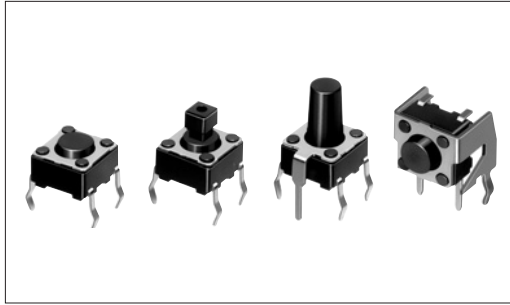


# TACT Switch™ 6×6mm (Snap-in type)

SKHH Series



User friendly 6×6mm type, available in a wide variety.



## Features

- Snap-in type allows the switch to be mounted directly onto the PC board.
- Part of the output terminal can also be applied as jumper leads, making circuit design easier.
- Also available with anti-ESD ground terminal.
- Available with standard knobs.

## Applications

- For various operation in audio equipment, office devices, communication devices, measuring devices, TVs, VCRs and in-car components
- For mouse
- For overall home appliances

## Product Line

### Vertical Type

Product No.	Operating force	Operating direction	Travel (mm)	Rating (max.)	Rating (min.)	Operating life (5mA 5V DC)	Initial contact resistance	Stem color	Stem height	Minimum packing unit (pcs.)	Drawing No.	
SKHHAJA010	0.98N	Vertical	0.25	50mA 12V DC	10μA 1V DC	1,000,000cycles	100mΩ max.	Black	h=4.3mm	1,000	1	
SKHHALA010	1.57N					500,000cycles		Dark gray				
SKHHAQA010	2.55N					200,000cycles		Red				
SKHHAKA010	0.98N					1,000,000cycles		Black	h=5mm			
SKHHAMA010	1.57N					500,000cycles		Dark gray				
SKHHARA010	2.55N					200,000cycles		Red				
SKHHCQA010	3.53N					5.10N		200,000cycles	Orange			h=7mm
SKHHCRA010	5.10N					1,000,000cycles		Yellow				
SKHHBVA010	0.98N					500,000cycles		Black				
SKHHBWA010	1.57N					200,000cycles		Dark gray	h=9.5mm			
SKHHBYA010	2.55N					1,000,000cycles		Red				
SKHHANA010	0.98N					500,000cycles		Black				
SKHHAPA010	1.57N					200,000cycles		Dark gray	h=13mm			
SKHHBSA010	2.55N					1,000,000cycles		Red				
SKHHDTA010	0.98N					500,000cycles		Black				
SKHHDUA010	1.57N					300,000cycles		Dark gray	h=17mm			
SKHHDHA010	0.98N							Black				
SKHHDJA010	1.57N							Dark gray				

### Joint Stem Type

Product No.	Operating force	Operating direction	Travel (mm)	Rating (max.)	Rating (min.)	Operating life (5mA 5V DC)	Initial contact resistance	Stem color	Stem height	Minimum packing unit (pcs.)	Drawing No.
SKHHCWA010	0.98N	Vertical	0.25	50mA 12V DC	10μA 1V DC	1,000,000 cycles	100mΩ max.	Black	h=7.3mm	1,000	2
SKHHDAA010	1.57N					500,000 cycles		Dark gray			
SKHHDGA010	2.55N					200,000 cycles		Red			

Refer to P.373 for product specifications.  
Refer to P.374 for soldering conditions.  
Refer to P.378 for standard knobs.

**Product Line**  
With Ground Terminal Type

	Product No.	Operating force	Operating direction	Travel (mm)	Rating (max.)	Rating (min.)	Operating life (5mA 5V DC)	Initial contact resistance	Stem color	Stem height	Minimum packing unit (pcs.)	Drawing No.
Detector	SKHHPJA010	0.98N	Vertical	0.25	50mA 12V DC	10μA 1V DC	1,000,000 cycles	100mΩ max.	Black	h=4.3mm	1,000	3
Push	SKHHPLA010	1.57N					500,000 cycles		Dark gray			
Slide	SKHHPOA010	2.55N					200,000 cycles		Red			
Rotary	SKHHPKA010	0.98N					1,000,000 cycles		Black	h=5mm		
Encoders	SKHHPMA010	1.57N					500,000 cycles		Dark gray			
Power	SKHHQVA010	2.55N					200,000 cycles		Red			
Dual-in-line Package Type	SKHHQWA010	1.57N					1,000,000 cycles		Black	h=7mm		
Multi Control Devices	SKHHQYA010	2.55N					500,000 cycles		Dark gray			
TACT Switch™	SKHHPNA010	0.98N					200,000 cycles		Red			
Custom-Products	SKHHPPA010	1.57N					1,000,000 cycles		Black	h=9.5mm		
	SKHHQNA010	2.55N					500,000 cycles		Dark gray			
							200,000 cycles		Red			

**Horizontal Type**

	Product No.	Operating force	Operating direction	Travel (mm)	Rating (max.)	Rating (min.)	Operating life (5mA 5V DC)	Initial contact resistance	Stem color	Stem length	Minimum packing unit (pcs.)	Drawing No.
Sharp Feeling	SKHHLMA010	0.98N	Horizontal	0.25	50mA 12V DC	10μA 1V DC	1,000,000 cycles	100mΩ max.	Black	ℓ=3.85mm	1,000	4
Soft Feeling	SKHHLNA010	1.57N					500,000 cycles		Dark gray			
Snap-in Type	SKHHLPA010	2.55N					200,000 cycles		Red			
Surface Mount Type	SKHHLQA010	0.98N					1,000,000 cycles		Black	ℓ=8.35mm		
Radial Type	SKHHLRA010	1.57N					500,000 cycles		Dark gray			
	SKHHLSA010	2.55N					200,000 cycles		Red			
	SKHHLUA010	0.98N					1,000,000 cycles		Black	ℓ=5.85mm		
	SKHHLVA010	1.57N					500,000 cycles		Dark gray			
	SKHHLWA010	2.55N					200,000 cycles		Red			
	SKHHNHA010	0.98N					500,000 cycles		Black	ℓ=15.85mm		
	SKHHNJA010	1.57N					300,000 cycles		Dark gray			
	SKHHNKA010	2.55N					200,000 cycles		Red			



**Dimensions**

Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from switch mounting face)														
1		<table border="1" style="margin-left: 20px;"> <thead> <tr> <th>h</th> <th>A</th> </tr> </thead> <tbody> <tr><td>4.3</td><td>3.5</td></tr> <tr><td>5</td><td>3.5</td></tr> <tr><td>7</td><td>3.3</td></tr> <tr><td>9.5</td><td>3</td></tr> <tr><td>13</td><td>3</td></tr> <tr><td>17</td><td>3</td></tr> </tbody> </table>	h	A	4.3	3.5	5	3.5	7	3.3	9.5	3	13	3	17	3	
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4.3	3.5																
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3		<table border="1" style="margin-left: 20px;"> <thead> <tr> <th>h</th> <th>A</th> </tr> </thead> <tbody> <tr><td>4.3</td><td>3.5</td></tr> <tr><td>5</td><td>3.5</td></tr> <tr><td>7</td><td>3.3</td></tr> <tr><td>9.5</td><td>3</td></tr> </tbody> </table>	h	A	4.3	3.5	5	3.5	7	3.3	9.5	3					
h	A																
4.3	3.5																
5	3.5																
7	3.3																
9.5	3																

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line  
Package Type

Multi Control  
Devices

TACT Switch™

Custom-  
Products

Sharp  
Feeling

Soft  
Feeling


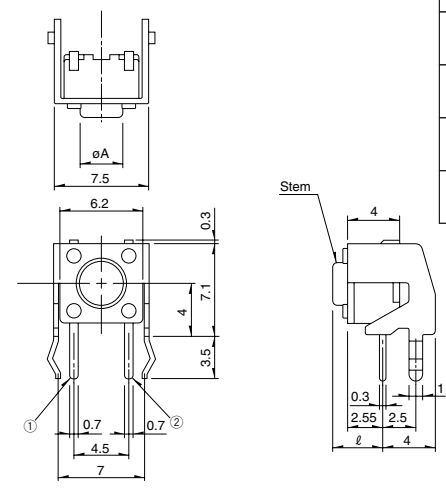
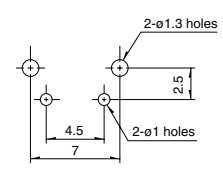
Snap-in  
Type

Surface  
Mount Type

Radial  
Type

Dimensions

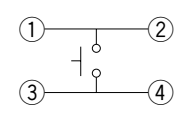
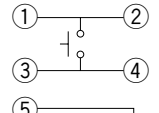
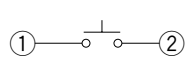
Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from switch mounting face)										
4			<table border="1"> <thead> <tr> <th><math>\ell</math></th> <th>A</th> </tr> </thead> <tbody> <tr> <td>3.85</td> <td>3.5</td> </tr> <tr> <td>5.85</td> <td>3.3</td> </tr> <tr> <td>8.35</td> <td>3</td> </tr> <tr> <td>15.85</td> <td>3</td> </tr> </tbody> </table>	$\ell$	A	3.85	3.5	5.85	3.3	8.35	3	15.85	3
			$\ell$	A									
			3.85	3.5									
			5.85	3.3									
			8.35	3									
15.85	3												
													

Note

Please use 1.6mm thick PC boards.

Circuit Diagram

Vertical type/Joint stem type	With ground terminal type	Horizontal type
		

- Detector
- Push
- Slide
- Rotary
- Encoders
- Power
- Dual-in-line Package Type
- Multi Control Devices
- TACT Switch™
- Custom-Products

- Sharp Feeling
- Soft Feeling
- Snap-in Type
- Surface Mount Type
- Radial Type

## Product Specifications

Items		Series	Sharp feeling type	Soft feeling type
		Operating temperature range		
	-30°C to +85°C			-40°C to +90°C
Electrical performance	Insulation resistance	100MΩ min. 100V DC SKEY/PD : 50MΩ min. 100V DC		
	Voltage proof	250V AC for 1minute SKRE/SC/RB/RM/RW/RR/EY/PD : 100V AC for 1minute		
Durability	Vibration	10 to 55 to 10Hz/min., the amplitude is 1.5mm for all the frequencies, in the 3 direction of X, Y and Z for 2hours respectively		
	Lifetime	Shall be in accordance with individual specifications.		
Environmental performance	Cold	-30±2°C for 96h		
	Dry heat	80±2°C for 96h		
	Damp heat	60±2°C, 90 to 95%RH for 96h		

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line  
Package TypeMulti Control  
Devices

TACT Switch™

Custom-  
Products

### Note

The automotive operating temperature range to be individually discussed upon request.

### Specifications of LED (SKHJ)

Color of illumination	Power dissipation P (mW)	Forward pulse peak current IFP (mA)	Forward current IFDC (mA)	Reverse voltage VR (V)	Forward voltage VF (V) IF=10mA	Reverse current IR (μA) VR=4V	Peak emission wave length λ peak (nm) IF=10mA	Spectral line half width Δλ (nm) IF=10mA	Luminous intensity IV (mcd) IF=10mA
Red	40	80	15	4	2.7 max. 2.05TYP	5 max.	700 TYP	100 TYP	0.4min. 1.0 TYP
Pure green					10 max.	555 TYP	20 TYP	0.8min. 2.0 TYP	
Amber						590 TYP	30 TYP	0.4min. 1.0 TYP	
Orange (High brightness)				3	2.7 max. 2.0 TYP	630 TYP	40 TYP	1.5min. 4.0 TYP	
Green (High brightness)				4	2.7 max. 2.05TYP	565 TYP	30 TYP	2.0min. 5.0 TYP	

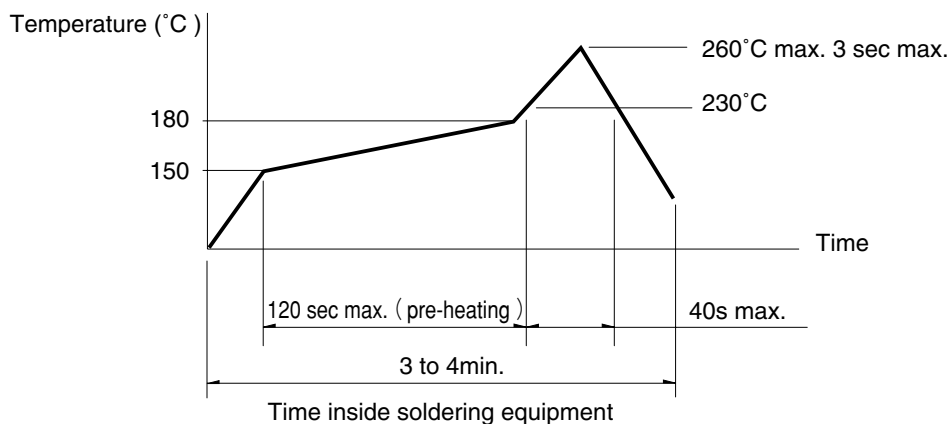
Sharp  
FeelingSoft  
FeelingSnap-in  
Type  
Surface  
Mount TypeRadial  
Type

## Soldering Conditions

### Condition for Reflow

Available for Surface Mount Type.

1. Heating method: Double heating method with infrared heater.
2. Temperature measurement: Thermocouple 0.1 to 0.2 φ CA (K) or CC (T) at solder joints (copper foil surface). A heat resistive tape should be used to fix thermocouple.
3. Temperature profile



### Note

1. The above temperature shall be measured on the mounting surface of a PC board. There are cases where the PC board's temperature greatly differs from that of the switch, depending on the material, size, thickness of PC boards and others. The above-stated conditions shall also apply to switch surface temperatures.
2. Soldering conditions differ depending on reflow soldering machines. Prior verification of soldering condition is highly recommended.

### Conditions for Auto-dip

Available for Snap-in Type and Radial Type  
(Except SKHJ, SKHL, SKQJ, SKQK, SKEG series)

Items	Condition
Flux built-up	Mounting surface should not be exposed to flux
Preheating temperature	Ambient temperature of the soldered surface of PC board. 100°C max.
Preheating time	60s max.
Soldering temperature	260°C max.
Duration of immersion	5s max.
Number of soldering	2times max.

### Manual Soldering (Except SKRT series)

Items	Condition
Soldering temperature	350°C max.
Duration of soldering	3s max.
Capacity of soldering iron	60W max.

### Notes

1. Consult with us for TACT Switch™ washing conditions.
2. Prevent flux penetration from the top side of the TACT Switch™.
3. Switch terminals and a PC board should not be coated with flux prior to soldering.
4. The second soldering should be done after the switch returns to normal temperature.
5. Use the flux with a specific gravity of min 0.81.  
(EC-19S-8 by TAMURA Corporation, or equivalents.)

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line  
Package Type

Multi Control  
Devices

TACT Switch™

Custom-  
Products

Sharp  
Feeling

Soft  
Feeling


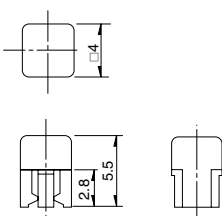
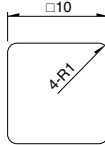

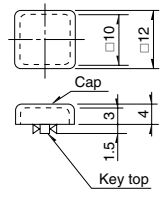
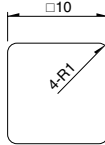

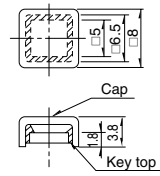
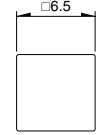

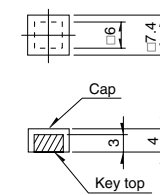
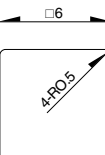
Snap-in  
Type

Surface  
Mount Type

Radial  
Type

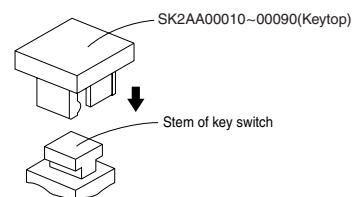
## Product Line of Knobs

Unit:mm

Applicable model	Dimensions		Variety			Label dimensions (Unit:mm)	
			Color	Model			
Detector			Keytop				
Push			Red Blue Ivory Black Yellow	Keytop			
Slide				Keytop + Cap			
Rotary				Keytop			
Encoders				Keytop + Cap			
Power			Cap				
Dual-in-line Package Type			Clear	SK2AA00510			
Multi Control Devices			Red Blue Ivory Black	Keytop			Keytop + Cap
TACT Switch™				SK2AA00010 SK2AA00020 SK2AA00030 SK2AA00040	Keytop + Cap		
Custom-Products					Keytop		
	Keytop + Cap						
Sharp Feeling			Cap				
Soft Feeling			Clear	SK2AA00520			
Snap-in Type			Red Blue Ivory Black Yellow	Keytop			Keytop + Cap
Surface Mount Type				SK2AA00210 SK2AA00220 SK2AA00230 SK2AA00240 SK2AA00250	Keytop + Cap		
Radial Type					Keytop		
	Keytop + Cap						
			Cap				
			Clear	SK2AA00540			
			Red Blue Ivory Black Yellow	Keytop			Keytop + Cap
				SK2AA00310 SK2AA00320 SK2AA00330 SK2AA00340 SK2AA00350	Keytop + Cap		
					Keytop		
	Keytop + Cap						


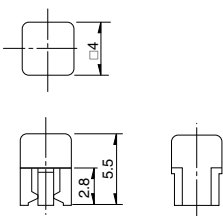

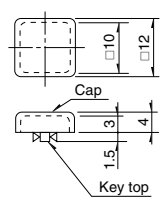
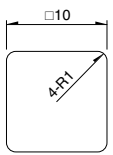

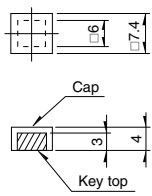
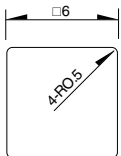
### Notes

1. The knob will be delivered together with the switch but packed separately.
2. The label is not included.
3. For SK2AA00010 to SK2AA00090 types, please check the mounting direction.



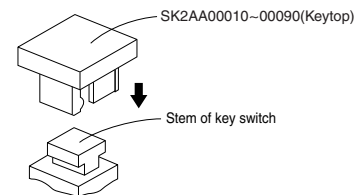
# Product Line of Knobs

Unit:mm

Applicable model	Dimensions		Variety		Label dimensions (Unit:mm)		
			Color	Model			
<b>SKHH</b>  Applicable to joint stem type			Keytop				
			Red Blue Ivory Black Yellow	SK2AA00410 SK2AA00420 SK2AA00430 SK2AA00440 SK2AA00450			
<b>SKHC SKQE</b>  Applicable to joint stem type			Cap				
			Clear	SK2AA00510		Keytop + Cap	
			Red Blue Ivory Black	SK2AA00010 SK2AA00020 SK2AA00030 SK2AA00040	SK2AA00060 SK2AA00070 SK2AA00080 SK2AA00090	Thickness 0.1	
<b>SKEG</b>  Applicable to joint stem type			Cap				
			Clear	SK2AA00540		Keytop + Cap	
			Red Blue Ivory Black Yellow	SK2AA00310 SK2AA00320 SK2AA00330 SK2AA00340 SK2AA00350	SK2AA00360 SK2AA00370 SK2AA00380 SK2AA00390 SK2AA00400	Thickness 0.1	

**Notes**

1. The knob will be delivered together with the switch but packed separately.
2. The label is not included.
3. For SK2AA00010 to SK2AA00090 types, please check the mounting direction.



Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line  
Package Type

TACT Switch™

Custom-  
Products

Sharp  
Feeling

Soft  
Feeling

Snap-in  
Type












Surface  
Mount Type

Radial  
Type



# List of Varieties

## Sharp Feeling Type

Series	SKHR	SKHL	SKHH	SKHW	SKRD	SKQJ	SKHL	SKHH	SKQJ	SKQB	SKQU	
Photo												
Type	Snap-in											
Features	—			Dust-proof type	Horizontal type	—	Horizontal type			Water-proof	4-direction switch+push switch	
Operating direction	Vertical	●	●	●	●	—	●	—			●	●
	Horizontal	—				●	—	●	●	●	—	
Dimensions (mm)	W	□4.5	6	□6	6.2	□6.6	7.3	7.5		□10		
	D		3.5		7.15		7.22	7.85				
	H	3.8	4.3		7.4	5	4.3	7.4	7.3	5	7.1	
Operation force coverage	1N	↕	↕	↕	↕	↕	↕	↕	↕	↕	See the relevant pages for respective product descriptions	
	5N			↕						↕		
Travel (mm)	0.25			0.3	0.25				0.3			
Ground terminal	—		●	—			●	—				
Operating temperature range	-20°C to +70°C SKHL(Vertical Type)/QJ											
	-30°C to +85°C											
Automotive use	—		●	—					●	—		
Electrical performance	Insulation resistance	100MΩ min. 100V DC										
	Voltage proof	250V AC for 1min.										
Durability	Vibration	10 to 55 to 10Hz/min., the amplitude is 1.5mm for all the frequencies, in the 3 direction of X, Y and Z for 2hours respectively										
	Lifetime	Shall be in accordance with individual specifications.										
Environmental performance	Cold	-30±2°C for 96h										
	Dry heat	80±2°C for 96h										
	Damp heat	60±2°C, 90 to 95%RH for 96h										
Page	281	282	284	288	289	290	282	284	290	292	485	

W : Width. The most outer dimension excluding terminal portion.  
 D : Depth. The most outer dimension excluding terminal portion.  
 H : Height. The minimum dimension if there are variances.

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- TACT Switch™ Cautions.....335
- Product Line of Knobs for TACT Switch™ .....336

### Notes

1. The automotive operating temperature range to be individually discussed upon request.
2. ●marks in "Available for automotive use" indicate that all of the series products can work at the operating temperature range from -40°C to +85°C.

Detector  
 Push  
 Slide  
 Rotary  
 Encoders  
 Power  
 Dual-in-line Package Type  
 TACT Switch™  
 Custom-Products

Sharp Feeling  
 Soft Feeling  
 Snap-in Type  
 Surface Mount Type  
 Radial Type