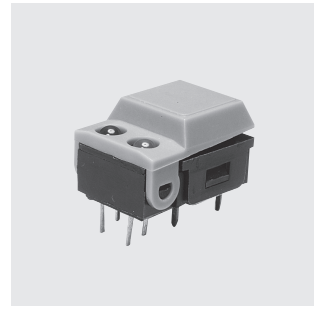


DP1•2•3

Directing Switches



RoHS Compliant

■ Features

1. PC Board Mount

Direct mounting to PC board. The terminal pin layout is in inch pitch.

2. High Contact Reliability

Self-cleaning, twin contact mechanism provides high contact reliability.

3. Light Tactile Feel

Metal contacts provides light tactile feel.

4. Designed For High Density Mounting

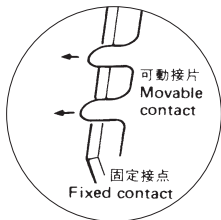
The height to the top of the cap from the PCB surface is as low as 11 to 11.5 mm, and the case profile is designed to allow side-by-side mounting.

5. Wide Variations

The cap style, color, and LED color are available in many variations. A clear cap is available for DP1 and DP3 to insert a label or letter printing inside. (Recommended label size and thickness: 7 x 7 mm and 0.3 mm for DP1-100 and DP3; and 10 x 10 mm and 0.3 mm for DP1-120)

■ Specifications

Rating	Max.	50mA 24VDC
	Min.	0.5mA 20mVDC (Silver plated contacts) 10μ A 20mVDC (Gold plated contacts)
Initial Contact Resistance		20mΩ max. (1.5mA 200μVAC)
Dielectric Strength		250VAC 1 minute (Except between terminals of LED)
Insulation Resistance		100MΩmin. (250VDC)
Electrical Life		200,000 operations
Travel		DP1,DP3 : 0.8±0.3mm DP2 : 1±0.3mm
Operating Force		0.93±0.29N
Operating Temperature Range		−25~+75°C
Storage Temperature Range		−25~+85°C



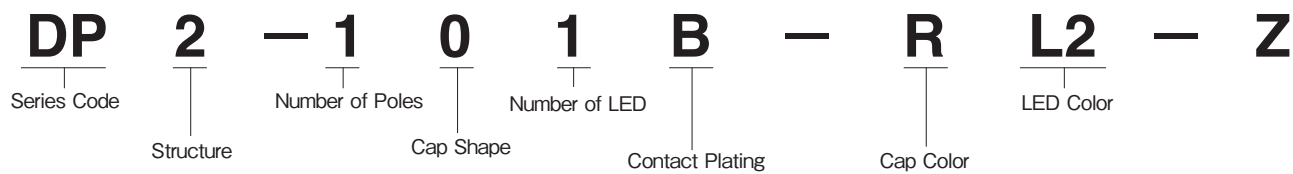
●Twin contacts

●Self cleaning mechanism

When the switch is activated, movable contacts slide in the direction of the arrow to clean the contact points.

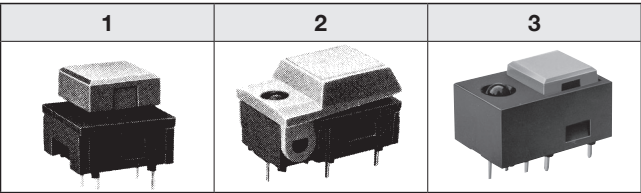
DP1~3

Part Numbering



Code	ContactPlating
None	Silver Plated
B	GoldPlated

Structure



Cap Shape

Fig.	Cap shape
0	Standard
1	DP2 Wide cap
2	DP1 Wide cap

Cap Color

Code	C	G	B	O
Color	Clear	Gray	Blue	Orange

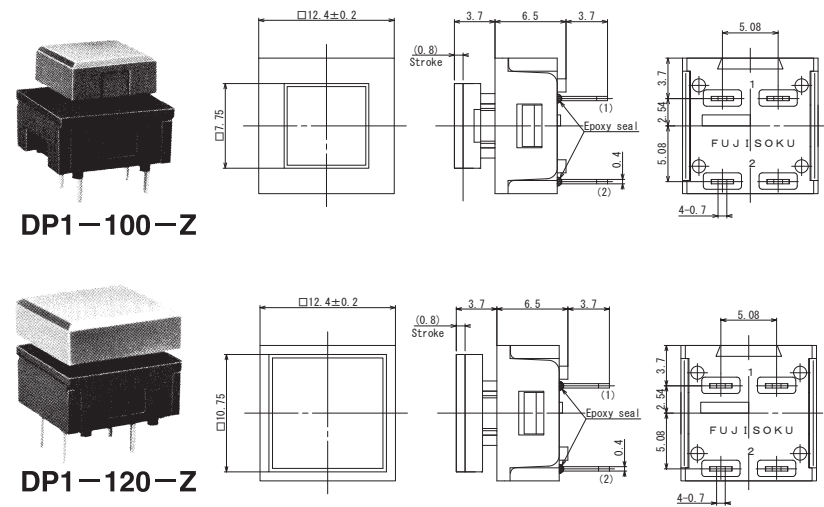
Code	R	K	Y	W
Color	Red	Black	Yellow	White

LED Specifications

Color	Code	I _F	V _F		V _R
			nom.	max.	
Red	L2	20mA	2.1V	2.8V	DC4V
Green	L5	25mA	2.1V	2.8V	DC4V
Yellow	L8	25mA	2.1V	2.8V	DC4V
Red & Red	L22	20mA	2.1V	2.8V	DC4V
Red & Green	L25	Red 20mA Green 25mA	2.1V	2.8V	DC4V

DP1

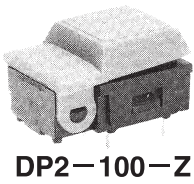
SPST
Without LED (Non-illuminated)



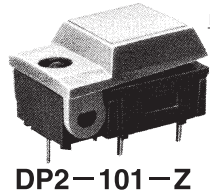
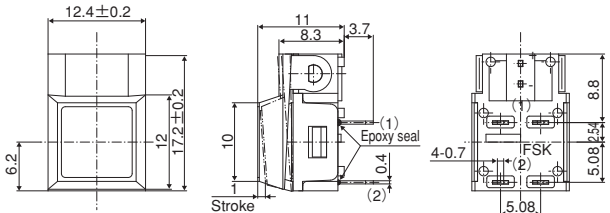
Part No.	Switching function	
DP1-100-Z ☆ DP1-100B-Z DP1-120-Z ★ DP1-120B-Z	OFF	(ON)
Connecting terminals	—	1 - 2

DP2

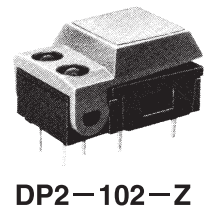
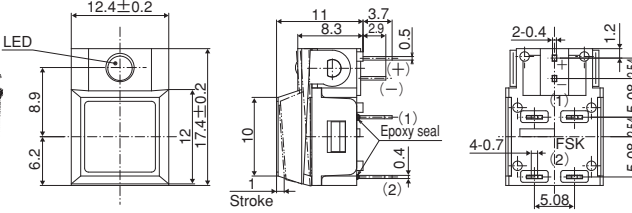
SPST



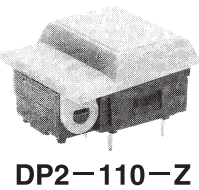
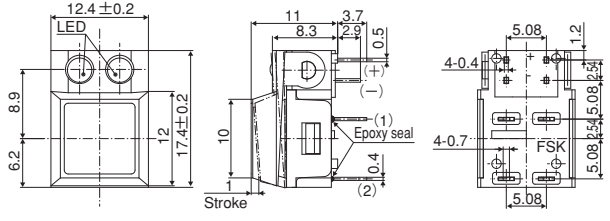
DP2-100-Z



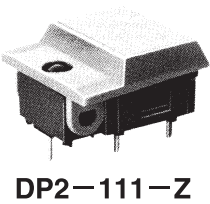
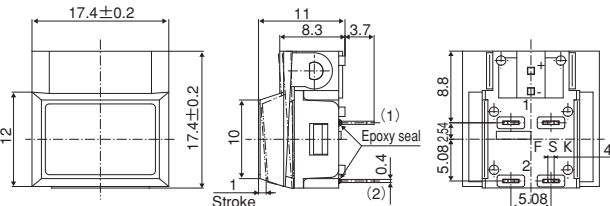
DP2-101-Z



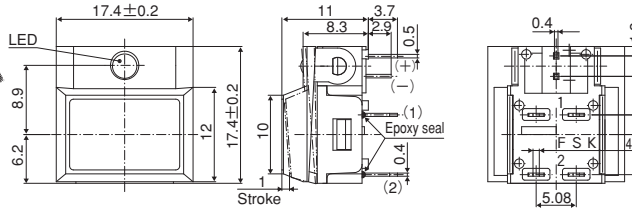
DP2-102-Z



DP2-110-Z



DP2-111-Z



Part No.	Switching function	
DP2-100-□-Z DP2-110-□-Z	OFF	(ON)
Connecting terminals	—	1 - 2
DP2-101-□L■-Z DP2-111-□L■-Z DP2-101B-□L■-Z DP2-111B-□L■-Z	OFF	(ON)
Connecting terminals	—	1 - 2
LED circuit		
DP2-101-□L■-Z DP2-102B-□L■-Z	OFF	(ON)
Connecting terminals	—	1 - 2
LED circuit		

Part Numbering

DP2-102-□L■-Z

DP2-102

LED1/Color

LED2/Color

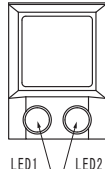
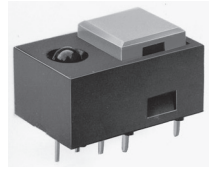


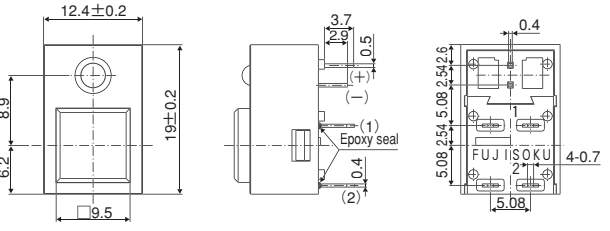
Fig.	Color
2	Red
5	Green
8	Yellow

DP3

SPST



DP3-101-Z



Part No.	Switching function	
DP3-101-□L■-Z DP3-101B-□L■-Z	OFF	(ON)
Connecting terminals	—	1 - 2
LED circuit		

DP1~3

PCB Footprints & Mounting

Part No.	DP1-100-Z	DP1-120-Z	DP2-100-Z DP2-101-Z	DP2-102-Z	DP2-110-Z DP2-111-Z	DP3-101-Z
Footprint Dimensions						
	: panel cut-out dimensions					
Mounting						
	Reference	Reference	Reference		Reference	

Precautions

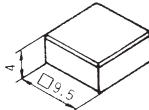
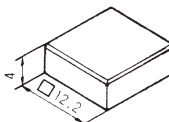
Effective operating range	To operate DP1-120-Z , depress the center of the cap.
LED circuit	<p>Current to be applied to the LED must be lower than the forward current (IF) indicated in the LED Specifications of each switches. Resistance value R should be calculated using the following formula.</p> <div>$R = \frac{E - V_F}{I_F}$<p>Example : E=5V、IF=20mA $R = \frac{5 - 2.1}{0.02} = 145 \Omega$ Use VF=2.1V to calculate.</p></div>

Notes Upon Ordering

Caps for **DP1** and **DP3** are standard accessories.
Please designate a cap upon ordering the switch.
Clear cap is not available for **DP2**.

Standard Accessories

《Supplied with switch》

Part Name		Cap	
Type	DP1—100—Z DP3—101—Z	DP1—120—Z	
Dimensions Materials : Polycarbonate resin			Color code
Clear	140000470157	140000470188	C
White	140000470184	140000470217	W
Red	140000470158	140000470189	R
Black	140000470166	140000470216	K
Gray	140000470159	140000470190	G
Blue	140000470160	140000470191	B
Orange	140000470161	140000470192	O
Yellow	140000470186	140000470218	Y

■Soldering (DP1 ~ 3)

1. Manual soldering

Device: Soldering iron
380°C, Max. 3 seconds, Max.

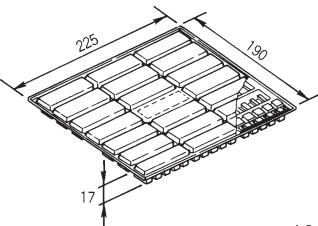
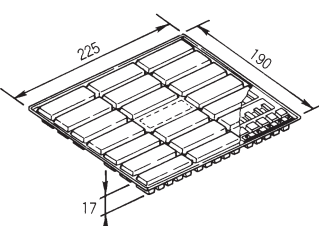
2. Auto soldering

Device: Jet wave or dip type
275±10°C 6 sec, Max.
• Preheat time shall be 120 seconds max. at 80~120°C max.

■Flux Cleaning (DP1 ~ 3)

- (1) Solvents : Fluorine or Alcohol type
- (2) DP1~3 series are not washable. To wash the PC board, clean the soldering surface of the PC board with a brush so that the switch is not exposed to the cleaning solution.
- (3) After soldering, wait until the temperature of the terminals cool down to 90°C or below or until the parts are exposed to room temperature for more than 5 min. before washing.

■Packaging Specifications

DP1・DP2-100/101/102・DP3	DP2-110/111
DP Plastic Pack  100 pcs./pack	DP Plastic Pack  40 pcs./pack

■Table of Part Numbers

Series	DP1-100		DP1-120		DP2-100-□-Z		DP2-110-□-Z
Contact plating	Silver	Gold	Silver	Gold	Silver	Gold	Silver
Non-illuminated	DP1-100-Z	☆DP1-100B-Z	DP1-120-Z	★DP1-120B-Z	★ DP2-100-B-Z	——	★ DP2-110-B-Z
	——	——	——	——	★ DP2-100-G-Z	——	★ DP2-110-G-Z
	——	——	——	——	★ DP2-100-K-Z	——	★ DP2-110-K-Z
	——	——	——	——	★ DP2-100-M-Z	——	★ DP2-110-R-Z
	——	——	——	——	★ DP2-100-O-Z	——	★ DP2-110-W-Z
	——	——	——	——	☆ DP2-100-R-Z	——	★ DP2-110-O-Z
	——	——	——	——	☆ DP2-100-W-Z	——	——
	——	——	——	——	★ DP2-100-Y-Z	——	——
Series	DP2-101-□L■-Z		DP2-111-□L■-Z	DP2-102-□L■-Z	DP3-101-L■-Z		
Contact plating	Silver	Gold	Silver	Silver	Silver	Gold	
illuminated	★ DP2-101-BL2-Z	★ DP2-101B-BL2-Z	★ DP2-111-BL2-Z	▲ DP2-102-BL22-Z	★ DP3-101-L2-Z	★ DP3-101B-L5-Z	
	★ DP2-101-BL5-Z	★ DP2-101B-GL2-Z	▲ DP2-111-BL5-Z	★ DP2-102-BL25-Z	★ DP3-101-L5-Z	——	
	★ DP2-101-BL8-Z	——	★ DP2-111-GL2-Z	▲ DP2-102-GL22-Z	★ DP3-101-L8-Z	——	
	★ DP2-101-GL2-Z	——	★ DP2-111-GL5-Z	★ DP2-102-GL25-Z	——	——	
	☆ DP2-101-GL5-Z	——	★ DP2-111-GL8-Z	★ DP2-102-KL25-Z	□ : Cap color code W : White R : Red K : Black G : Gray B : Blue O : Orange Y : Yellow		
	★ DP2-101-GL8-Z	——	★ DP2-111-OL2-Z	▲ DP2-102-ML25-Z			
	★ DP2-101-KL2-Z	——	★ DP2-111-OL5-Z	★ DP2-102-OL25-Z			
	★ DP2-101-KL5-Z	——	★ DP2-111-OL8-Z	★ DP2-102-RL25-Z			
	★ DP2-101-KL8-Z	——	★ DP2-111-KL2-Z	★ DP2-102-GL55-Z			
	★ DP2-101-OL2-Z	——	★ DP2-111-KL5-Z	▲ DP2-102-GL88-Z			
	★ DP2-101-OL5-Z	——	——	▲ DP2-102-WL25-Z			
	★ DP2-101-OL8-Z	——	▲ DP2-111-ML5-Z	——			
	★ DP2-101-RL2-Z	——	★ DP2-111-RL2-Z	——			
	★ DP2-101-RL5-Z	——	▲ DP2-111-RL5-Z	——			
	★ DP2-101-RL8-Z	——	——	——			
	★ DP2-101-WL2-Z	——	★ DP2-111-YL2-Z	——			
	★ DP2-101-WL5-Z	——	★ DP2-111-WL2-Z	——			
	★ DP2-101-WL8-Z	——	★ DP2-111-KL8-Z	——			
	★ DP2-101-YL2-Z	——	——	——			
	——	——	——	——			
★ DP2-101-ML2-Z	——	——	——				