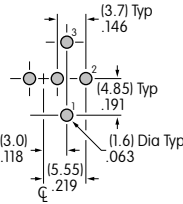
**01** Solder Lug/  
.110" (2.8mm) Quick Connect



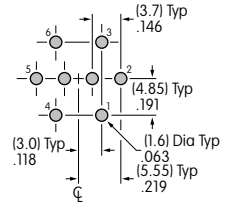
**03** Straight PC



Single Pole



Double Pole



## INCANDESCENT LAMP & SOLID CAP

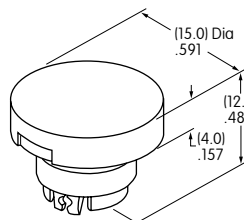
Electrical specifications are determined at a basic temperature of 25°C. Lamp circuit is independent of switch operation.  
For dimension drawing of lamp see the Accessories & Hardware section.

<b>AT611</b>  T-1 Bi-pin		<b>05</b>	<b>12</b>	
	Voltage	V	5V AC	12V AC
	Current	I	115mA	60mA
	MSCP		.150	.150
	Endurance	Hours	7,000 average	
Ambient Temperature Range		-25°C ~ +50°C		

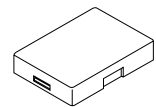
### Solid Cap for Incandescent Lamp

Lens/Insert  
Colors Available:

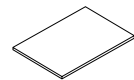
- BB** White/White
- CB** Red/White
- EB** Yellow/White
- FB** Green/White
- GB** Blue/White



**AT3002**  
Round

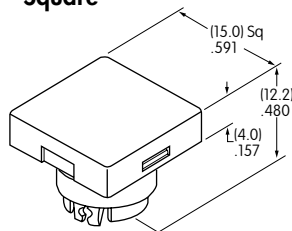


Translucent Colored Lens

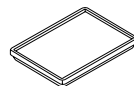
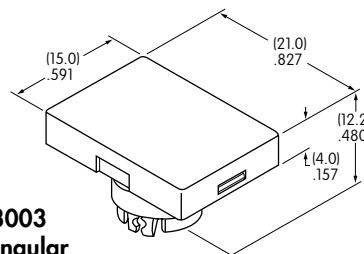


Translucent White Insert

**AT3001**  
Square



**AT3003**  
Rectangular



Translucent White Seal/Filter

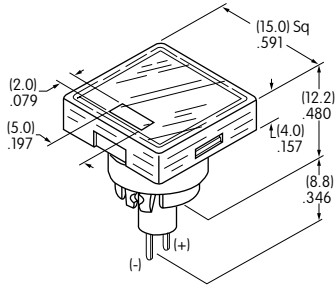
Materials: Polycarbonate (Lens & Insert)  
Thermoplastic Elastomer (Seal/Filter)



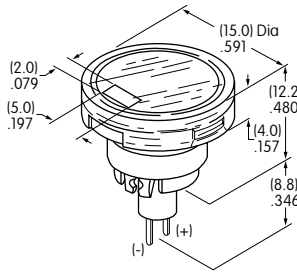
Incandescent Lamp AT611

## SPOT ILLUMINATED CAP WITH BUILT-IN LED

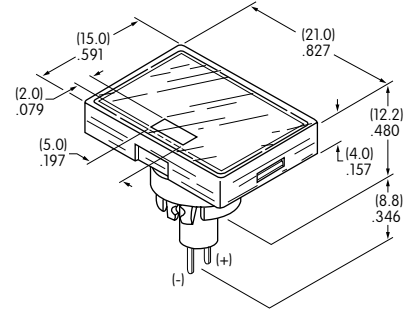
This spot-illuminated cap is factory assembled.



**AT3010**  
Square



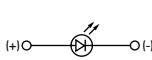
**AT3011**  
Round



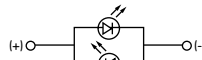
**AT3012**  
Rectangular

Colors Available:					02	05	12	24		
1C	1D	1F	1CF		w/o Resistor	w/Resistor	w/Resistor	w/Resistor	Unit	
Red	Amber	Green	Red/Green							
Forward Peak Current					$I_{FM}$	20	15	15	12	mA
Continuous Forward Current					$I_F$	15	12.5	12.5	10	mA
Forward Voltage					$V_F$	2.1	5	12	24	V
Reverse Peak Voltage (not applicable to bicolor)					$V_{RM}$	5	5	5	5	V
Current Reduction Rate Above 25°C					$\Delta I_F$	0.27	—	—	—	mA/°C
Ambient Temperature Range						-25 ~ +50			°C	

Without Resistor 2-volt

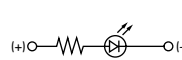


Single Color

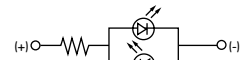


Bicolor

With Resistor 5, 12, 24-volt



Single Color



Bicolor

The electrical specifications shown are determined at a basic temperature of 25°C. LED circuit is isolated and requires external power source. Single color LEDs are colored in OFF state. Bicolor LED is translucent white in OFF state.

If the source voltage exceeds the rated voltage, a ballast resistor is required.

The resistor value can be calculated by using the formula in the Supplement section.

### Lens/Insert

#### Colors Available:

**JA** Clear/Black

**JB** Clear/White

**JC** Clear/Red

**JE** Clear/Yellow

**JF** Clear/Green



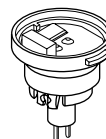
Clear Lens



Colored Insert



Seal



Built-in LED  
(integral part  
of the cap)

Example part number  
when cap is ordered separate from  
switch:

**AT3010F02JA**

for a


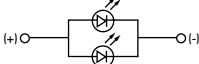
Square Spot Illuminated Cap  
with Green 2-volt LED without resistor  
Clear Lens and Black Insert

Materials: Polycarbonate (Lens & Insert) and Thermoplastic Elastomer (Seal)


## BRIGHT LED & LED CAPS

The electrical specifications shown are determined at a basic temperature of 25°C.  
 LED circuit is isolated and requires external power source.  
 If the source voltage exceeds the rated voltage, a ballast resistor is required.  
 The resistor value can be calculated by using the formula in the Supplement section.

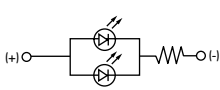
### Electrical Specifications for Bright LED without Resistor

<b>Bright AT628</b>      T-1 Bi-pin	<b>Colors Available:</b> <span style="border: 1px solid black; padding: 2px;">5C</span> Red <span style="border: 1px solid black; padding: 2px;">5D</span> Amber <span style="border: 1px solid black; padding: 2px;">5F</span> Green <span style="border: 1px solid black; padding: 2px;">No Code</span> No Resistor	Unit				
	LED Colors	Red	Amber	Green		
	Forward Peak Current	$I_{FM}$	40	40	40	mA
	Continuous Forward Current	$I_F$	26	26	26	mA
	Forward Voltage	$V_F$	1.9	2.0	2.2	V
	Reverse Peak Voltage	$V_{RM}$	4	4	4	V
	Current Reduction Rate Above 25°C	$\Delta I_F$		0.50		mA/°C
	Ambient Temperature Range		-25 ~ +50			°C

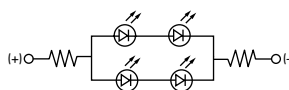
### Electrical Specifications for Bright LED with Resistor

<b>Bright AT634</b>    T-1 ¼ Bi-pin	<b>Colors Available:</b> <span style="border: 1px solid black; padding: 2px;">5C</span> Red <span style="border: 1px solid black; padding: 2px;">5D</span> Amber <span style="border: 1px solid black; padding: 2px;">5F</span> Green <span style="border: 1px solid black; padding: 2px;">05</span> <span style="border: 1px solid black; padding: 2px;">12</span> <span style="border: 1px solid black; padding: 2px;">24</span>	Unit				
	Forward Peak Current	$I_{FM}$	—	—	—	mA
	Continuous Forward Current	$I_F$	25	20	10	mA
	Forward Voltage	$V_F$	5	12	24	V
	Reverse Peak Voltage	$V_{RM}$	4	8	16	V
	Current Reduction Rate Above 25°C	$\Delta I_F$	—	—	—	mA/°C
	Ambient Temperature Range		-25 ~ +50			°C

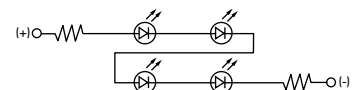
AT634  
5-volt,  
2-element  
with Resistor



AT634  
12-volt,  
4-element  
with Resistor



AT634  
24-volt,  
4-element  
with Resistor

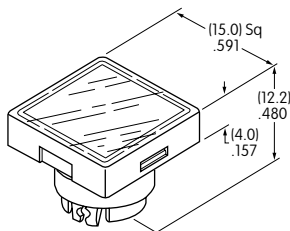


### Cap for Bright LED

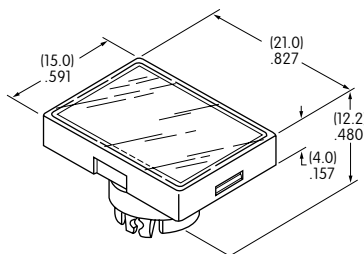
Lens/Insert  
Colors Available:

- JB Clear/White
- JC Clear/Red
- JD Clear/Amber
- JF Clear/Green

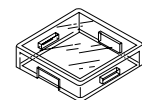
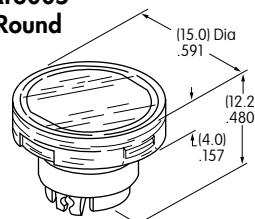
**AT3004**  
Square



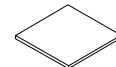
**AT3006**  
Rectangular



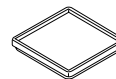
**AT3005**  
Round



Transparent Clear Lens



Translucent Colored Insert



Translucent White Seal/Diffuser




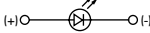

Bright LEDs  
AT628 AT634

Materials: Polycarbonate (Lens & Insert)  
Thermoplastic Elastomer (Seal/Diffuser)

## SUPER BRIGHT LED & LED CAPS

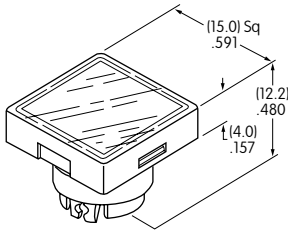
The electrical specifications shown are determined at a basic temperature of 25°C.  
 LED circuit is isolated and requires external power source.  
 If the source voltage exceeds the rated voltage, a ballast resistor is required.  
 The resistor value can be calculated by using the formula in the Supplement section.

### Electrical Specifications for Super Bright LED

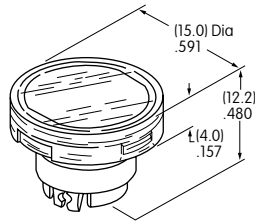
Super Bright AT625G Blue AT631B White AT632F Green	 	Colors:	6B	6F	6G	Unit
			White	Green	Blue	
 T-1 Bi-pin	Forward Peak Current	$I_{FM}$	30	30	30	mA
	Continuous Forward Current	$I_F$	20	20	20	mA
	Forward Voltage	$V_F$	3.6	3.5	3.6	V
	Reverse Peak Voltage	$V_{RM}$	5	5	5	V
	Current Reduction Rate Above 25°C	$\Delta I_F$	0.50			mA/°C
	Ambient Temperature Range		-25 ~ +50			°C

### Cap for Super Bright LED

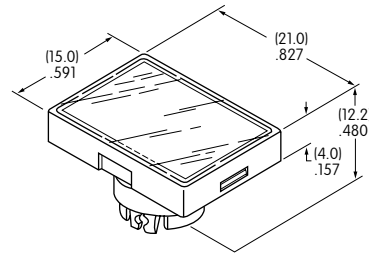
**AT3014**  
Square



**AT3015**  
Round

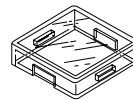


**AT3016**  
Rectangular

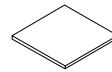


Lens/Insert  
Colors Available:

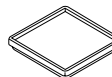
**JB** Clear/White



Transparent Clear Lens



Translucent White Insert



Translucent White Seal/Diffuser



Super Bright LEDs  
AT625 AT631  
AT632



Materials: Polycarbonate (Lens & Insert)  
Thermoplastic Elastomer (Seal/Diffuser)

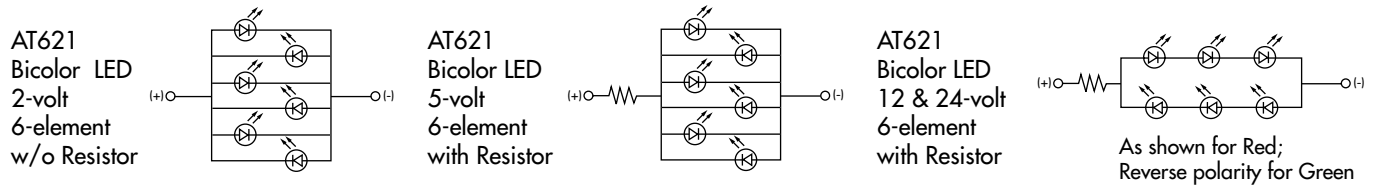


## BICOLOR LED & LED CAPS

The electrical specifications shown are determined at a basic temperature of 25°C.  
 LED circuit is isolated and requires external power source.  
 If the source voltage exceeds the rated voltage, a ballast resistor is required.  
 The resistor value can be calculated by using the formula in the Supplement section.

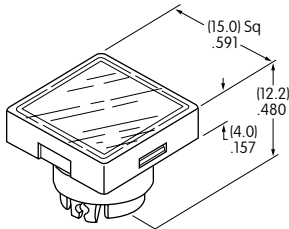
### Electrical Specifications for Bicolor LED

<b>Bicolor AT621</b>  Red/Green  T-1 1/2 Bi-pin	Bicolor LED is translucent white in OFF state.		02	05	12	24	Unit
	Forward Peak Current	$I_{FM}$	60	60	20	12	mA
	Continuous Forward Current	$I_F$	45	45	15	10	mA
	Forward Voltage	$V_F$	2.1	5	12	24	V
	Current Reduction Rate Above 25°C	$\Delta I_F$	0.80	—	—	—	mA/°C
	Ambient Temperature Range		-25 ~ +50				°C

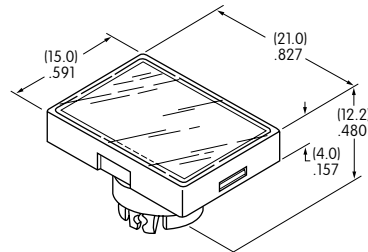


### LED Caps

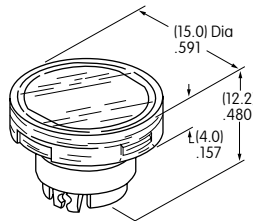
**AT3004 Square**



**AT3006 Rectangular**

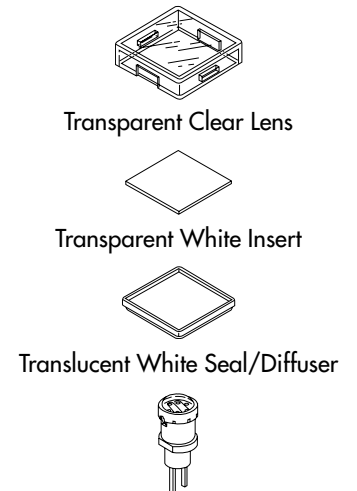


**AT3005 Round**



Lens/Insert  
Colors Available:

 Clear/White

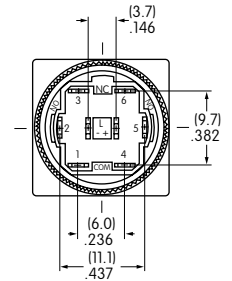
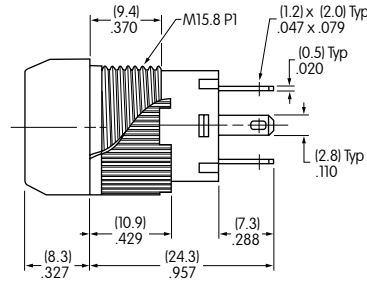
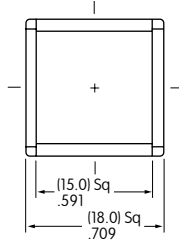


Materials: Polycarbonate (Lens & Insert)  
 Thermoplastic Elastomer (Seal/Diffuser)

### TYPICAL SWITCH DIMENSIONS

#### Square • Bushing Mounting

#### Single & Double Pole

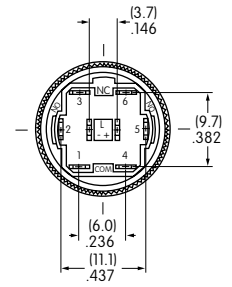
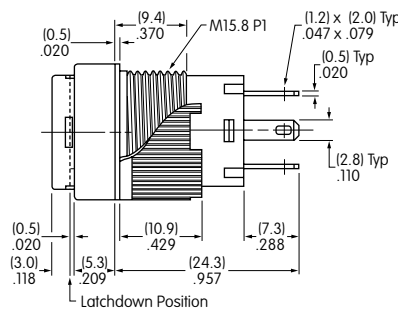
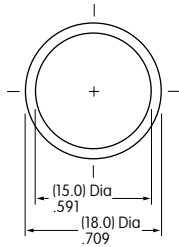


YB15KW01-12-CB

Single pole models do not have terminals 4, 5, & 6.

#### Round • Panel Seal

#### Single & Double Pole

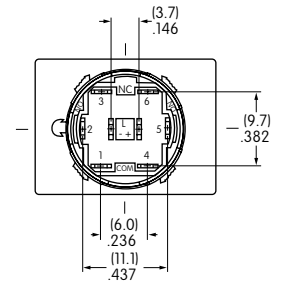
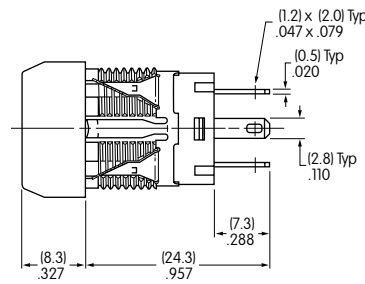
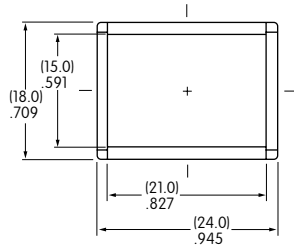


YB26WCKW01-12-EB

Single pole models do not have terminals 4, 5, & 6.

#### Rectangular • Snap-in Mounting

#### Single & Double Pole



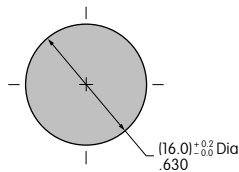
YB15NKW01-5C-JC

Single pole models do not have terminals 4, 5, & 6.

### PANEL THICKNESS & CUTOUTS

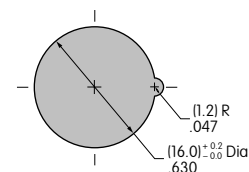
#### Bushing & Panel Seal Mount

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



#### Snap-in Mount

Panel Thickness  
.039" ~ .138"  
(1.0mm ~ 3.5mm)



## OPTIONAL ACCESSORIES

Dust Covers and Protective Guards reduce depth of switch behind panel by .047" (1.2mm).

**Panel Thickness Range with Dust Cover or Protective Guards:**

Bushing Mounting  
.020" ~ .150" (0.5mm ~ 3.8mm)

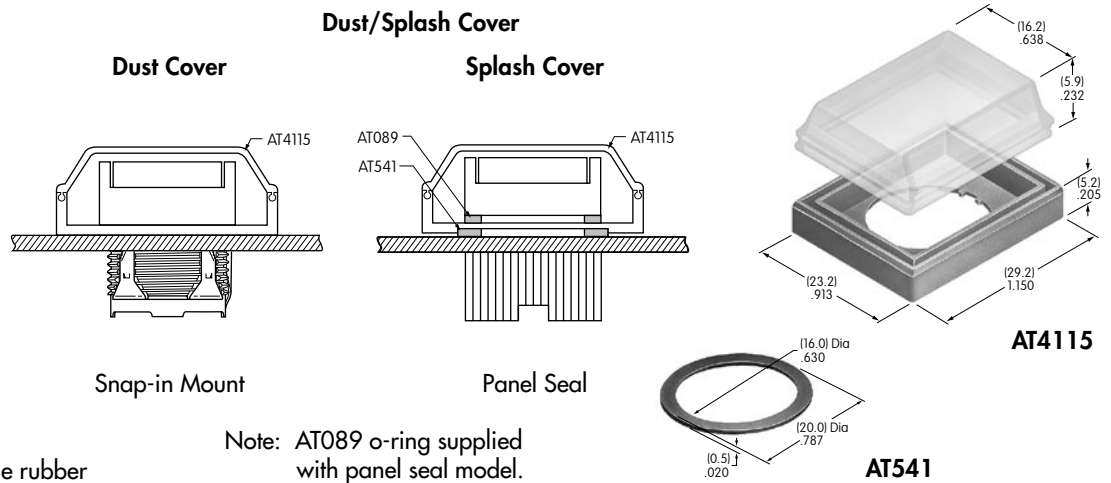
Snap-in Mounting  
.020" ~ .091" (0.5mm ~ 2.3mm)

Panel Seal  
.020" ~ .118" (0.5mm ~ 3.0mm)

### AT4115 Dust Cover for Snap-in or Bushing Mount

### AT4115 Splash Cover and AT541 O-ring for Bushing Mount

**Materials:**  
Lid: Polyvinyl Chloride  
Base: Polyamide  
O-ring: Nitrile butadiene rubber



### Dust/Splash Cover

#### Dust Cover

#### Splash Cover

#### Snap-in Mount

#### Panel Seal

Note: AT089 o-ring supplied with panel seal model.

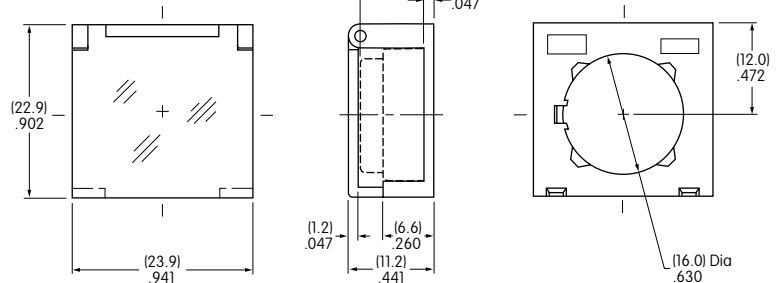
### AT4072 Protective Guard

Opens 90°  
Closes manually

**Materials:**  
Lid: Polycarbonate  
Base: Glass Fiber Reinforced Polycarbonate



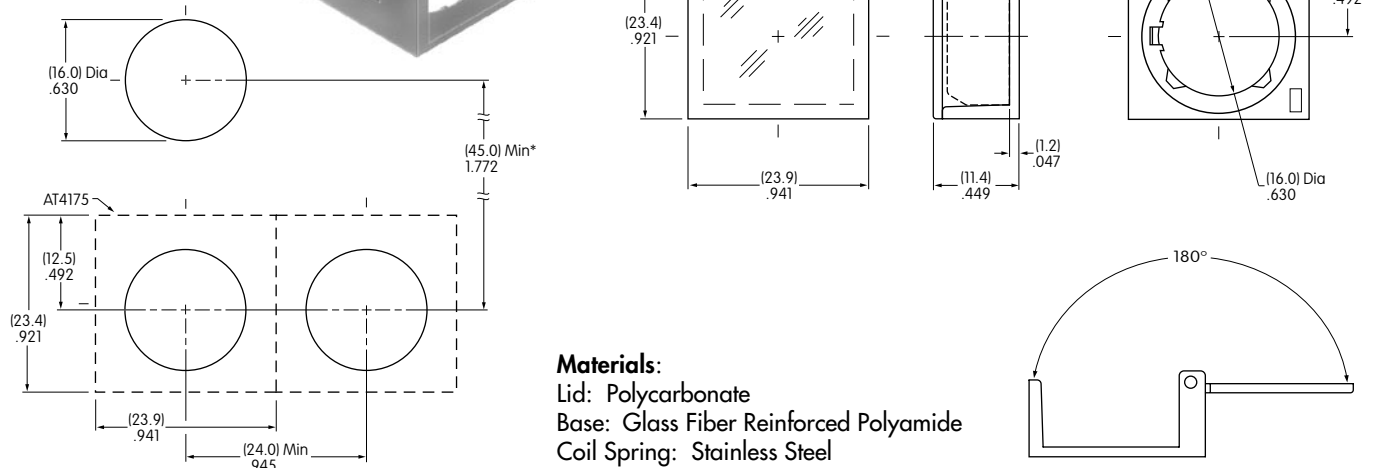
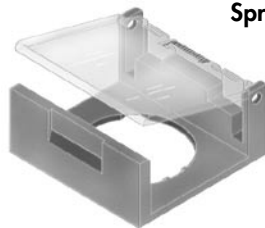
### Protective Guard



### Spring Loaded Protective Guard

### AT4175 Spring Loaded Protective Guard

Opens 180°  
Closes automatically

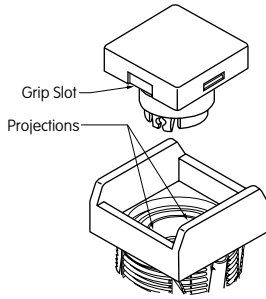


**Materials:**  
Lid: Polycarbonate  
Base: Glass Fiber Reinforced Polyamide  
Coil Spring: Stainless Steel

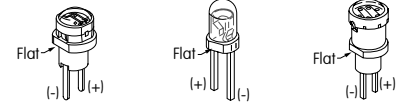
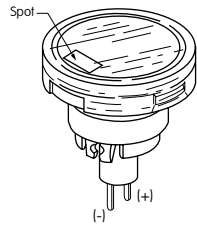
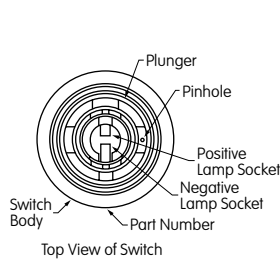
\* Minimum dimension allows opening of cover to 180°

### ASSEMBLY INSTRUCTIONS

#### Cap Assembly



#### LED Polarity & Orientation in Lamp Socket



Spot Illuminated Cap with Built-in LED

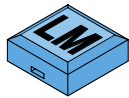
LED AT628 AT634

LEDs AT625G AT631B AT632F

LED AT621

The following installation tools are available: AT106 Socket Wrench for bushing mounting (Overtightening the mounting nut AT092 may damage the switch housing.); AT109 Cap Extractor; AT111 Lamping Tool. Further details and dimensions are shown in the Accessories and Hardware section.

### LEGENDS



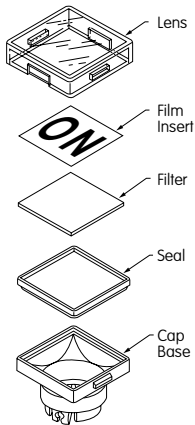
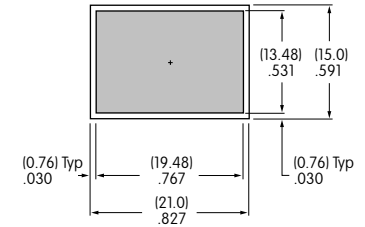
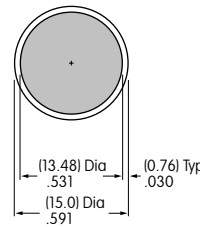
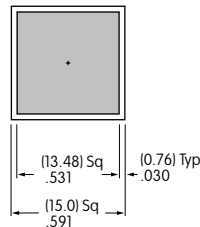
Easily create and submit your own legends using our new on-line Legend Maker.

Visit [www.nkkswitches.com](http://www.nkkswitches.com)

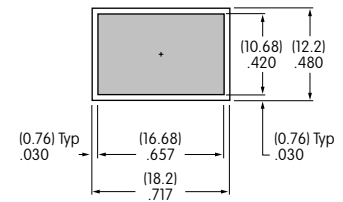
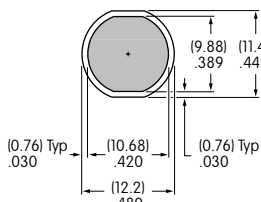
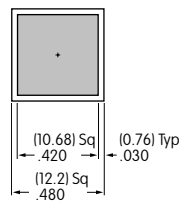
For other legend support options, customers may either contact the factory and request the YB Legend Packet, or utilize the general information and basic specifications presented below.

**Recommended Methods:** Laser Etch on clear lens, Screen Print or Pad Print on lens. Epoxy based ink is recommended.

#### Shaded Areas Are Printable Areas for Lens



#### Shaded Areas Are Printable Areas for Film Insert



**Film Material and Thickness:**  
Clear Polyester, 4 mil max.

**Recommended Print Method:**  
Screen Print; Epoxy based ink is recommended.

#### Additional Methods

Additional methods for legends are engraving the lens and laser printing on film inserts. Maximum depth for engraving is .012" (0.3 mm) on the cap lens. Enamel paint is recommended to fill the engraved area.