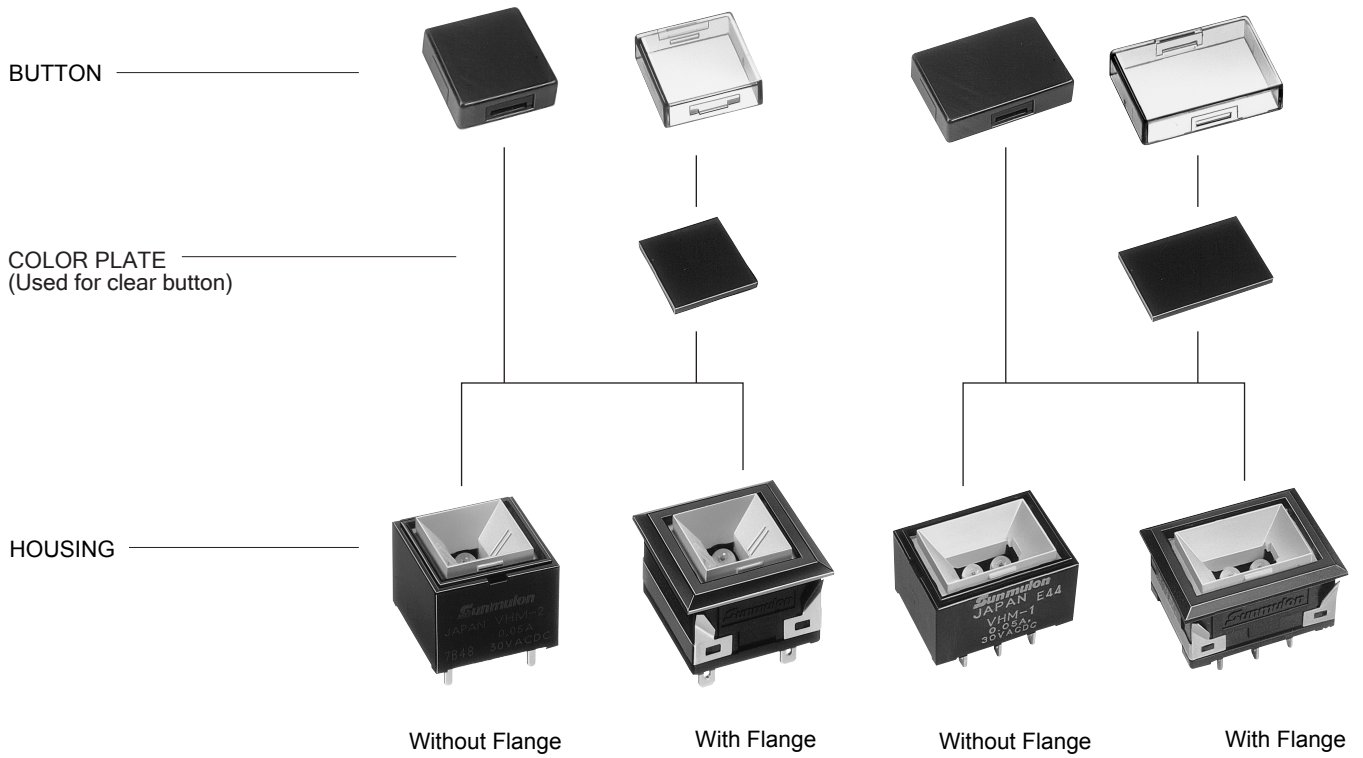


STRUCTURE



DIMENSIONS

With Flange	12mm Square Button				
	12×17mm Rect. Button				

Tolerance : ±0.4mm

DIMENSIONS

Without Flange	12mm Square Button				
	12×17mm Rect. Button				

INTERNAL CONNECTION ARRANGEMENTS

● LED (Red, Green, Yellow)

● Dual-Color Combination

LED Full-Face (Square)	Any Voltage	Mono-Color		Dual-Color	
		BOTTOM VIEW	TOP VIEW	BOTTOM VIEW	TOP VIEW
LED Full-Face (Rectangular)	Any Voltage	Mono-Color		Dual-Color	
		BOTTOM VIEW	TOP VIEW	BOTTOM VIEW	TOP VIEW

LC(+)-L1	Red	Green	Yellow
LC(+)-L2	Green	Yellow	Red

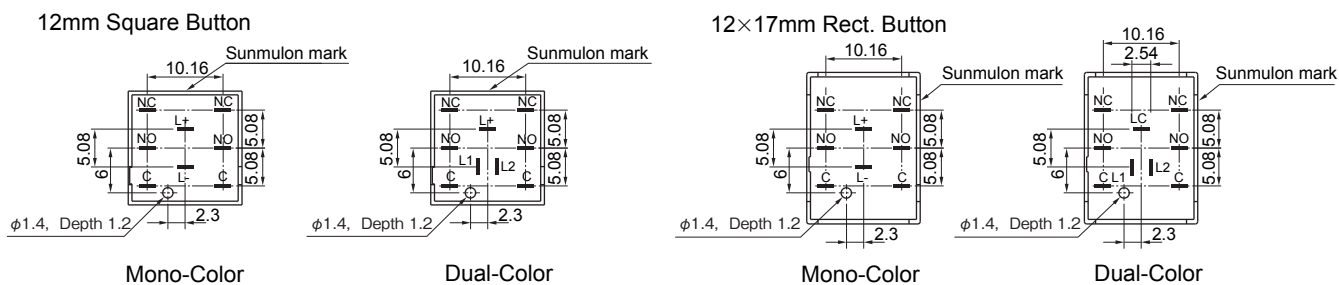
Tolerance : ±0.4mm

TERMINALS

● TERMINALS LAYOUT

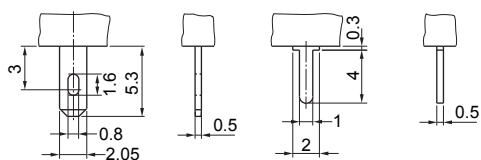
		STDP	DTDP	INDICATOR
12mm Square Button	Mono-Color			
	Dual-Color			
12x17mm Rect. Button	Mono-Color			
	Dual-Color			

● TERMINALS DIMENSIONS (BOTTOM VIEW)



TERMINAL SHAPE / PCB HOLE CUT-OUT

● TERMINAL SHAPE

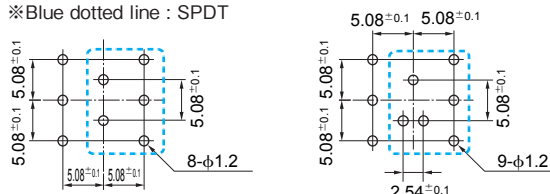


Soldering Terminal

PCB Terminal

● PCB hole cut-out (BOTTOM VIEW)

※Blue dotted line : SPDT



Mono-Color

Dual-Color

Tolerance : ±0.4mm

LED DATA

● LED RATINGS

ITEM	Mono-Color					Dual-Color		
	Red, Yellow	Green	S. Blue	S. White	S. Green	Red	Green	Yellow
Max. operating current I _{FM} (mA)	30	30	20	20	20	30	30	30
DC reverse voltage V _R (V)	10	10	4	5	4	10	10	10
Forward voltage V _F (V)	4.2	4.2	2.9	2.9	2.9	4	4.4	4.2
Recommended operating current I _F (mA)	7	16	5	6.8	3.5	20	20	20
Current Reduced Factor (Over 25°C working Temperature)	0.4mA/°C		0.28mA/°C	0.3mA/°C	0.28mA/°C	0.4mA/°C		
Wiring Diagram	Fig.1		Fig.2			Fig.3		

● LED PROTECTION RESISTOR

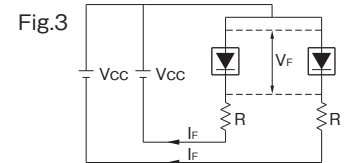
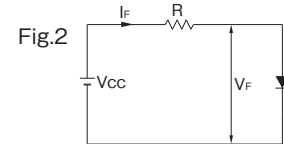
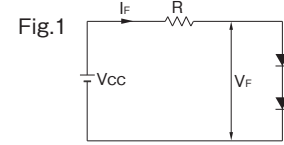
As LED protection resistor is not built-in, please apply external resistor according to following:

Standard Brightness

Voltage (V)	Mono-Color					Dual-Color		
	Red, Yellow	Green	S. Blue	S. White	S. Green	Red	Green	Yellow
5(±5%)	130Ω 1/8W	51Ω 1/8W	470Ω 1/8W	240Ω 1/8W	620Ω 1/8W	51Ω 1/8W	33Ω 1/8W	43Ω 1/8W
12(±5%)	1300Ω 1/4W	510Ω 1/4W	2000Ω 1/4W	1300Ω 1/4W	2700Ω 1/4W	430Ω 1/4W	390Ω 1/4W	390Ω 1/4W
24(±5%)	3300Ω 1/2W	1300Ω 1/2W	4700Ω 1/2W	3000Ω 1/2W	6200Ω 1/2W	1000Ω 1/2W	1000Ω 1/2W	1000Ω 1/2W

Lower Brightness

Voltage (V)	Mono-Color					
	Red	Green	Yellow	S. Blue	S. White	S. Green
5(±5%)	240Ω 1/8W	91Ω 1/8W	270Ω 1/8W	910Ω 1/4W	550Ω 1/8W	1500Ω 1/8W
12(±5%)	1800Ω 1/4W	830Ω 1/4W	2700Ω 1/4W	4300Ω 1/4W	2700Ω 1/4W	6800Ω 1/4W
24(±5%)	4300Ω 1/2W	2200Ω 1/2W	5600Ω 1/2W	10KΩ 1/4W	6800Ω 1/4W	15KΩ 1/4W



The value of the series resistor can be determined by the formula:

$$R = \frac{V_{CC} - V_F}{I_F}$$

V_{CC}: Supply Voltage

V_F: Forward Voltage

I_F: Forward Current With Guard Cover

* Pulse Lighting

Pulse Width P_w = 100 μs

Duty Ratio D_R = 10⁻¹

I_{FM} = 100mA

I_{FM} = 50mA (S.White, Dual-color)

PANEL LAYOUT / PANEL CUT DIMENSIONS

● 12mm Square Button

		Panel Layout	Panel Cut Dimensions
Without Barriers	Independent		
	Serial		
With Barriers	Independent		
	Serial		

* Panel Cut Dimension should be after panel paintings.

n : number of switches
Tolerance : ±0.4mm

PANEL LAYOUT / PANEL CUT DIMENSIONS

		Panel Layout		Panel Cut Dimensions	
		Independent	Serial	Independent	Serial
With Guard Cover (With Flange Type)	Independent				
	Serial				

● 12×17mm Rect. Button

		Panel Layout		Panel Cut Dimensions	
		Independent	Serial	Independent	Serial
Without Barriers	Independent				
	Serial				
With Barriers	Independent				
	Serial				
With Guard Cover (With Flange Type)	Independent				
	Serial				

Panel thickness: 1.0 ~ 3.2mm

Panel thickness: 1.0 ~ 2.5mm(Guard Cover use)

n : number of switches

Tolerance : ±0.4mm

PANEL LAYOUT / PANEL CUT DIMENSIONS

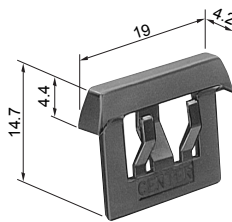
	With Flange	With Flange, With Barriers
	<p>In case of Group Mounting, please leave space as below.</p>	<p>In case of Group Mounting, please leave space as below.</p>

ACCESSORIES

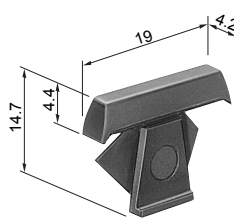
BARRIERS

In case of mounting switches in series, barriers can be used to prevent inadvertent pushing neighbor switch.

(Cannot be used with "Without Flange Type")



Center Barrier



Side Barrier

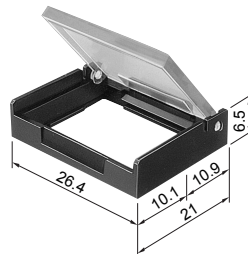
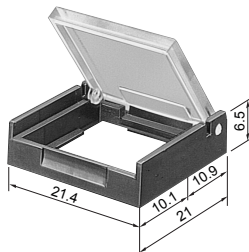
Part No.		
	Center Barrier	Side Barrier
Black	VH-0975-K	VH-0976-K
Gray	VH-0975-G	VH-0976-G

GUARD COVER (WITH FLANGE)

Guard Cover prevents inadvertent and unintentional operations. (Cannot be used with barriers)

● 12mm Square Button

● 12×17mm Rectangular Button



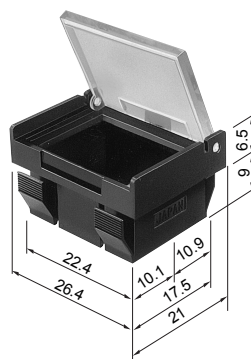
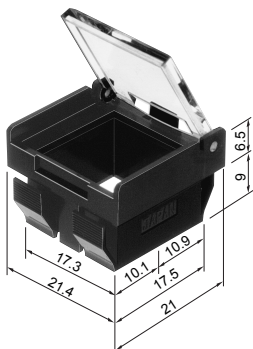
Part No.		
	Color	
Square	Black	VH-1089-K
	Gray	VH-1089-H
Rect.	Black	VH-2252-K
	Gray	VH-2252-H

* The cover to be opened 90° and stopped.

GUARD COVER (WITHOUT FLANGE)

● 12mm Square Button

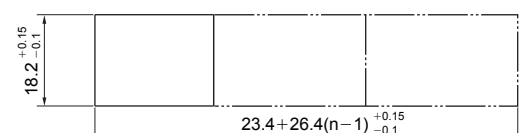
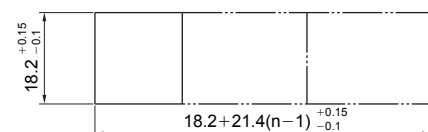
● 12×17mm Rectangular Button



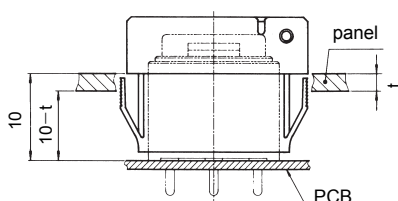
Part No.		
	Color	
Square	Black	VH-2026-K
	Gray	VH-2026-H
Rect.	Black	VH-2253-K
	Gray	VH-2253-H

* The cover to be opened 90° and stopped.

● Panel Cut Dimensions for WITHOUT FLANGE Guard Cover



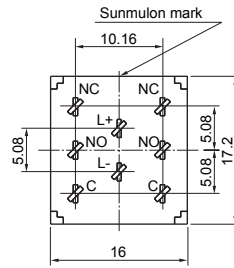
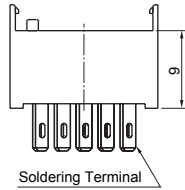
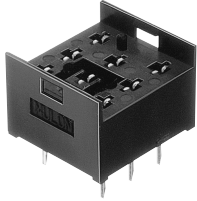
Panel thickness: 1.0 ~ 3.2mm
Tolerance : ±0.4mm



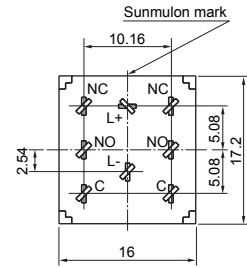
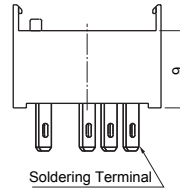
ACCESSORIES

SOCKET

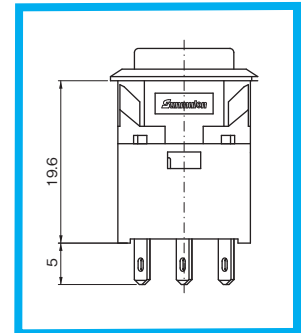
• Non Resistor



• Built-in Resistor



Soldering Terminal	Voltage \ Color	Red, Yellow	Green	S. Blue	S. White	S. Green
	5V	VH-3631-1 130Ω 1/2W	VH-3631-2 51Ω 1/2W	VH-3631-3 470Ω 1/2W	VH-3631-4 240Ω 1/2W	VH-3631-5 620Ω 1/2W
12V	VH-3632-1 1300Ω 1/2W	VH-3632-2 510Ω 1/2W	VH-3632-3 2000Ω 1/2W	VH-3632-4 1300Ω 1/2W	VH-3632-5 2700Ω 1/2W	
24V	VH-3633-1 3300Ω 1/2W	VH-3633-2 1300Ω 1/2W	VH-3633-3 4700Ω 1/2W	VH-3633-4 3000Ω 1/2W	VH-3633-5 5600Ω 1/2W	
Non Resistor	VH-1052					



- Note 1. Socket to be used for Solder terminal type of Switch Unit.
- Note 2. Socket to be used for "With FLANGE" type only.
- Note 3. Socket not to be used for Rectangular switch unit.
- Note 4. Socket not to be used for Dual-Color type.

Tolerance : ±0.4mm

ORDERING CODE

VH — 1 2 +Z

● OPERATION

M	Momentary
A	Alternate
L	Indicator

※

※ Please note Alternate type is available only for Square Button

● CONTACT

0	Indicator
1	SPDT 0.05A30VAC DC
2	DPDT 0.05A30VAC DC
3	SPDT 5A 35VAC
4	DPDT 5A 35VAC

● BUTTON SHAPE

S	Square
W	Rect.

● ILLUMINATION TYPE

70	Red	Full-Face : Put color no. into the frame 1
80	Green	
90	Yellow	
14	S. Blue	
16	S. White	
18	S. Green	
×	Without LED	

7	Red	Dual-Color : Put color no. into the frame 1,2 (78,89,97)
8	Green	
9	Yellow	

● NOTES

- 1) In case of Dual-Color, button should be C (clear) with Milk-White Color Plate or Milk-White button.
- 2) Please be noted that the color of "Yellow" for LED, Button, Color Plate is actually "Orange Yellow" not Lemon Yellow.

● TERMINAL

S	Solder
C	PCB

● COLOR PLATE

1	Red
2	Green
3	Yellow
4	Milk-White
×	Without Color Plate

Note : Color Plate not be used with colored button

● HOUSING COLOR

K	Black
G	Gray

● FLANGE

1	Without Flange
2	With Flange

● BUTTON COLOR

R	Red
G	Green
Y	Yellow
K	Black
M	Milk-White
C	Clear
×	Without Button

* Non illuminated only