

# Change Notice

# HB Series

## Changes for AT633 Bright LEDs

Type of Change:

- Engineering     Part Number  
 Product         Appearance

The AT633 bright LEDs for HB Illuminated Pushbuttons and Indicators will be undergoing changes. There will be revisions to electrical values and dimensions, and they will apply to red, amber and green LEDs for standard or custom switches and indicators. Following is the comparison between the specifications before and after the changes, and below compares the physical differences and dimension change.

Effected standard part numbers are on page 2.



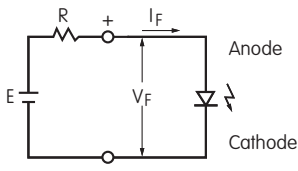
HB Series Pushbutton with AT633C LED

### CHANGES TO LED SPECIFICATIONS FOR AT633

Electrical specifications are determined at a basic temperature of 25°C.		Before Change			After Change		
		<b>C</b>	<b>D</b>	<b>F</b>	<b>C</b>	<b>D</b>	<b>F</b>
	Color	Red	Amber	Green	Red	Amber	Green
Maximum Forward Current	$I_{FM}$	30mA	30mA	30mA	30mA	30mA	30mA
Typical Forward Current	$I_F$	20mA	20mA	20mA	20mA	20mA	20mA
Forward Voltage	$V_F$	1.95V	2.0V	2.1V	<b>2.1V</b>	<b>2.05V</b>	2.1V
		$I_F = 20mA$	$I_F = 20mA$	$I_F = 20mA$	$I_F = 20mA$	$I_F = 20mA$	$I_F = 20mA$
Maximum Reverse Voltage	$V_{RM}$	5V	5V	5V	<b>10V</b>	<b>10V</b>	<b>10V</b>
Current Reduction Rate Above 25°C	$\Delta I_F$	0.42mA/°C	0.42mA/°C	0.42mA/°C	<b>0.40mA/°C</b>	<b>0.40mA/°C</b>	<b>0.40mA/°C</b>
Ambient Temperature Range		-25°C ~ +50°C			-25°C ~ +50°C		

#### Notes

- The LED circuit is isolated and requires an external power source.
- If the source voltage is greater than the LED's rated voltage, a ballast resistor must be connected in series with the LED. The resistor value can be calculated by using the formula shown here.
- The positional relationship changes between the LED terminals and the D flat.
- There are no changes to switches' external dimensions.
- Contact information is below if more details are needed.



$$R = \frac{E - V_F}{I_F}$$

Where: R = Resistor Value (Ohms)  
 E = Source Voltage (V)  
 V<sub>F</sub> = Forward Voltage (V)  
 I<sub>F</sub> = Forward Current (A)

### CHANGES FOR AT633 LEDs

Before Change	After Change

#### Effective Date

Changes for AT633 Bright LEDs will be effective April 2020.

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Contact No. 358



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# Changes for AT633 Bright LEDs

### Effected Standard Part Numbers

#### Bright LEDs

AT633C	AT633D	AT633F
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#### HB15 Switches

#### HB16 Switches

HB15SKW01-5C-AB	HB15SKW01-5F-JB	HB16SKW01-5C-AB	HB16SKW01-5F-JB
HB15SKW01-5D-AB	HB15CKW01-5C-CB	HB16SKW01-5D-AB	HB16CKW01-5C-CB
HB15SKW01-5F-AB	HB15CKW01-5D-DB	HB16SKW01-5F-AB	HB16CKW01-5D-DB
HB15SKW01-5C-CB	HB15CKW01-5F-FB	HB16SKW01-5C-CB	HB16CKW01-5F-FB
HB15SKW01-5D-DB	HB15CKW01-5C-JB	HB16SKW01-5D-DB	HB16CKW01-5C-JB
HB15SKW01-5F-FB	HB15CKW01-5D-JB	HB16SKW01-5F-FB	HB16CKW01-5D-JB
HB15SKW01-5C-JB	HB15CKW01-5F-JB	HB16SKW01-5C-JB	HB16CKW01-5F-JB
HB15SKW01-5D-JB	---	HB16SKW01-5D-JB	---

#### HB01 Indicators

#### HB02 Indicators

HB01KW01-5C-CB	HB01KW01-5C-JB	HB02KW01-5C-CB	HB02KW01-5C-JB
HB01KW01-5D-DB	HB01KW01-5D-JB	HB02KW01-5D-DB	HB02KW01-5D-JB
HB01KW01-5F-FB	HB01KW01-5F-JB	HB02KW01-5F-FB	HB02KW01-5F-JB

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