

Light Touch Switches Application Sheets

Panasonic Corporation



Device: Drones

Appliances

Health care
equipment

AV/OA equipment

Entertainment

Industrial
equipment

ICT

Automotive

Use example of switches



Use: Power button, Operation button

Adoption results : No. 10, 12, 18, 19

Appeal points of the switch

■Main unit

Appeal points:

- Prevents **malfunction** caused by vibrations
- Long stroke makes **operation recognition clear**

Advantages of the switch: • **High operating forces** (3.5N/4N/5N)

- **Long stroke** (1.0 mm/1.3 mm)

Recommended switches: **No. 2, 3, 4**

■Controller

Appeal points:

- **Light operation feeling**

Advantages of the switch: • Variety of operating forces (1.0N/1.6N/2.6N)

- Short stroke, **Long operational life**

Recommended switches: **No. 7, 10, 12, 18, 19**

Proposed light touch switches

1	10 mm Square Center Space SMD EVPAD-type		11	4.7 mm x 3.5 mm SMD EVQP2-type	
2	8 mm Square Long Travel SMD EVQQ1-type		12	3.5 mm x 2.9 mm SMD EVPAA-type	
3	6 mm Square Long Travel SMD EVQP0/P1/9P-type		13	3.4 mm x 2.9 mm IP67 EVPAY-type	
4	6 mm Square Long Travel 2-terminal SMD EVPAS-type		14	3.0 mm x 2.6 mm SMD EVPAF-type	
5	6 mm Square Middle Travel 2-terminal SMD EVPBD-type		15	3.0 mm x 2.0 mm IP67 SMD EVPAW-type	
6	6 mm Square Middle Travel SMD EVPBF-type		16	2.6 mm x 1.6 mm IP67 SMD EVPBB-type	
7	6 mm Square Thin Type SMD EVQQ2/P0-type		17	5N type Side-operational EVQPF-type	
8	5N type EVQPA/PB-type		18	6.2 mm x 2.5 mm Side-operational Edge Mount EVQP4-type	
9	6.0 mm x 3.5 mm EVQPE-type		19	3.8 mm x 1.9 mm Side-operational SMD EVPAK-type	
10	4.9 mm Square SMD EVQPL-type		-	-	-

Web catalog site

https://www3.panasonic.biz/ac/e/control/switch/light-touch/search_package/index.jsp

Device: Drive recorders

Appliances

Health care
equipment

AV/OA equipment

Entertainment

Industrial equipment

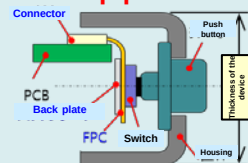
ICT

Automotive

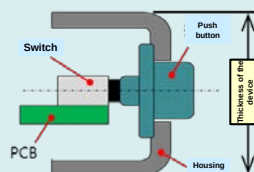
Use example of switches



FPC + Top push switch



Side push switch (No need for FPC)



Use: Operation buttons for recording

Adoption results : No. 1

Appeal points of the switch

Appeal points:

- Contribute to make devices **thinner**
- Adapting for **automotive quality**

Advantages of the switch:

- Variety of top and side push switch.
- Short stroke, light operating force and clear tactile feeling** are required in light of operability.

- Side push switch → **Save cost** by eliminating FPC
- Top push switch → FPC improves **design flexibility**

Recommended switches: No.1 , 6 , 7 , 8 , 9

Proposed light touch switches

1	6 mm Square Long Travel SMD EVQP0/P1/9P-type		6	4.7 mm x 3.5 mm SMD EVQP2-type	
2	6 mm Square Long Travel 2-terminal SMD EVPAS-type		7	3.5 mm x 2.9 mm SMD EVPAA-type	
3	6 mm Square Middle Travel 2-terminal SMD EVPBD-type		8	6.2 mm x 2.5 mm Side-operational Edge Mount EVQP4-type	
4	6 mm Square Thin Type SMD EVQQ2-type		9	4.5 mm x 2.2 mm Side-operational Edge Mount EVPAE-type	
5	4.9 mm Square SMD EVQPL-type		-	-	-
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Web catalog site

https://www3.panasonic.biz/ac/e/control/switch/light-touch/search_package/index.jsp

Device: ETC equipment

Appliances

Health care
equipment

AV/OA equipment

Entertainment

Industrial equipment

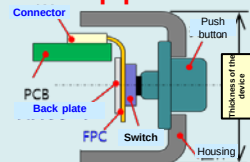
ICT

Automotive

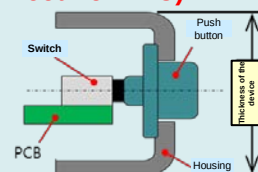
Use example of switches



FPC + Top push switch



Side push switch (No need for FPC)



Use: Operation buttons for setting, etc.

Adoption results : No. 5, 6

Appeal points of the switch

Appeal points:

- Contribute to make devices **thinner**
- Adapting for **automotive quality**

Advantages of the switch:

- Variety of top push and side push switches for side key operations
- Short stroke, light operating force** and **clear tactile feeling** are required in light of operability

- Side push switch → **Save cost** by eliminating FPC
Improved soldering strength by means of edge mount structure
- Top push switch → FPC improves **design flexibility**

Recommended switches: No.3 , 4 , 5 , 6

Proposed light touch switches

1	6 mm Square Thin Type SMD EVQQ2-type		4	3.5 mm x 2.9 mm SMD EVPAA-type	
2	4.9 mm Square SMD EVQPL-type		5	6.2 mm x 2.5 mm Side-operational Edge Mount EVQP4-type	
3	4.7 mm x 3.5 mm SMD EVQP2-type		6	4.5 mm x 2.2 mm Side-operational Edge Mount EVPAE-type	
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Web catalog site

https://www3.panasonic.biz/ac/e/control/switch/light-touch/search_package/index.jsp

Device: VR/AR devices

Appliances

Health care
equipment

AV/OA equipment

Entertainment

Industrial
equipment

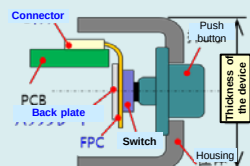
ICT

Automotive

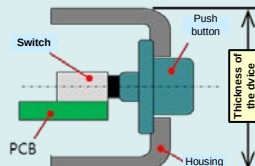
Use example of switches



FPC + Top push switch



Side push switch (No need for FPC)



Use: Operation buttons for recording, etc.

Adoption results : No. 2 , 7, 15

Appeal points of the switch

Appeal points:
 • Improved soldering strength prevents a switch from peeling off
 • Contribute to make a device thinner and water and dust proof

Advantages of the switch:

- Variety of top push and side push switches for side key operations
- Short stroke, light operating force and clear tactile feeling are required in light of operability.

- Side push switch → • Save cost by eliminating FPC
 • Improved soldering strength by means of edge mount structure
- Top push switch → FPC improves design flexibility

Recommended switches: No. 2 , 5, 7 , 10 , 11 , 12 , 15

Proposed light touch switches

1	4.9 mm Square SMD EVQPL-type		9	2.6 mm x 1.6 mm SMD EVPBB-type IP67	
2	4.7 mm x 3.5 mm SMD EVQP2-type		10	6.2 mm x 2.5 mm Side-operational Edge Mount EVQP4-type	
3	4 mm Square SMD EVQP6-type		11	4.5 mm x 2.2 mm Side-operational Edge Mount EVPAE-type	
4	3.5 mm x 2.9 mm SMD EVPAE-type		12	3.8 mm x 1.9 mm Side-operational SMD EVPAK-type IP67	
5	3.4 mm x 2.9 mm SMD EVPAY-type IP67		13	3.5 mm x 2.9 mm Side-operational SMD EVQP7-type	
6	3.0 mm x 2.6 mm SMD EVPAF-type		14	3.5 mm x 2.9 mm Side-operational HD EVPAN-type	
7	3.0 mm x 2.0 mm SMD EVPAW-type IP67		15	3.4 mm x 1.7 mm Side-operational Edge Mount EVPAT-type IP67	
8	2.8 mm x 1.9 mm SMD EVPBL-type IP67		16	2.8 mm x 2.3 mm Side-operational Edge Mount EVPAV-type	
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Web catalog site

https://www3.panasonic.biz/ac/e/control/switch/light-touch/search_package/index.jsp

Device: Smart medical equipment

Appliances

Health care
equipment

AV/OA equipment

Entertainment

Industrial equipment

ICT

Automotive

Use example of switches



Use: Operation buttons for hearing aids, Power buttons, etc.

Adoption results : No. 7

Appeal points of the switch

Appeal points: · Contribute to make a device **thinner** and **water and dust proof**.
· **Small click sound**

Advantages of the switch:

- Water-proof against penetration of rain and sweat
→ Recommend **IP67** qualified products
- Low click rates lead to reduced operation sound

Recommended switches: No. 5 , 7 , 8 , 9 , 12 , 15

Proposed light touch switches

1	4.9 mm Square SMD EVQPL-type		9	2.6 mm x 1.6 mm SMD EVPBB-type IP67	
2	4.7 mm x 3.5 mm SMC EVQP2-type		10	6.2 mm x 2.5 mm Side-operational Edge Mount EVQP4-type	
3	4 mm Square SMD EVQP6-type		11	4.5 mm x 2.2 mm Side-operational Edge Mount EVPAAE-type	
4	3.5 mm x 2.9 mm SMD EVPAA-type		12	3.8 mm x 1.9 mm Side-operational SMD EVPAAK-type IP67	
5	3.4 mm x 2.9 mm SMD EVPAY-type IP67		13	3.5 mm x 2.9 mm Side-operational SMD EVQP7-type	
6	3.0 mm x 2.6 mm SMD EVPAF-type		14	3.5 mm x 2.9 mm Side-operational HD EVPAN-type	
7	3.0 mm x 2.0 mm SMD EVPAW-type IP67		15	3.4 mm x 1.7 mm Side-operational Edge Mount IP67 EVPAT-type	
8	2.8 mm x 1.9 mm SMD EVPBL-type IP67		16	2.8 mm x 2.3 mm Side-operational Edge Mount EVPAAV-type	
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Web catalog site

https://www3.panasonic.biz/ac/e/control/switch/light-touch/search_package/index.jsp

Device: Game controller

Appliances

Health care
equipment

AV/OA equipment

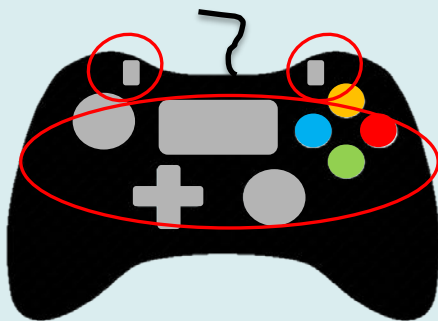
Entertainment

Industrial
equipment

ICT

Automotive

Use example of switches



Use: Operation buttons

Adoption results : No. 4 , 17

Appeal points of the switch

Appeal points: Variety of **operation feeling** and **long operational life**

Advantages of the switch:

- **Short/middle stroke, light operating force** and **clear tactile feeling**
- Long operational life switches are suitable for a key often operated.
- Top push switch is mainly applied ; however, side push switch is also applied for a button that control left and right movements.

Recommended switches: No.1, 2 , 4 , 5 , 8 , 17

Proposed light touch switches

1	6 mm Square Long Travel SMD EVQP0/P1/9P-type		10	4 mm Square SMD EVQP6-type	
2	6 mm Square Long Travel 2-terminal SMD EVPAS-type		11	3.5 mm x 2.9 mm SMD EVPA A-type	
3	6 mm Square Middle Travel 2-terminal SMD EVPBD-type		12	3.4 mm x 2.9 mm SMD EVPAY-type	
4	6 mm Square Middle Travel SMD EVPBF-type		13	3.0 mm x 2.6 mm SMD EVPAF-type	
5	6 mm Square Thin Type SMD EVQQ2/P0-type		14	3.0 mm x 2.0 mm SMD EVPAW-type	
6	5N Type EVQPA/PB-type		15	2.6 mm x 1.6 mm SMD EVPBB-type	
7	6.0 mm x 3.5 mm EVQPE-type		16	6.2 mm x 2.5 mm Side-operational Edge Mount EVQP4-type	
8	4.9 mm Square SMD EVQPL-type		17	5N Type Side-operational EVQPF-type	
9	4.7 mm x 3.5 mm SMD EVQP2-type		18	4.5 mm x 2.2 mm Side-operational Edge Mount EVPAE-type	
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Web catalog site

https://www3.panasonic.biz/ac/e/control/switch/light-touch/search_package/index.jsp

Device: Smart POS terminals

Appliances

Health care
equipment

AV/OA equipment

Entertainment

Industrial
equipment

ICT

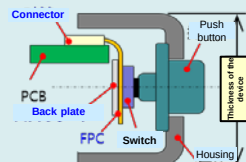
Automotive

Use example of switches

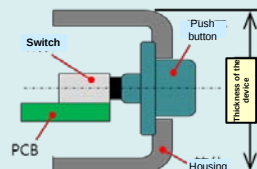


Use: Operation buttons for power button etc.

FPC + Top push switch



Side push switch (No need for FPC)



Adoption results : No. 2 , 10 , 12

Appeal points of the switch

Appeal points: Variety of **mounting method** on PCB, variety of top and side push switches, long operational life.

Advantages of the switch:

Variety of Short/middle stroke, low operating force and clear tactile feeling.

- Side push switch → **Save cost** by eliminating FPC.
- Side push switch → **Improved soldering strength** by means of edge mount structure.
- Top push switch → FPC improves **design flexibility**.

Recommended switches: No. 2 , 5 , 7 , 10 , 11 , 12

Proposed light touch switches

1	4.9 mm Square SMD EVQPL-type		9	2.6 mm x 1.6 mm SMD EVPBB-type	
2	4.7 mm x 3.5 mm SMD EVQP2-type		10	6.2 mm x 2.5 mm Side-operational Edge Mount EVQP4-type	
3	4 mm Square SMD EVQP6-type		11	4.5 mm x 2.2 mm Side-operational Edge Mount EVPAE-type	
4	3.5 mm x 2.9 mm SMD EVPAE-type		12	3.8 mm x 1.9 mm Side-operational SMD EVPAK-type	
5	3.4 mm x 2.9 mm SMD EVPAY-type		13	3.5 mm x 2.9 mm Side-operational SMD EVQP7-type	
6	3.0 mm x 2.6 mm SMD EVPAF-type		14	3.5 mm x 2.9 mm Side-operational HD EVPAN-type	
7	3.0 mm x 2.0 mm SMD EVPAW-type		15	3.4 mm x 1.7 mm Side-operational Edge Mount EVPAT-type	
8	2.8 mm x 1.9 mm SMD EVPBL-type		16	2.8 mm x 2.3 mm Side-operational Edge Mount EVPAV-type	
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Web catalog site

https://www3.panasonic.biz/ac/e/control/switch/light-touch/search_package/index.jsp

Device: Meters

Appliances

Health care
equipment

AV/OA equipment

Entertainment

Industrial
equipment

ICT

Automotive

Use example of switches



Use: Operation buttons for resetting, etc.

Adoption results : No. 2 , 10

Appeal points of the switch

Appeal points: Preparing for variety of **switch size** and **push plate** in order to meet the demand of many different meters.

Advantages of the switches: Variety of **switch size** and **height**.

Recommended switches: No. 1 , 2 , 3 , 6 , 7 , 9 , 10 , 12

Proposed light touch switches

1	8 mm Square Long Travel SMD EVQQ1-type		10	4.7 mm x 3.5 mm SMD EVQP2-type	
2	6 mm Square Long Travel SMD EVQP0/P1/9P-type		11	4 mm Square SMD EVQP6-type	
3	6 mm Square Long Travel 2-terminal SMD EVPAS-type		12	3.5 mm x 2.9 mm SMD EVPAA-type	
4	6 mm Square Middle Travel 2-terminal SMD EVPBD-type		13	3.4 mm x 2.9 mm SMD EVPAY-type	
5	6 mm Square Middle Travel SMD EVPBF-type		14	3.0 mm x 2.6 mm SMD EVPAF-type	
6	6 mm Square Thin Type EVQQ2/P0-type		15	3.0 mm x 2.0 mm SMD EVPAW-type	
7	5N Type EVQPA/PB-type		16	2.6 mm x 1.6 mm SMD EVPBB-type	
8	6.0 mm x 3.5 mm EVQPE-type		17	6.2 mm x 2.5 mm Side-operational Edge Mount EVQP4-type	
9	4.9 mm Square SMD EVQPL-type		18	4.5 mm x 2.2 mm Side-operational Edge Mount EVPAE-type	
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Web catalog site

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Device: Intercoms/Door intercoms

Appliances

Health care
equipment

AV/OA equipment

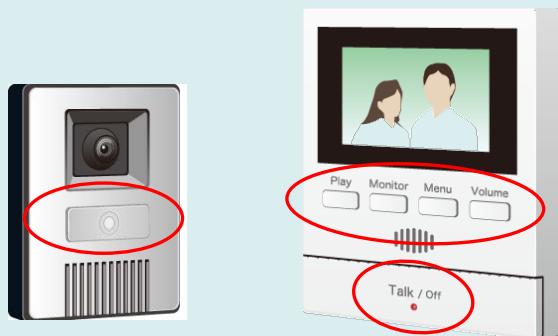
Entertainment

Industrial equipment

ICT

Automotive

Use example of switches



Use: call button, setting button, etc.

Adoption results : No. 13

Appeal points of the switch

Appeal points:

- Limited needs for small size switch as a device size is generally large enough
- **Light operation feeling**
- Demand for **THD type switches** as PCB design are rarely updated

Advantages of the switches:

- Variety of **switch size** and **height** in accordance with a device size

Recommended switches: No.2 , 3 , 5 , 6 , 7 , 8 , 9 , 13 , 14 , 15 , 16

-SMD Type- Proposed light touch switches

1	8 mm Square Long Travel SMD EVQQ1-type		7	4.9 mm Square SMD EVQPL-type	
2	6 mm Square Long Travel SMD EVQP0/P1/9P-type		8	4.7 mm x 3.5 mm SMD EVQP2-type	
3	6 mm Square Long Travel 2-terminal SMD EVPAS-type		9	3.5 mm x 2.9 mm SMD EVPAA-type	
4	6 mm Square Middle Travel 2-terminal SMD EVPBD-type		10	6.0 mm x 3.5 mm EVQPE-type IP67	
5	6 mm Square Thin Type SMD EVQQ2/P0-type		11	3.0 mm x 2.0 mm SMD EVPAW-type IP67	
6	6.0 mm x 3.5 mm EVQPE-type		12	2.6 mm x 1.6 mm SMD EVPBB-type IP67	

-DIP Type- Proposed light touch switches

13	5N Type EVQPA/PB-type		14	6.0 mm x 3.5 mm EVQPE-type	
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-Radial Taping Type- Proposed light touch switches

15	Round Type 2R EVQ11-type		16	5N Type 2R EVQ21-type	
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Web catalog site

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