General Specifications

Electrical Capacity (Resistive Load)

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: 80 milliohms maximum
Insulation Resistance: 500 megohms minimum @ 500V DC
Dielectric Strength: 500V AC minimum for 1 minute minimum
Mechanical Life: 100,000 operations minimum for momentary;
Electrical Life: 100,000 operations minimum
Nominal Operating Force: 1.8N
Travel: Pretravel .051" (1.3mm); Overtravel .020" (0.5mm); Total Travel .071" (1.8mm)

Materials & Finishes

Housing: Glass fiber reinforced polyamide
Base: Glass fiber reinforced polyamide
Movable Contact: Phosphor bronze with gold plating
Switch Terminals: Phosphor bronze with gold plating
Lamp Terminals: Steel with silver plating

Environmental Data

Operating Temperature Range: –25°C through +50°C (–13°F through +122°F)
Humidity: 90 ~ 95% humidity for 240 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^2) acceleration (tested in 6 right angled directions, with 5 shocks in each direction)

Installation

Cap Installation Force: 15.0N (3.37 lbf) maximum downward force on cap

PCB Processing

Soldering: Wave Soldering: See Profile A in Supplement section.
Manual Soldering: See Profile B in Supplement section.
Cleaning: These devices are not process sealed. Hand clean locally using alcohol based solution.

Standards & Certifications

The HB2 pushbuttons have not been tested for UL recognition or CSA certification.
These switches are designed for use in a low-voltage, low-current, logic-level circuit.
When used as intended in a logic-level circuit, the results do not produce hazardous energy.

Distinctive Characteristics

Quiet actuation combined with crisp tactile feedback suited for broadcast equipment.

Full face illumination with choice of red/green or red/yellow bicolor LEDs, as well as simultaneous bicolor illumination which produces amber.

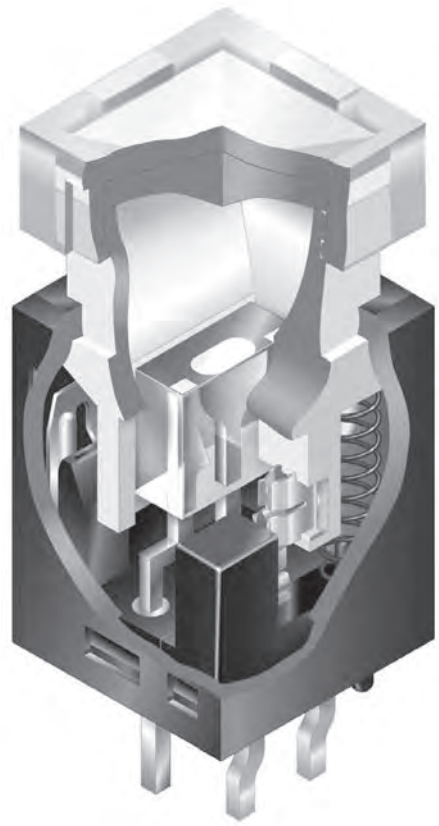
Option of legends on caps or film insert.

Compact design with short body .669" (17.0mm) from PCB to top of cap and .295" (7.5mm) square cap.

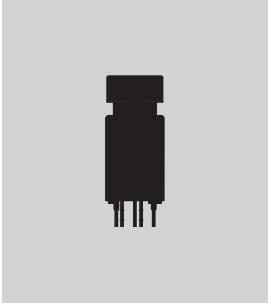
Sliding Twin Crossbar (STC) mechanism provides unequalled logic-level reliability, contact stability, smooth positive detent actuation, and long life.

Crimped power terminals ensure secure PCB mounting and prevent dislodging during soldering.

Suitable applications include broadcast, telecommunication, and medical equipment, as well as measuring instruments, etc.



Actual Size



Series HB2

Subminiature Audio/Video Pushbuttons

TYPICAL SWITCH ORDERING EXAMPLE

HB2 | 1 | 5 | S | K | G03 | CF | — | JB

Pole
1	SPST

Circuit
5	OFF	(ON)

( ) = Momentary

Shape
S	Square

Housing
K	Black

Contacts & Terminals
G03	Gold Contacts and PC Terminals, Rated 0.4VA @ 28V AC/DC

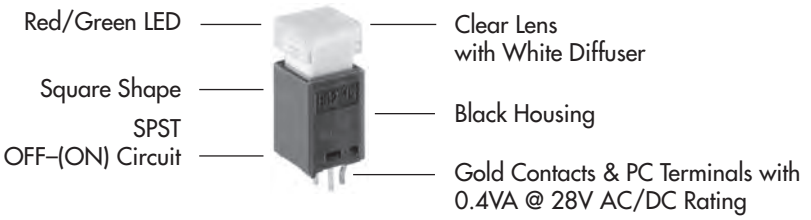
LEDs
CE	Red/Yellow
CF	Red/Green

Amber can be achieved by simultaneous illumination of LEDs.

Cap Colors
JB	Clear Lens/ White Diffuser

DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

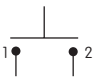
HB215SKG03CF-JB

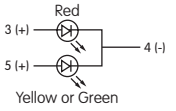


POLE & CIRCUIT

Pole	Model	Plunger Position ( ) = Momentary: Normal	Plunger Position ( ) = Momentary: Down	Connected Terminals: Normal	Connected Terminals: Down	Throw & Switch/Lamp Schematics
SP	**HB215**	OFF	(ON)	OPEN	1-2	SPST

Notes: Switch terminals are not marked on the switch. Red LED terminal is marked with "R". Lamp circuit is isolated and requires external power source.





HOUSING SHAPE & COLOR

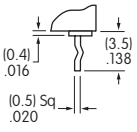
S **.307" (7.8mm) Square Body**

K **Black Housing**

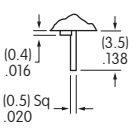
CONTACT MATERIALS, RATINGS & TERMINALS

G03 **Gold Contacts** **Logic Level** **0.4VA maximum @ 28V AC/DC maximum**

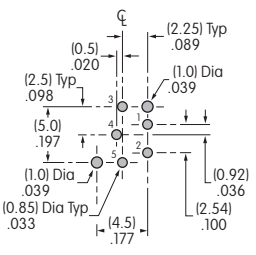
Switch Terminal



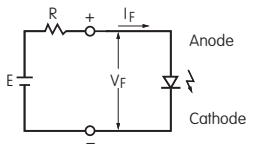
Lamp Terminal



PCB Footprint



BICOLOR LEDS & SPECIFICATIONS



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

Where: R = Resistor Value (Ohms)
E = Source Voltage (V)
V_F = Forward Voltage (V)
I_F = Forward Current (A)

LED is an integral part of the switch.		CE		CF	
Color		Red/Yellow		Red/Green	
		Red	Yellow	Red	Green
Maximum Forward Current	I_{FM}	* 30mA	* 30mA	* 30mA	* 30mA
Typical Forward Current	I_F	20mA	20mA	20mA	20mA
Forward Voltage	V_F	2.0V	2.1V	2.0V	2.1V
Maximum Reverse Voltage	V_{RM}	4V	4V	4V	4V
Current Reduction Rate Above 25°C	ΔI_F	0.33mA/°C	0.33mA/°C	0.33mA/°C	0.33mA/°C
Ambient Temperature Range		–25° ~ +50°C			

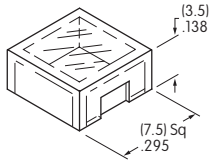
The electrical specifications shown are determined at a basic temperature of 25°C. LED circuit is isolated and requires an external power source. If the source voltage exceeds the rated voltage, a ballast resistor is required. The resistor value can be calculated by using the formula in the Supplement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

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

CAP COLORS

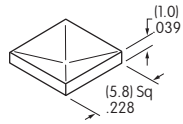
J **Clear Transparent Lens**

AT3081
Square Lens



B **White Translucent Diffuser**

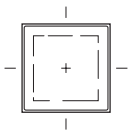
AT3082
Square Diffuser

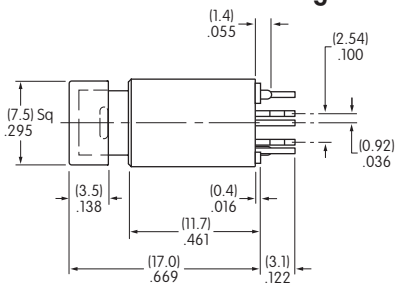


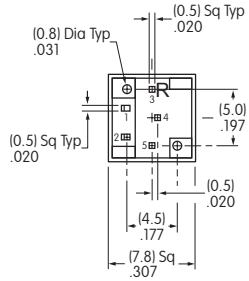
Lens & Diffuser Material: Polycarbonate Lens Finish: Glossy Diffuser Finish: Frosted

TYPICAL SWITCH DIMENSIONS

Single Pole





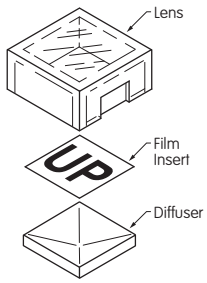


Square

HB215SKG03CF-JB

LEGENDS

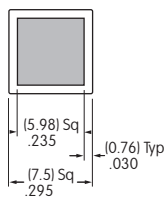
NKK Switches can provide custom legends for caps. Contact factory for more information.



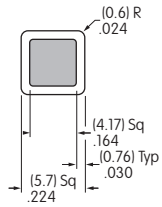
Suggested Printable Area for HB2 Lens & Film Insert

Recommended Methods: Screen Print or Pad Print on Lens; Laser Print on Film Insert.
Epoxy based ink is recommended. Film Insert: Clear Polyester, 4 mil max. thickness

Lens



Film Insert



Shaded areas are printable areas.