

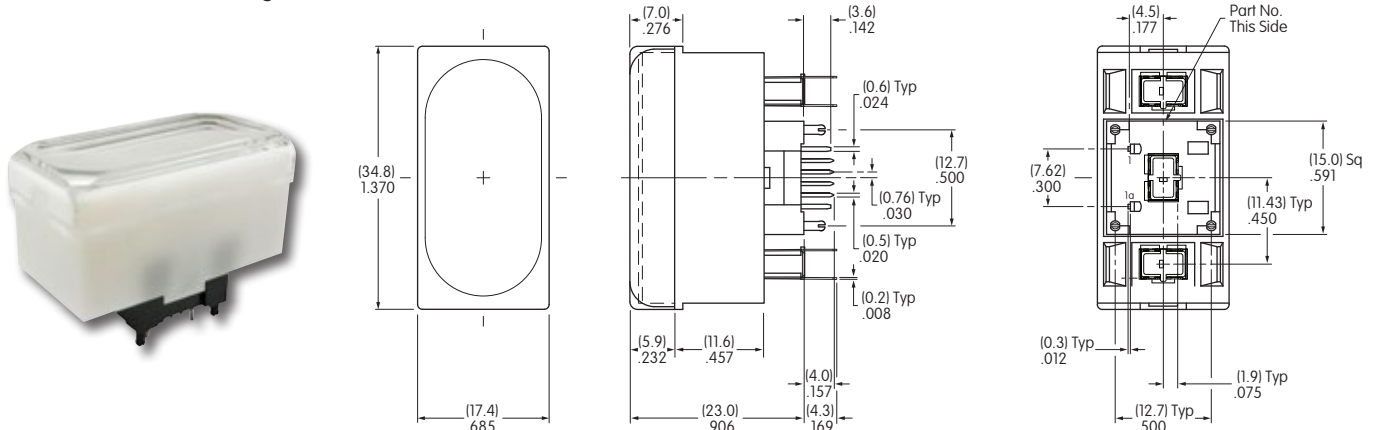
Illuminated Pushbutton with Rectangular Cap & RGB LEDs

Series KP

KP0115ACBKG03RGBJB

Dimensions in mm/inch

Tactile Actuation • Single Pole • PC Terminals



BASE SWITCH		POLE & CIRCUIT				Throw & Switch Schematic	
Part Number	Pole	Model	Plunger Position () = Momentary		Connected Terminals		
			Normal	Down	Normal	Down	Note: Switch terminals "1" & "1a" are actually on the switch.
KP0115ACBKG03RGB	SP	KP0115A	OFF	(ON)	Normally Open	1-1a	

CONTACTS, TERMINALS, & RATINGS

Gold Contacts

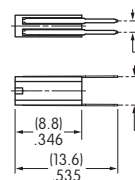
Straight PC Terminals

100mA @ 12V DC

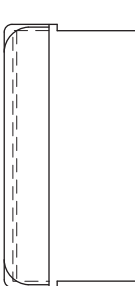
ASSEMBLY & INSTALLATION INSTRUCTIONS



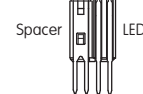
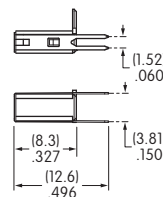
LED



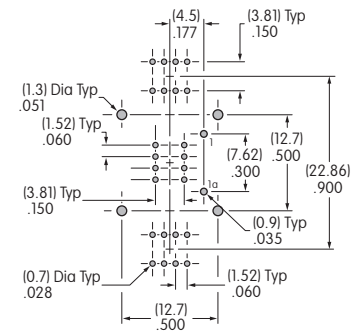
LED & Spacer Assembled



Spacer



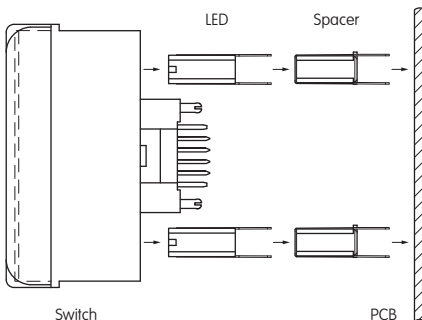
Footprint



The Switch and Rectangular Cap assembly has 3 LEDs to achieve bright and even illumination.

One LED (in center of switch bottom) is an integral part of the switch; the other 2 LEDs and 2 Spacers are packaged separately.

- 1 Solder LEDs and Spacers into PCB.
- 2 Solder switch into PCB making sure that the two outer LEDs and Spacers clear the bottom side opening of the cap.



Base Switch Specifications

Electrical Capacity (Resistive Load)

Low Level: 100mA maximum @ 12V DC

Other Ratings

Contact Resistance:	200 milliohms maximum (at 20mV AC and 10mA)
Insulation Resistance:	100 megohms minimum @ 250V 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 (at center of cap)
Electrical Life:	1,000,000 operations minimum (at center of cap)
Nominal Operating Force:	1.9N maximum (at center of cap)
Travel:	Pretravel .122" (3.1mm); Overtravel .055" (1.4mm); Total Travel .177" (4.5mm)

Materials & Finishes

Plunger/Upper Housing:	Polyacetal
Lower Housing:	Glass fiber reinforced PBT (UL94V-0)
Movable Contact:	Stainless steel with gold plating
Stationary Contacts:	Gold over copper alloy
Switch Terminals:	Brass with tin 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)

PCB Processing

Soldering:	Wave Soldering. Preheat temperature: 110°C @ 40 seconds; Peak temperature: 270°C @ 6 seconds; Cycles: 2 Manual Soldering. 390°C @ 4 seconds; Cycles: 2
Cleaning:	These devices are not process sealed. Hand clean locally using alcohol based solution.

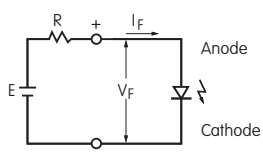
Standards & Certifications

Flammability Standards: UL94V-0 lower housing

The KP Series 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.

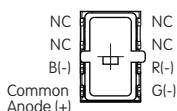
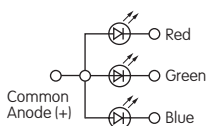
LED SPECIFICATIONS

Electrical specifications are determined at a basic temperature of 25°C. The LED circuit is isolated and requires an external power source. For best results and safe use of the LEDs, the supply voltage should be more than the LED forward voltage. In addition, an appropriately valued ballast resistor should be used. Without the ballast resistor, the LED will be damaged or destroyed. The resistor value can be calculated by using the formula shown here.



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

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



RGB

	Color	Red	Green	Blue
Maximum Forward Current	I _{FM}	30mA	30mA	30mA
Typical Forward Current	I _F	20mA	14mA	9mA
* Forward Voltage	V _F	2.0V	2.9V	2.9V
Power Peak Dissipation	P _D	60mW	80mW	80mW
Maximum Reverse Voltage	V _{RM}	5V	5V	5V
Dominant Wavelength	λ _d	621.5nm	522.5nm	472.5nm
Current Reduction Rate Above 25°C	Δ _{IF}	0.50mA/°C		
Ambient Temperature Range		-25°C ~ +50°C		
* Forward Voltage (V _F) and Dominant Wavelength (λ _d) are Typical Value measured by Typical Forward Current (I _F).				

Protection from ESD is needed in handling, storage and transportation. A conductive mat or metal plate and ESD handset are required when switches are handled. ESD bag or packaging are required for storage.