## Contact No. 287

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## Change Notice

## Change to LED Specifications for HB2 Illuminated Pushbuttons

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Type of Change: <br> | $\boxtimes$ Engineering | $\square$ Part Number |
| :--- | :--- |
| $\boxtimes$ Product | $\boxtimes$ Appearance |

}

The HB2 Illuminated Pushbuttons will have changes to the LED specifications for bicolors Red/Yellow and Red/Green. Also, the dimensions of the LED and the LED holder will be modified. These revisions, however, will not be visible, as they are inside the switch case. These changes will effect all models, both standard and custom. The specification changes are outlined below, followed by effected standard part numbers.


HB2 Pushbutton

## LED COLORS \& SPECIFICATIONS

LEDs are supplied as an integral part of illuminated devices and are not available separately. The electrical specifications shown here are determined at a basic temperature of $25^{\circ} \mathrm{C}$.

|  | Before Change |  |  |  | After Change |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Yellow or Green | CE | Bicolor ed/Yellow | CF | Bicolor d/Green | CE | Bicolor ed/Yellow | CF | Bicolor ed/Green |
| Color | Red | Yellow | Red | Green | Red | Yellow | Red | Green |
| Allowable Power Dissipation $\mathrm{P}_{\mathrm{D}}$ | * 75 mW | *75mW | * 75 mW | * 75 mW | *75mW | * 62.5 mW | *75mW | * 62.5 mW |
| Maximum Forward Current $\mathrm{I}_{\mathrm{FM}}$ | * 30 mA | *30mA | * 30 mA | * 30 mA | *30mA | *25mA | * 30 mA | *25mA |
| Typical Forward Current $\mathrm{I}_{\mathrm{F}}$ | 20 mA | 20 mA | 20 mA | 20 mA | 20 mA | 20 mA | 20 mA | 20 mA |
| Forward Voltage $\mathrm{V}_{\mathrm{F}}$ | 2.0 V | 2.1 V | 2.0 V | 2.1 V | 2.0 V | 2.2 V | 2.0 V | 2.25 V |
| Maximum Reverse Voltage $\mathrm{V}_{\mathrm{RM}}$ | 4 V | 4 V | 4 V | 4 V | 5 V | 5 V | 5 V | 5 V |
| Current Reduction Rate Above $25^{\circ} \mathrm{C}$ | $\begin{gathered} 0.33 \\ \mathrm{~mA} /{ }^{\circ} \mathrm{C} \end{gathered}$ | $\begin{gathered} 0.33 \\ \mathrm{~mA} /{ }^{\circ} \mathrm{C} \end{gathered}$ | $\begin{gathered} 0.33 \\ \mathrm{~mA}{ }^{\circ} \mathrm{C} \end{gathered}$ | $\begin{gathered} 0.33 \\ \mathrm{~mA} /{ }^{\circ} \mathrm{C} \end{gathered}$ | $\begin{gathered} 0.40 \\ \mathrm{~mA} /{ }^{\circ} \mathrm{C} \end{gathered}$ | $\begin{gathered} 0.33 \\ \mathrm{~mA} /{ }^{\circ} \mathrm{C} \end{gathered}$ | $\begin{gathered} 0.40 \\ \mathrm{~mA} /{ }^{\circ} \mathrm{C} \end{gathered}$ | $\begin{gathered} 0.33 \\ \mathrm{~mA} /{ }^{\circ} \mathrm{C} \end{gathered}$ |
| Ambient Temperature Range | $-25^{\circ} \mathrm{C} \sim+50^{\circ} \mathrm{C}$ |  |  |  | $-25^{\circ} \mathrm{C} \sim+50^{\circ} \mathrm{C}$ |  |  |  |

* Value applies to single color illumination for either Red or Green or Red or Yellow. When both colors are illuminated simultaneously, the sum of the currents should not exceed the smallest value of the maximum forward current.


## Notes

- The LED circuit is isolated and requires an 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 shown here.
- There are no changes to any other specifications or external dimensions.

$R=\frac{E-V_{F}}{I_{F}}$
Where: $\mathrm{R}=$ Resistor Value (Ohms) $\mathrm{E}=$ Source Voltage (V)
$\mathrm{V}_{\mathrm{F}}=$ Forward Voltage ( V )
$I_{F}=$ Forward Current (A)
- Contact the factory if further details are needed.


## PART NUMBERS EFFECTED BY CHANGES TO HB2

HB215SKG03CE-JB
HB215SKG03CF-JB

## Effective Date

Changes to HB2 Illuminated Pushbuttons will be effective February 2017.
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