### Features/Benefits

- Positive tactile feeling
- J or G terminations
- Various heights
- IP67

### Typical Applications

- Automotive
- Cellular phones
- Industrial electronics
- Network infrastructure and IT
- Elevator



**Tactile Switches** 

### Specification

FUNCTION: Momentary action CONTACT ARRANGEMENT: 1 make contact = SPST, N.O. TERMINALS: J bend & Gullwing type for SMT SEALING: IP67 except KSC5 (IP50)

### **Liability Limitation**

This datasheet does not provide enough information for applications that require a certain level of quality or safety such as automotive, medical systems, or safety equipement. Please contact customer service for the contractual specification package.

| Environmental          | Silver        | Gold           |
|------------------------|---------------|----------------|
| OPERATING TEMPERATURE: | -40°C to 85°C | -40°C to 125°C |
| STORAGE TEMPERATURE:   | -55°C to 85°C | -55°C to 125°C |

### Process

SOLDERING: Depending on the application, this component is suited to the following methods:

- Terminals being silver or gold plated over a nickel barrier, the use of slightly activated flux is suitable.
- Soldering on double wave machine for vertical versions: soldering time  $\leq$  5 sec.
- Cleaning according to typical washing processes.
- Infrared Reflow Soldering in accordance with IEC 61760-1.

#### **Electrical** Silver Gold MAXIMUM POWER: 1 VA 0 2 VA MAXIMUM VOLTAGE: 32 VDC 32 VDC MINIMUM VOLTAGE: 20 mV 20 mV MAXIMUM CURRENT: 50 mA 10 mA 1 mA\* MINIMUM CURRENT: 0.1 mA

DIELECTRIC STRENGTH (50 Hz, 1 min.): ≥ 250 Vrms

CONTACT RESISTANCE:  $\leq$  100m $\Omega$ 

INSULATION RESISTANCE (100 V):  $\geq$  10M  $\Omega$ 

BOUNCE TIME: ≤ 1 ms

 $^{\ast}$  Ultra low current with 10  $\mu A$  - 1 VDC version are available upon request for KSC2 and KSC4

### Packaging

Tape and Reel (see series for quantity information)

NOTE: Specifications listed above are for switches with standard options.

| KSC1                | KSC2             | KSC3             | KSC4             | KSC5          | KSC6          | KSC7             | KSC8          | KSC9                                 | KSC10            |
|---------------------|------------------|------------------|------------------|---------------|---------------|------------------|---------------|--------------------------------------|------------------|
| Without<br>actuator | Soft<br>actuator | Hard<br>actuator | Soft<br>actuator | Hard actuator | Hard actuator | Soft<br>actuator | Hard actuator | Hard<br>actuator                     | Soft<br>actuator |
| H = 2.5 mm          | H = 3.5 mm       | H = 3.5 mm       | H = 5.2 mm       | H = 5.6 mm    | H = 7.7 mm    | H = 4.3 mm       | H = 4.9 mm    | H = 7.7 mm<br>compatible with button | H = 4.9 mm       |
| IP67                | IP67             | IP67             | IP67             | IP50          | IP67          | IP67             | IP67          | IP67                                 | IP67             |

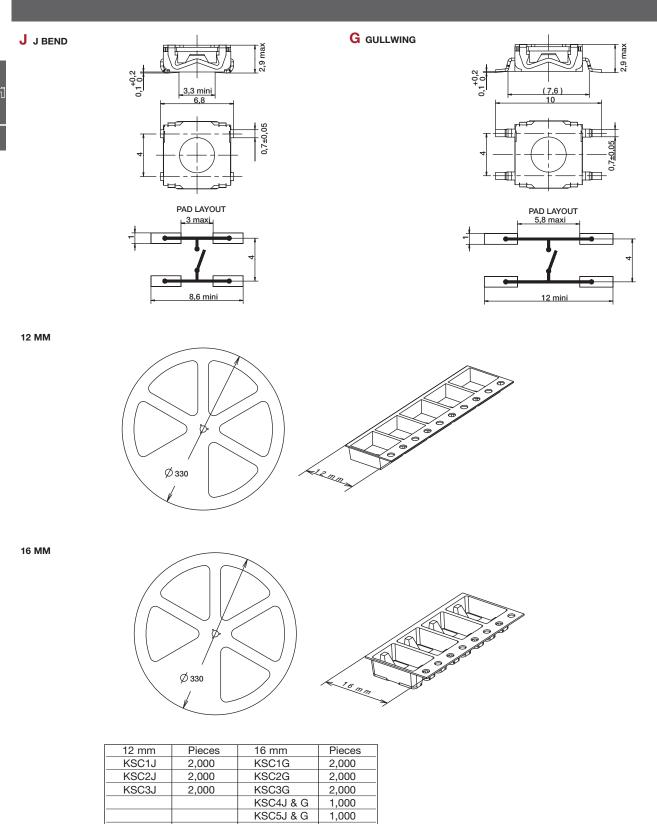
### **KSC Product Range**



Note: KSC Series is subject to variants. Please contact customer service for other options.



# KSC Series Sealed Tact Switch for SMT



KSC6J & G

KSC7J & G

KSC8J & G

KSC9J & G

KSC10J & G

750

1,000

1,000

750

B-50

1,000



Dimensions are shown: mm Specifications and dimensions subject to change

**C&K** 

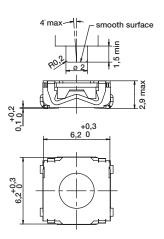
### KSC1 without actuator 2,5 mm high



| Туре   | Operating<br>force FA<br>(Newtons) | Operating<br>life<br>(operations) | Travel<br>(mm) |
|--------|------------------------------------|-----------------------------------|----------------|
| KSC121 | $1.8 \pm 0.65$                     | 200,000                           | 0.3 ± 0.15     |
| KSC141 | 3 ± 0.75                           | 200,000                           | 0.3 ± 0.15     |
| KSC151 | 5.5 ± 1.4                          | 100,000                           | 0.35 ± 0.15    |

### Packaging

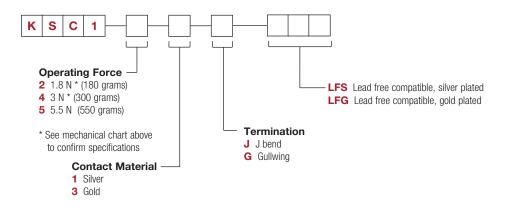
Switches delivered on continuous tape & reels of 2,000 pieces Dimensions according to EIA RS-481/ IEC 60286-3 standard External diameter 330  $\pm$  2 mm



### How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

However, please note that all the combinations of these options are not feasible. For any part number different from those listed above, please consult your local representative.

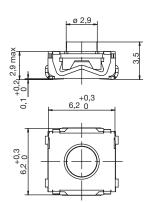




### KSC2 soft actuator 3,5 mm high



| Туре       | Operating<br>force FA<br>(Newtons) | Operating<br>life<br>(operations) | Travel<br>(mm)   |
|------------|------------------------------------|-----------------------------------|------------------|
| KSC201     | 1.6 ± 0.6                          | 5,000,000                         | 0.3 ± 0.2        |
| KSC221     | 2 ± 0.5                            | 500,000                           | 0.35 + 0.3/- 0.1 |
| KSC222     | 2 ± 0.5                            | 1,000,000                         | 0.35 ± 0.15      |
| KSC241     | $3.5 \pm 0.9$                      | 300,000                           | 0.5 ± 0.2        |
| KSC251     | 5.55 ± 1.45                        | 300,000                           | 0.5 ± 0.2        |
| KSC241 SPD | 3.55 ± 0.9                         | 300,000                           | 0.5 ± 0.2        |
| KSC251 SPD | 6.2 ± 1.55                         | 100,000                           | 0.6 ± 0.2        |



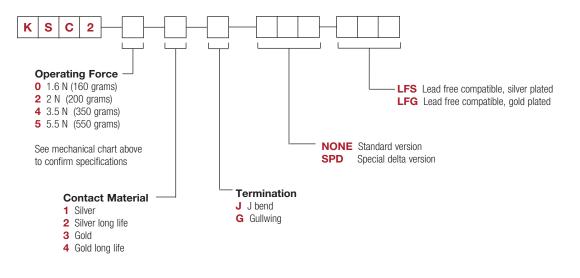
### Packaging

Switches delivered on continuous tape & reels of 2,000 pieces Dimensions according to EIA RS-481/ IEC 60286-3 standard External diameter 330  $\pm$  2 mm

### How To Order

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#### However, please note that all the combinations of these options are not feasible. For any part number different from those listed above, please consult your local representative.



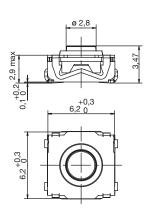


Specifications and dimensions subject to change

### KSC3 hard actuator 3,5 mm high



| Туре   | Operating<br>force FA<br>(Newtons) | Operating<br>life<br>(operations) | Travel<br>(mm) |
|--------|------------------------------------|-----------------------------------|----------------|
| KSC321 | 2 ± 0.4                            | 300,000                           | 0.2 + 0.3/- 0  |
| KSC341 | 3 ± 0.75                           | 300,000                           | 0.2 + 0.3/- 0  |
| KSC351 | 5 ± 1                              | 100,000                           | 0.25 + 0.3/- 0 |



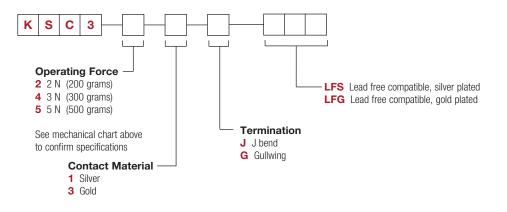
### Packaging

Switches delivered on continuous tape & reels of 2,000 pieces Dimensions according to EIA RS-481/ IEC 60286-3 standard External diameter 330  $\pm$  2 mm

### How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

#### However, please note that all the combinations of these options are not feasible. For any part number different from those listed above, please consult your local representative.



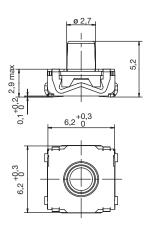




### KSC4 soft actuator 5,2 mm high



| Туре        | Operating<br>force FA<br>(Newtons) | Operating<br>life<br>(operations) | Travel<br>(mm) |
|-------------|------------------------------------|-----------------------------------|----------------|
| KSC401 50SH | 1.45 ± 0.55                        | 5,000,000                         | 0.5 ± 0.25     |
| KSC411 70SH | 1.4 ± 0.35                         | 1,000,000                         | 0.35 ± 0.20    |
| KSC421 70SH | 1.7 ± 0.45                         | 300,000                           | 0.5 ± 0.25     |
| KSC422 70SH | 1.7 ± 0.45                         | 1,000,000                         | 0.5 ± 0.25     |
| KSC441 70SH | 4 ± 1                              | 300,000                           | 0.75 ± 0.25    |
| KSC442 70SH | 4 ± 1                              | 1,000,000                         | 0.75 ± 0.25    |
| KSC451 70SH | 4.25 ± 0.75                        | 300,000                           | 0.8 ± 0.2      |
| KSC441 SPD  | $3.5 \pm 0.9$                      | 300,000                           | $0.7 \pm 0.2$  |
| KSC441 ST1  | 3.4 ± 1                            | 300,000                           | 0.7 ± 0.25     |
| KSC441 ST2  | 3.4 ± 1                            | 300,000                           | 0.35 ± 0.20    |
| KSC461 ST1  | 6.25 ± 1.75                        | 100,000                           | 1 ± 0.3        |
| KSC461 ST2  | 6.25 ± 1.75                        | 300,000                           | 0.5 ± 0.2      |
|             |                                    |                                   |                |



### Packaging

B

**Tactile Switches** 

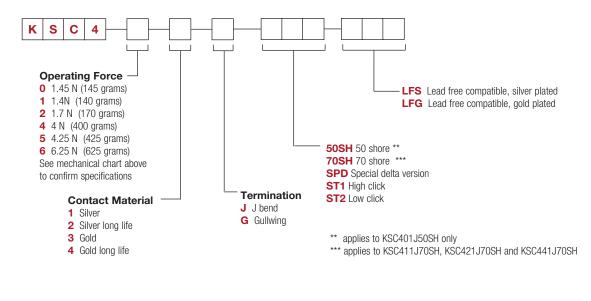
Switches delivered on continuous tape & reels of 1,000 pieces Dimensions according to EIA RS-481/ IEC 60286-3 standard External diameter 330  $\pm$  2 mm

### How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

## However, please note that all the combinations of these options are not feasible.

For any part number different from those listed above, please consult your local representative.





Specifications and dimensions subject to change

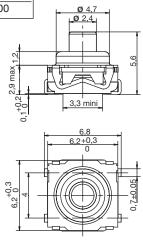
### KSC5 hard actuator 5,6 mm high



| [ |        | Operating force | Operating force | Travel to   | Travel to    |                 |                 |
|---|--------|-----------------|-----------------|-------------|--------------|-----------------|-----------------|
|   |        | axial FA        | lateral FL      | make        | make         | Life expectancy | Life expectancy |
|   | Туре   | N (grams)       | N (grams) ±30%  | axial (mm)  | lateral (mm) | cycles, axial   | cycles, lateral |
|   | KSC521 | 2 ± 0.5         | 1.2 - 2.6       | 0.25 ± 0.15 | 0.5 ± 0.25   | 100,000         | 10,000          |
|   | KSC541 | 3 ± 0.75        | 1.8 - 3.8       | 0.25 ± 0.15 | 0.5 ± 0.25   | 100,000         | 10,000          |

### Packaging

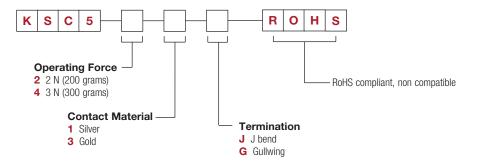
Switches delivered on continuous tape & reels of 1,000 pieces, dimensions according to EIA RS-481/ IEC 60286-3 standard External diameter 330  $\pm$  2 mm



### How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

#### However, please note that all the combinations of these options are not feasible. For any part number different from those listed above, please consult your local representative.





Specifications and dimensions subject to change

### KSC6 hard actuator 7,7 mm high



B

**Tactile Switches** 

| Туре   | Operating<br>force FA<br>(Newtons) | Operating<br>life<br>(operations) | Travel<br>(mm) |
|--------|------------------------------------|-----------------------------------|----------------|
| KSC621 | 1.7 ± 0.5                          | 300,000                           | $0.4 \pm 0.2$  |
| KSC631 | 2.55 ± 0.65                        | 300,000                           | $0.4 \pm 0.2$  |
| KSC641 | 3.4 ± 0.85                         | 300,000                           | 0.4 ± 0.2      |

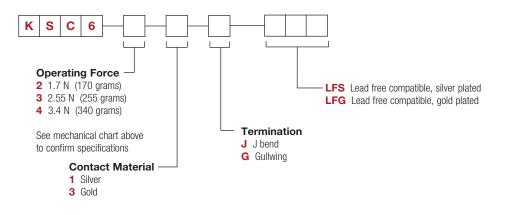
### Packaging

Switches delivered on continuous tape & reels of 750 pieces Dimensions according to EIA RS-481/ IEC 60286-3 standard External diameter 330  $\pm$  2 mm

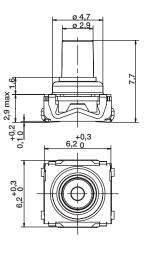
### How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

#### However, please note that all the combinations of these options are not feasible. For any part number different from those listed above, please consult your local representative.







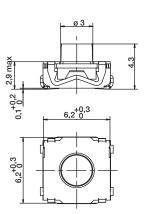


Specifications and dimensions subject to change

### KSC7 soft actuator 4,3 mm high



| Туре   | Operating<br>force FA<br>(Newtons) | Operating<br>life<br>(operations) | Travel<br>(mm) |
|--------|------------------------------------|-----------------------------------|----------------|
| KSC701 | $1.6 \pm 0.6$                      | 5,000,000                         | 0.3 ± 0.2      |
| KSC721 | 2.25 ± 0.55                        | 300,000                           | 0.3 ± 0.15     |
| KSC741 | 3.9 ± 1                            | 300,000                           | 0.4 ± 0.2      |



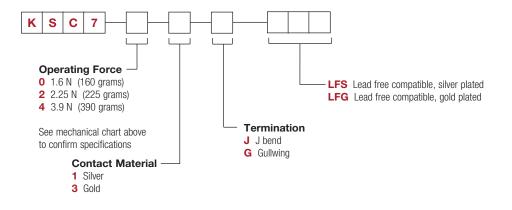
### Packaging

Switches delivered on continuous tape & reels of 1,000 pieces Dimensions according to EIA RS-481/ IEC 60286-3 standard External diameter 330  $\pm$  2 mm

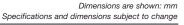
#### How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

#### However, please note that all the combinations of these options are not feasible. For any part number different from those listed above, please consult your local representative.







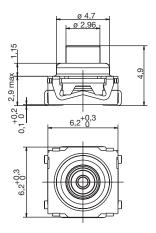
### KSC8 hard actuator 4,9 mm high



| Туре      | Operating<br>force FA<br>(Newtons) | Operating<br>life<br>(operations) | Travel<br>(mm) |
|-----------|------------------------------------|-----------------------------------|----------------|
| KSC821    | 3.15 ± 0.75                        | 300,000                           | 0.65 ± 0.2     |
| KSC821 OL | $1.7 \pm 0.5$                      | 300,000                           | $0.4 \pm 0.2$  |
| KSC831 OL | $2.55 \pm 0.65$                    | 300,000                           | $0.4 \pm 0.2$  |
| KSC841 OL | $3.4 \pm 0.85$                     | 300,000                           | $0.4 \pm 0.2$  |

### Packaging

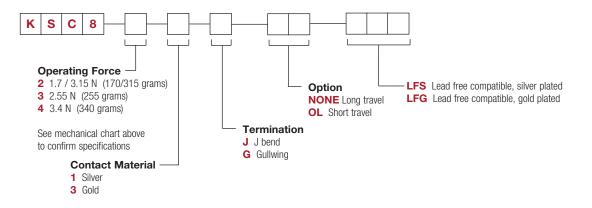
Switches delivered on continuous tape & reels of 1,000 pieces Dimensions according to EIA RS-481/ IEC 60286-3 standard External diameter 330  $\pm$  2 mm



### How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

However, please note that all the combinations of these options are not feasible. For any part number different from those listed above, please consult your local representative.





Specifications and dimensions subject to change

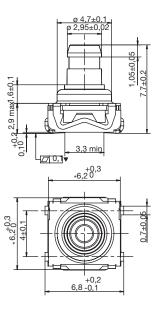
### KSC9 hard actuator 7,7 mm high



| Туре   | Operating<br>force FA<br>(Newtons) | Operating<br>life<br>(operations) | Travel<br>(mm) |
|--------|------------------------------------|-----------------------------------|----------------|
| KSC921 | 1.7 ± 0.5                          | 300,000                           | 0.4 ± 0.2      |
| KSC931 | 2.25 ± 0.65                        | 300,000                           | $0.4 \pm 0.2$  |
| KSC941 | 3.4 ± 0.85                         | 300,000                           | 0.4 ± 0.2      |

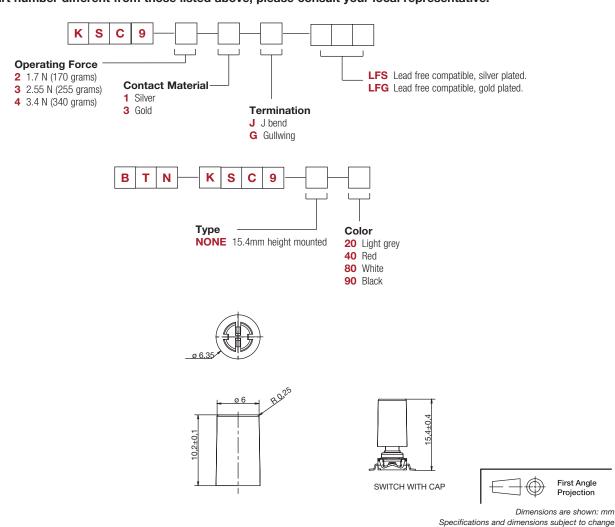
### Packaging

Switches delivered on continuous tape & reels of 750 pieces Dimensions according to EIA RS-481/ IEC 60286-3 standard External diameter  $330 \pm 2$  mm



### How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box. For any part number different from those listed above, please consult your local representative.





**Tactile Switches** 

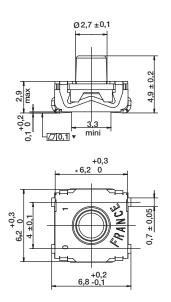
### KSC10 soft actuator 4,9 mm high



| Туре    | Operating<br>force FA<br>(Newtons) | Operating<br>life<br>(operations) | Travel<br>(mm) |
|---------|------------------------------------|-----------------------------------|----------------|
| KSC1001 | 1.45 ± 0.55                        | 5,000,000                         | 0.45 ± 0.25    |

### Packaging

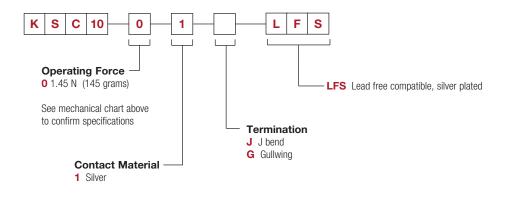
Switches delivered on continuous tape & reels of 1,000 pieces Dimensions according to EIA RS-481/ IEC 60286-3 standard External diameter 330  $\pm$  2 mm



### How To Order

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However, please note that all the combinations of these options are not feasible. For any part number different from those listed above, please consult your local representative.



Note: KSC10 offered with yellow actuator as standard, hardness 55 Shore



Specifications and dimensions subject to change
www.ckswitches.com

# **KSC4V2** Series Side Actuated Sealed Tact Switch

### Features/Benefits

- Full SMD side actuated
- Haptic adaptability
- Pin in paste terminations •
- Tape & reel
- IP67

### Specification

FUNCTION: momentary action CONTACT ARRANGEMENT: 1 make contact = SPST, N.O. TERMINALS:

- 2 pin in paste signal terminals
- 3 SMD ground terminals

### Mechanical

| Туре            | Force<br>(N)    | Operating Life<br>(operations) | Travel<br>(mm) |
|-----------------|-----------------|--------------------------------|----------------|
| KSC441V2SPDLFS  | 3.5 ± 1.0       | 300,000                        | 0.7 ± 0.2      |
| KSC421V270SHLFS | $1.55 \pm 0.45$ | 300,000                        | 0.5 ± 0.2      |

NOTE: Basic version is based on KSC441V2 SPDELTA LFS. Other configurations of haptics are available upon demand.

MISUSE OVERLOAD: 40N with back support SHEAR FORCE:10N without back support

| Electrical       | Silver | Gold   |
|------------------|--------|--------|
| MAXIMUM POWER:   | 1 VA   | 0.2 VA |
| MAXIMUM VOLTAGE: | 32 VDC | 32 VDC |
| MINIMUM VOLTAGE: | 20 mV  | 20 mV  |
| MAXIMUM CURRENT: | 50 mA  | 10 mA  |
| MINIMUM CURRENT: | 1 mA   | 0.1 mA |

DIELECTRIC STRENGTH (50 Hz, 1 min.): ≥ 250 Vrms CONTACT RESISTANCE:  $\leq$  100 m $\Omega$ INSULATION RESISTANCE (100 V, initial stage): > 10° Ω BOUNCE TIME: < 1 ms

# Environmental

**OPERATING TEMPERATURE:** -40°C to 85°C -40°C to 125°C STORAGE TEMPERATURE: -55°C to 85°C -55°C to 125°C

### **Process**

**Typical Applications** 

Industrial electronics

Network equipment

**Telecommunications** 

Automotive

SOLDERING: Depending on the application, this component is suited to the following methods:

Silver

- Cleaning according to typical washing processes.
- Infrared Reflow Soldering in accordance with IEC 61760-1.

TERMINALS: pin in paste, silver or gold plated TOP PLATE: tin plated MSL level: 1 Vacuum pick head mandatory

### Packaging

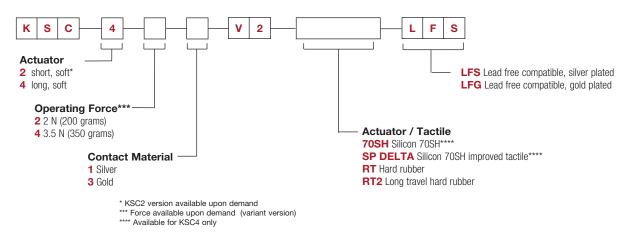
In reels of 500 pieces.

Dimensions of reels according to EIA RS481 or IEC 2863. External diameter 330 mm ± 2 mm.

NOTE: This product is designed and manufactured for general electronic devices. For systems where reliability and safety are required, please contact your sales representative to secure product integration and function to secure usage.

### How To Order

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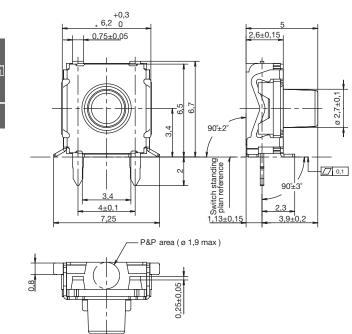


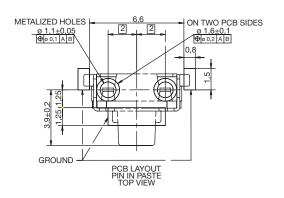




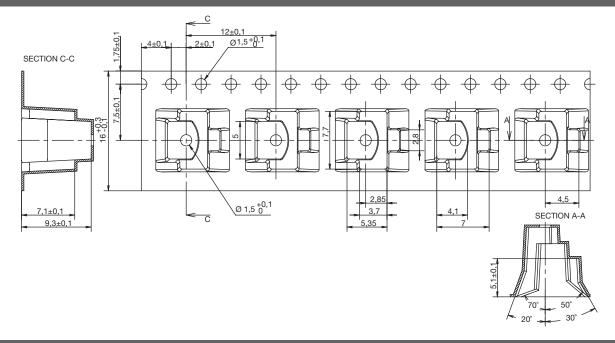
Gold

# KSC4V2 Series Side Actuated Sealed Tact Switch





**TAPE AND REEL** 



INTEGRATION





Specifications and dimensions subject to change



www.ckswitches.com

# **Mouser Electronics**

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

## **C&K Components:**

KSC245JLFG KSC445J70SHLFG KSC245GLFG KSC471JLFS

### **C&K Switches:**

KSC121G KSC123J KSC121J KSC241J KSC241G KSC441G KSC421V30ACT3.17 KSC421G KSC421J KSC351J KSC351G KSC321J KSC321G KSC141G KSC141J KSC411JB KSC221G KSC621J KSC621G KSC401JB KSC341G KSC641J KSC641G KSC151G KSC151J KSC541G KSC541J KSC121J-LFS KSC401JJOSH LFS KSC411J70SH LFS KSC221G LFS KSC221J LFS KSC641G LFS KSC351J LFS KSC241G LFS KSC421G70SH LFS KSC241J LFS KSC221G LFS KSC321J LFS KSC641G LFS KSC441G 70SH LFS KSC401J 50SH LFS KSC621J LFS KSC421J 70SH LFS KSC421 V30 ACT2.95 LFS KSC222J LFS KSC442G 70SH LFS KSC403J 50SH LFG KSC521G ROHS KSC411G 70SH LFS KSC422G 70SH LFS KSC222G LFS KSC442G 70SH LFS KSC403J 50SH LFG KSC521G ROHS KSC411G 70SH LFS KSC421G 70SH LFS KSC441J ST1 LFS KSC401J 50SH LFS KSC442J 70SH LFS KSC441G ST1 LFS KSC441G ST2 LFS KSC441J ST2 LFS KSC441J ST1 LFS KSC421 V30 ACT3.17 LFS KSC443J 70SH LFG KSC521J ROHS KSC541J ROHS KSC721J LFS KSC721G LFS KSC741J LFS KSC741G LFS KSC221J KSC341J KSC441J KSC441V2 SP Delta LFS KSC921G LFS KSC921J LFS KSC931G LFS KSC931J LFS KSC941G LFS KSC941J LFS KSC341G LFS KSC701G LFS KSC721J LFS KSC471GLFS KSC445G70SHLFG KSC523JR0HS KSC541JR0HS KSC521GR0HS KSC701G LFS KSC1001J LFS KSC471GLFS KSC441GST2LFS KSC441G70SHLFS KSC411J70SHLFS KSC221JLFS KSC441JST2LFS KSC321JLFS KSC441GST2LFS KSC441J70SHLFS KSC411J70SHLFS KSC221JLFS KSC341JEFS KSC321JLFS KSC351JLFS KSC441J70SHLFS