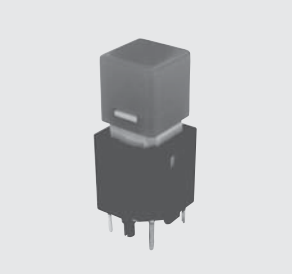
13BL

Illuminated Pushbutton Switches

FUJISOKU SWITCHES

RoHS Compliant



Specification

Rating	Non-switching : 1mA, DC20V Max.or 5mA.DC5V Max. Break current : Same as Non-switching Min. rating : 1mA, DC5V
Contact Resistance	200Ω Max.
Dielectric Strength	100MΩ Min. (DC100V)
Insulation Resistance	AC250Vrms 1minute
Operating Force	060/090 : 0.883～1.57N 110 : 0.981～1.96N
Stroke	060/090 : 1.3mm,110 : 1.5mm
Operating Temperature Range	−10℃～+60℃
Storage Temperature Range	−25℃～+70℃
Electrical life	060/090operations : 300,000, 110operations : 500,000
Material/Finish	Key top : Polycarbonate Housing : Nylon(Brack) Contact terminals : Brass/Gold over Nickel plating LED terminal : Iron/Silver plated

Part Numbering

13BL — 110 — 0 01 0 — X

Series Code: 13BL

Key Top Style	
Code	Style
060	6㎜ sq.
090	9㎜ sq.
110	11㎜ sq.

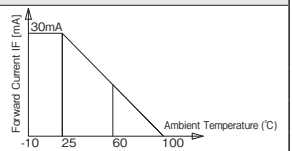
Key Top/LED Color					
Code	Color		Code	Color	
	Key Top	LED		Key Top	LED
00	White	Yellow	03	Green	Green
01	Red	Red	04	Orange	Orange
02	Blue	Green	05	Yellow	Green

Custom legends and engravings available.

LED Max Rating	
Code	Forward Current
0	30mA

Pb Free: X

Type and LED Specification

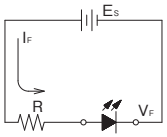
Part No.	Key Top	LED	LED Characteristics					
			Max. Rating (25℃)		Forward Voltage (V_F)		Recommended Forward Current	Ambient Temperature and Allowable Forward Current
			Reverse Voltage (V_R)	Forward Current (I_F)	Standard	Max		
13BL-※※※-0000-X	White	Yellow	4V	30mA	2.2V	2.8V	20mA	
13BL-※※※-0010-X	Red	Red			2.0V			
13BL-※※※-0020-X	Blue	Green			2.1V			
13BL-※※※-0030-X	Green	Green		25mA	2.1V			
13BL-※※※-0040-X	Orange	Orange			2.2V			
13BL-※※※-0050-X	Yellow	Green			2.1V			

LED Reduction Rate 0.40mA/K

(Note 1) ※※※ designate Key Top Style ("060" = 6mm sq., "090" = 9mm sq., "110" = 11mm sq.).
(Note 2) The LED Characteristics show those across the LED output terminals. (Across Terminals 3 and 4)

Precautions

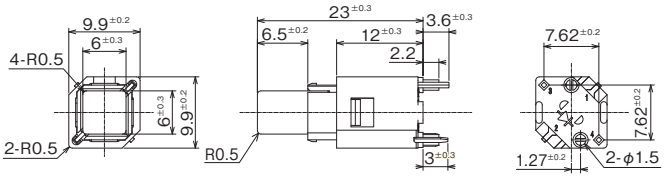
(a) To prevent overcurrent of LED, connect a protective resistance (R) in series.
(b) R: Protective resistance ES: Supply voltage
VF: Forward voltage of LED IF: Forward current of LED



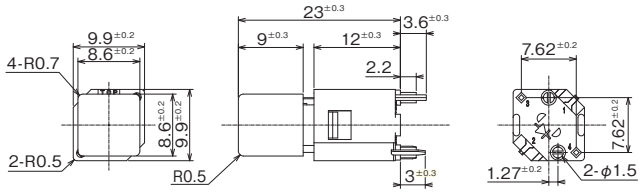
$$R = \frac{E_S - V_F}{I_F}$$

13BL

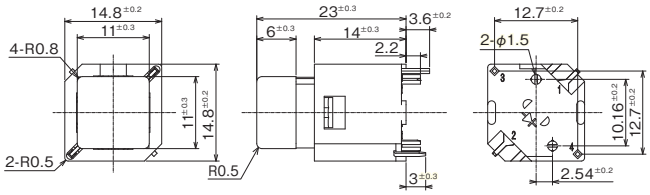
13BL-060 □6 ㎜ Sq. Type



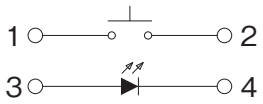
13BL-090 □9mm Sq. Type



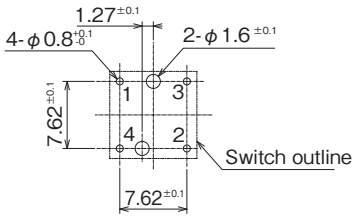
13BL-110 □11 ㎜ Sq. Type



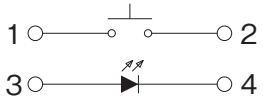
■Circuit



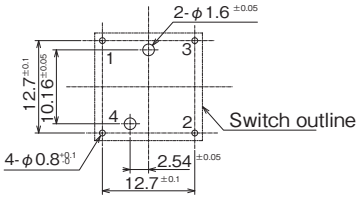
■PC Hole Layouts



■Circuit



■ PC Hole Layouts

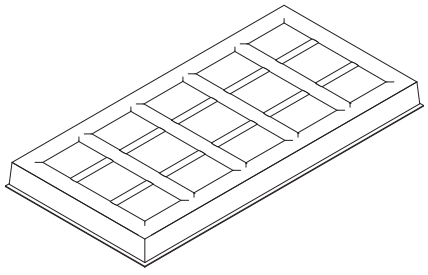


■ Table of Part Numbers

Part No.	Key Top Style	Key Top Color	LED Color	MOQ
13BL-060-0000-X	□6mm sq.	White	Yellow	30
13BL-060-0010-X		Red	Red	
13BL-060-0020-X		Blue	Green	
13BL-060-0030-X		Green	Green	
13BL-060-0040-X		Orange	Orange	
13BL-060-0050-X		Yellow	Green	
13BL-090-0000-X	□9mm sq.	White	Yellow	
13BL-090-0010-X		Red	Red	
13BL-090-0020-X		Blue	Green	
13BL-090-0030-X		Green	Green	
13BL-090-0040-X		Orange	Orange	
13BL-090-0050-X		Yellow	Green	
13BL-110-0000-X	□11mm sq.	White	Yellow	
13BL-110-0010-X		Red	Red	
13BL-110-0020-X		Blue	Green	
13BL-110-0030-X		Green	Green	
13BL-110-0040-X		Orange	Orange	
13BL-110-0050-X		Yellow	Green	

■ Packaging Specifications

30pcs/tray



■ Soldering

(1) Manual soldering
Device：Solder iron
350℃ Max. 3sec. Max.

(2) Auto soldering
Device：Jet wave or dip type
260℃ Max. 10sec. Max.：Twice