

KSC Series Sealed Tact Switch for SMT

Features/Benefits

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

Typical Applications

- Automotive
- Medical instruments
- Industrial electronics
- Network infrastructure and IT
- Elevator



Specification

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

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 |

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 equipment. Please contact customer service for the contractual specification package.

DIELECTRIC STRENGTH (50 Hz, 1 min.): ≥ 250 Vrms
 CONTACT RESISTANCE: ≤ 100 m Ω
 INSULATION RESISTANCE (100 V): ≥ 10 M Ω
 BOUNCE TIME: ≤ 1 ms

* Ultra low current with 10 μ A - 1 VDC version are available upon request for KSC2 and KSC4

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 |

Packaging

Tape and Reel (see series for quantity information)

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 ≤ 5 sec.
- Cleaning according to typical washing processes.
- Lead free reflow soldering process in accordance with IEC 61760-1.

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

KSC Product Range

| KSC1 | KSC2 | KSC3 | KSC4 | KSC5 | KSC6 | KSC7 | KSC8 | KSC9 | KSC10 |
|------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----------------------------------|---------------|
| Without actuator | Soft actuator | Hard actuator | Soft actuator | Hard actuator | Hard actuator | Soft actuator | Hard actuator | Hard actuator | Soft 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 compatible with button | H = 4.9 mm |
| IP67 | IP67 | IP67 | IP67 | IP50 | IP67 | IP67 | IP67 | IP67 | IP67 |



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

KSC Series Sealed Tact Switch for SMT

Tactile Switches

B

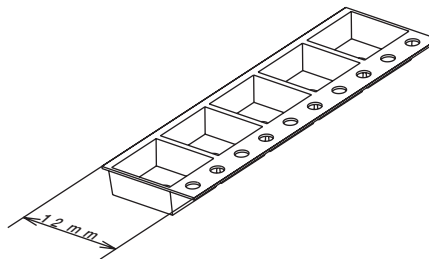
J BEND



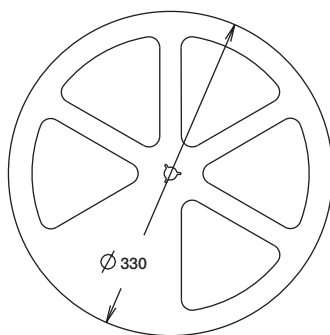
G GULLWING



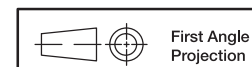
12 MM



16 MM



| 12 mm | Pieces | 16 mm | Pieces |
|-------|--------|------------|--------|
| KSC1J | 2,000 | KSC1G | 2,000 |
| KSC2J | 2,000 | KSC2G | 2,000 |
| KSC3J | 2,000 | KSC3G | 2,000 |
| | | KSC4J & G | 1,000 |
| | | KSC5J & G | 1,000 |
| | | KSC6J & G | 750 |
| | | KSC7J & G | 1,000 |
| | | KSC8J & G | 1,000 |
| | | KSC9J & G | 750 |
| | | KSC10J & G | 1,000 |



First Angle
Projection

Dimensions are shown: mm
Specifications and dimensions subject to change

KSC1 Series Sealed Tact Switch for SMT

KSC1 without actuator 2,5 mm high



| Type | Operating force FA (Newtons) | Operating life (operations) | Travel (mm) |
|--------|------------------------------|-----------------------------|-------------|
| KSC121 | 1.8 ± 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

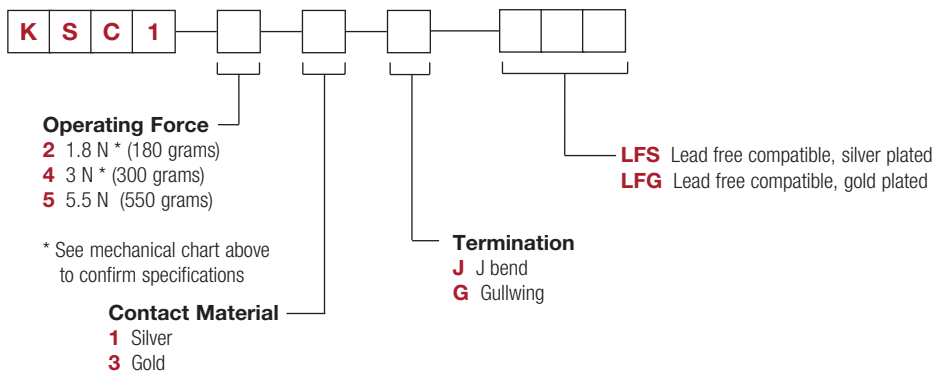
Switches delivered on continuous tape & reels of 2,000 pieces
 Dimensions according to EIA RS-481/ IEC 60286-3 standard
 External diameter 330 ± 2 mm



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.



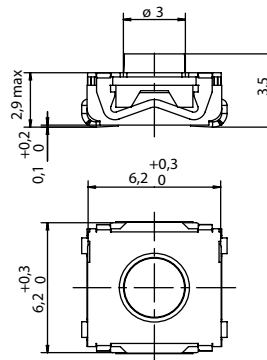
Dimensions are shown: mm
 Specifications and dimensions subject to change

KSC2 Series Sealed Tact Switch for SMT

KSC2 soft actuator 3,5 mm high



| Type | Operating force FA (Newtons) | Operating life (operations) | Travel (mm) |
|------------|------------------------------|-----------------------------|--------------------|
| KSC201 | 1.6 ± 0.6 | 5,000,000 | 0.3 ± 0.2 |
| KSC221 | 2 ± 0.5 | 500,000 | 0.35 + 0.25/- 0.15 |
| KSC222 | 2 ± 0.5 | 1,000,000 | 0.35 + 0.25/- 0.15 |
| KSC241 | 3.5 ± 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

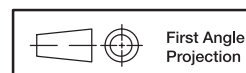
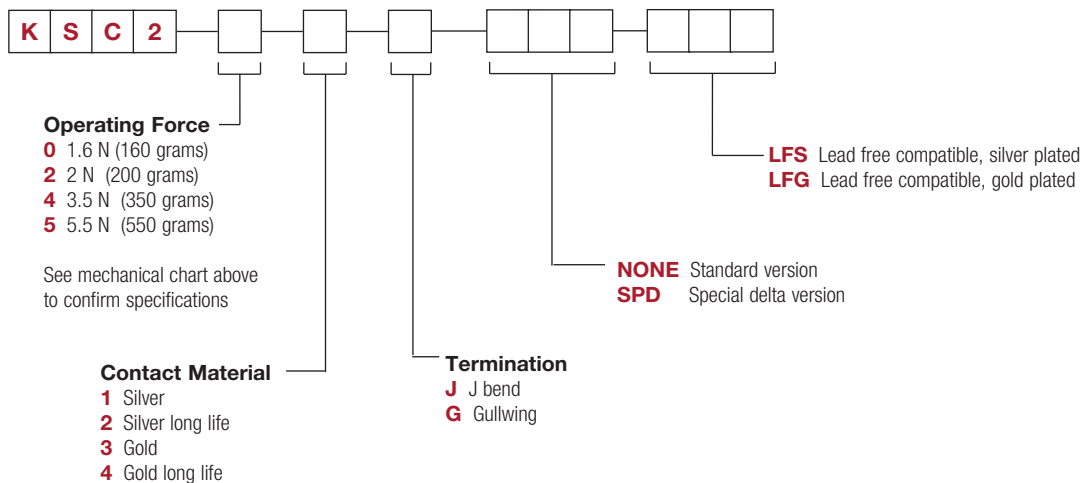
Switches delivered on continuous tape & reels of 2,000 pieces
 Dimensions according to EIA RS-481/ IEC 60286-3 standard
 External diameter 330 ± 2 mm

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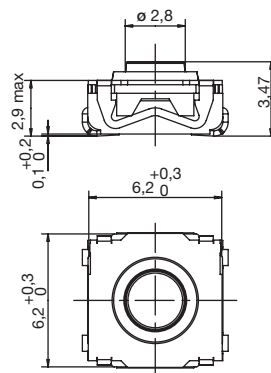
Dimensions are shown: mm
 Specifications and dimensions subject to change

KSC3 Series Sealed Tact Switch for SMT

KSC3 hard actuator 3,5 mm high



| Type | Operating force FA (Newtons) | Operating life (operations) | Travel (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

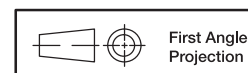
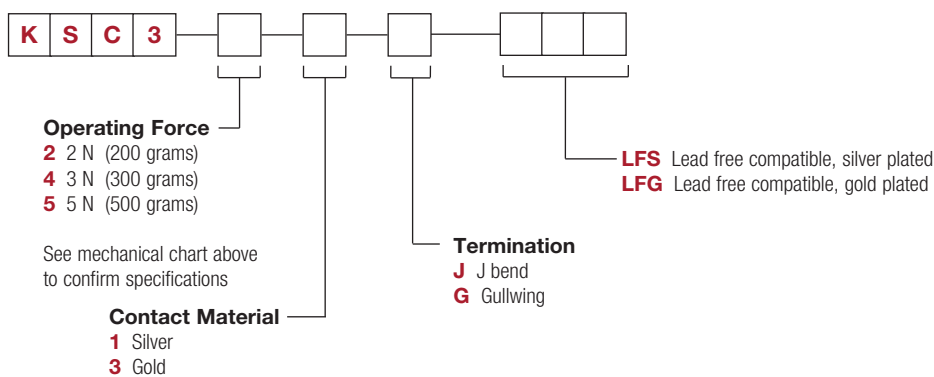
Switches delivered on continuous tape & reels of 2,000 pieces
 Dimensions according to EIA RS-481/ IEC 60286-3 standard
 External diameter 330 ± 2 mm

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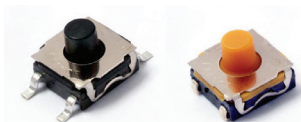
For any part number different from those listed above, please consult your local representative.



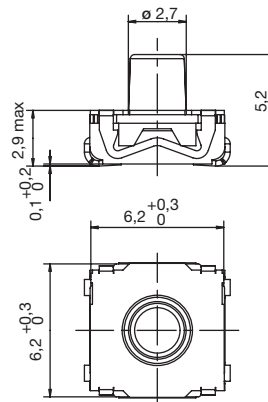
Dimensions are shown: mm
 Specifications and dimensions subject to change

KSC4 Series Sealed Tact Switch for SMT

KSC4 soft actuator 5,2 mm high



| Type | Operating force FA (Newtons) | Operating life (operations) | Travel (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 ± 0.9 | 300,000 | 0.7 ± 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

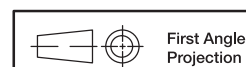
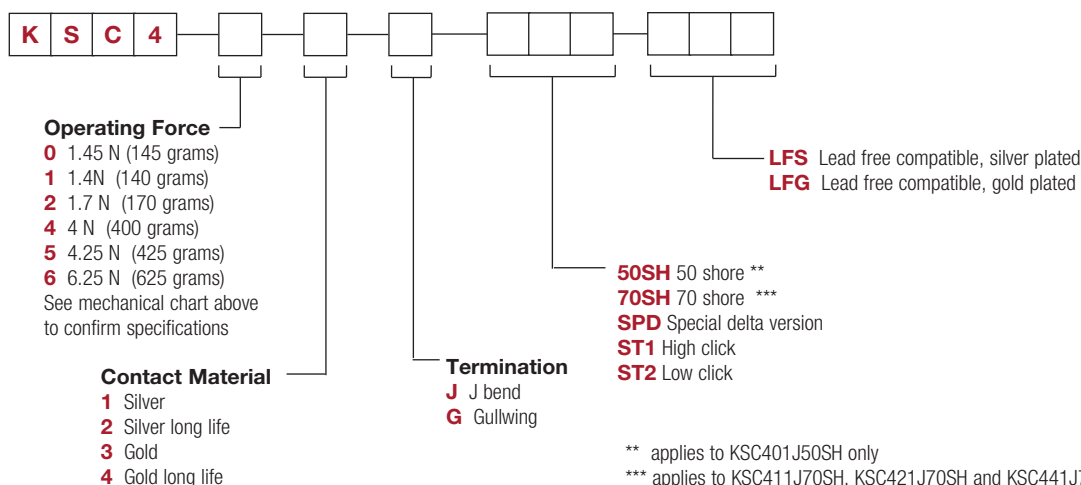
Switches delivered on continuous tape & reels of 1,000 pieces
 Dimensions according to EIA RS-481/ IEC 60286-3 standard
 External diameter 330 ± 2 mm

How To Order

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Dimensions are shown: mm
 Specifications and dimensions subject to change

NEW

KSC-DCT Series Dual Circuit Technology Tact Switch

Features/Benefits

- SPDT NC-NO function
- Silicone actuator
- J or G terminations
- Tape & reel
- IP67

Typical Applications

- Automotive
- Medical equipment
- Industrial electronics



| Type | Force (N) | Operating Life (operations) | Travel (mm) |
|----------------------|--------------|-----------------------------|-----------------|
| KSC441J DCT 70SH LFS | 4.75 +/-1.25 | 300,000 | 0.85+0.35/-0.25 |
| KSC441G DCT 70SH LFS | 4.75 +/-1.25 | 300,000 | 0.85+0.35/-0.25 |

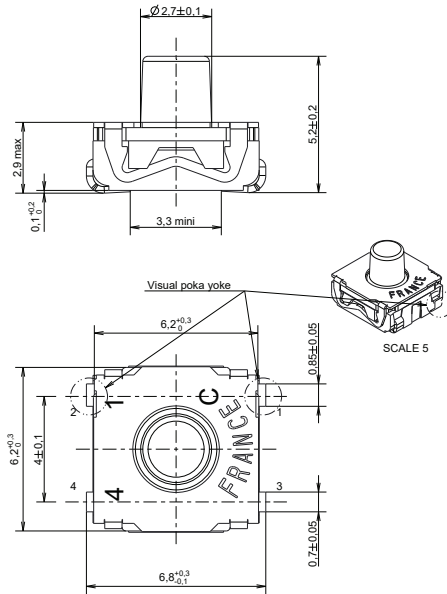
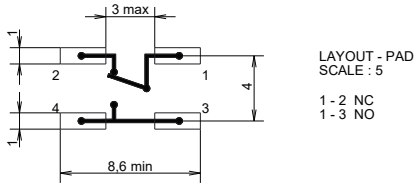
Packaging

In reels of 1,000 pieces.

Dimensions of reels according to EIA RS481 or IEC 2863.

External diameter 330 ± 2 mm

PCB Layout

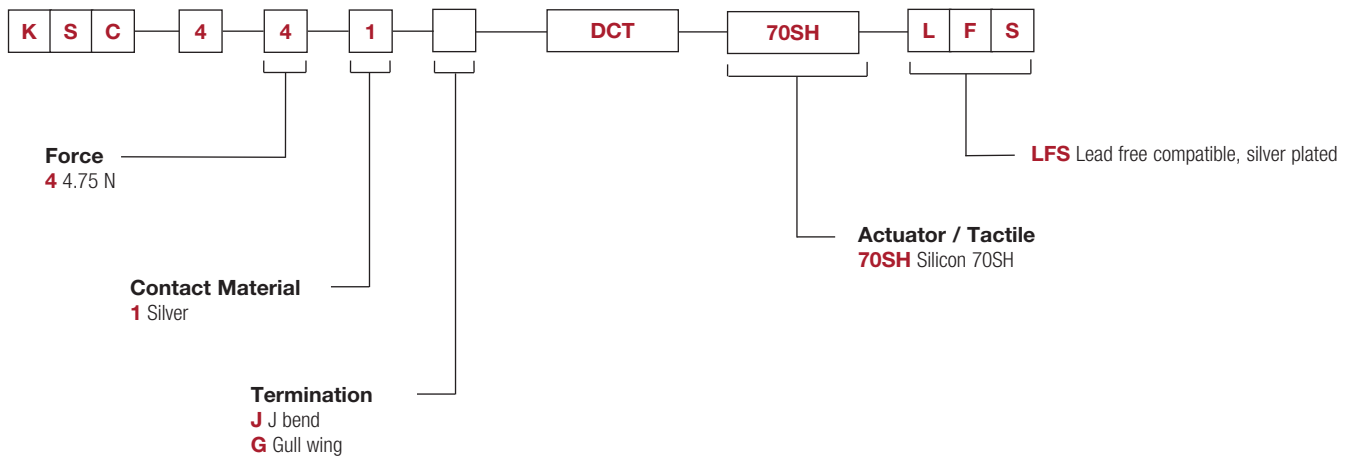


B Tactile Switches

How To Order

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Dimensions are shown: mm
Specifications and dimensions subject to change



25 oct 18

KSC-PF Series Potting Friendly Tact Switch

NEW



Features/Benefits

- Extended Cage
- Silicone actuator
- J or G terminations
- Tape & reel
- IP67

Typical Applications

- Automotive
- Medical equipment
- Industrial electronics

Tactile Switches

| Type | Force (N) | Operating Life (operations) | Travel (mm) |
|---------------------|--------------|-----------------------------|-------------|
| KSC421G 70SH LFS PF | 1.8+/-0.45 | 300,000 | 0.5+/-0.25 |
| KSC421J 70SH LFS PF | 1.8+/-0.45 | 300,000 | 0.5+/-0.25 |
| KSC422G 70SH LFS PF | 1.8+/-0.45 | 1,000,000 | 0.5+/-0.25 |
| KSC422J 70SH LFS PF | 1.8+/-0.45 | 1,000,000 | 0.5+/-0.25 |
| KSC441G 70SH LFS PF | 4 +/- 1 | 300,000 | 0.65+/-0.25 |
| KSC441J 70SH LFS PF | 4 +/- 1 | 300,000 | 0.65+/-0.25 |
| KSC442G 70SH LFS PF | 4 +/- 1 | 1,000,000 | 0.65+/-0.25 |
| KSC442J 70SH LFS PF | 4 +/- 1 | 1,000,000 | 0.65+/-0.25 |
| KSC461G 70SH LFS PF | 6.25+/- 1.75 | 300,000 | 0.75+/-0.25 |
| KSC461J 70SH LFS PF | 6.25+/- 1.75 | 300,000 | 0.75+/-0.25 |
| KSC471G 70SH LFS PF | 4 +/- 1 | 300,000 | 0.65+/-0.25 |
| KSC471J 70SH LFS PF | 4 +/- 1 | 300,000 | 0.65+/-0.25 |

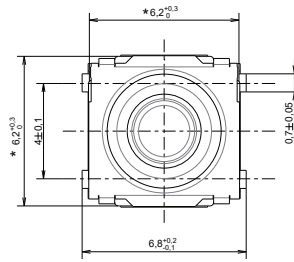
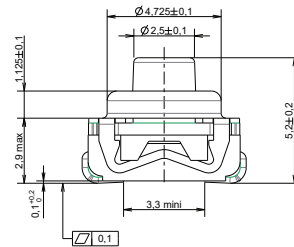
Max. potting height: 2.9 mm

Packaging

In reels of 1,000 pieces.

Dimensions of reels according to EIA RS481 or IEC 2863.

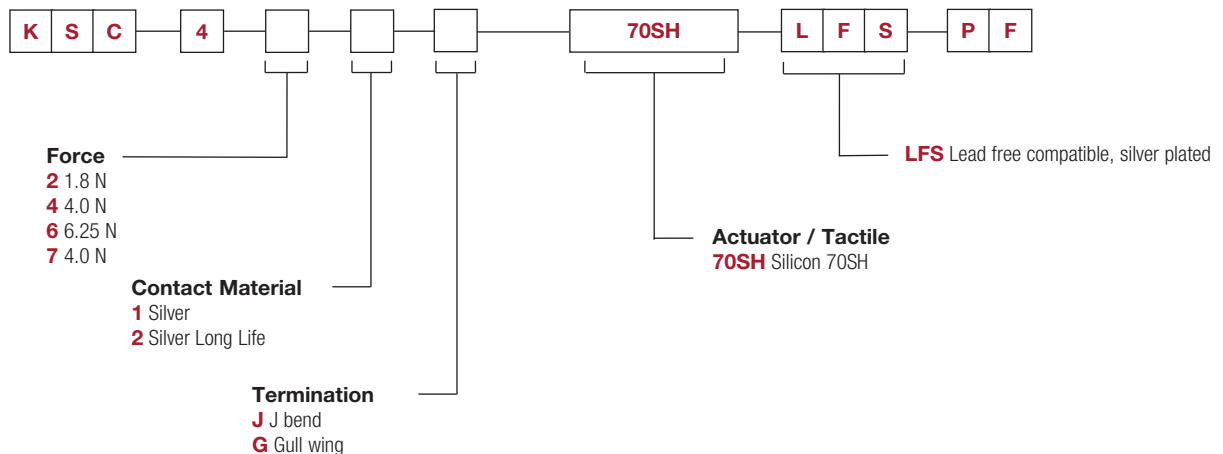
External diameter 330 ± 2 mm



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*Dimensions are shown: mm
Specifications and dimensions subject to change*

KSC5 Series

Tact Switch with Rocker Option for SMT

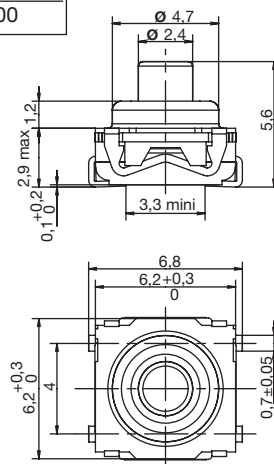
KSC5 hard actuator 5,6 mm high



| Type | Operating force axial FA N (grams) | Operating force lateral FL N (grams) ±30% | Travel to make axial (mm) | Travel to make lateral (mm) | Life expectancy cycles, axial | Life expectancy 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 ± 2 mm

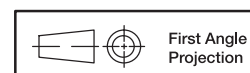
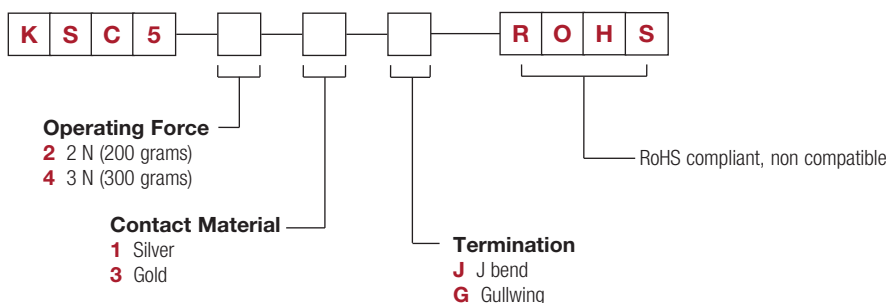


How To Order

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First Angle
Projection

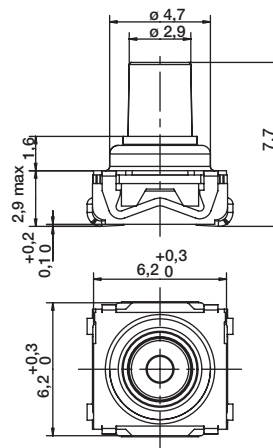
Dimensions are shown: mm
Specifications and dimensions subject to change

KSC6 Series Sealed Tact Switch for SMT

KSC6 hard actuator 7,7 mm high



| Type | Operating force FA (Newtons) | Operating life (operations) | Travel (mm) |
|--------|------------------------------|-----------------------------|-------------|
| KSC621 | 1.7 ± 0.5 | 300,000 | 0.4 ± 0.2 |
| KSC631 | 2.55 ± 0.65 | 300,000 | 0.4 ± 0.2 |
| KSC641 | 3.4 ± 0.85 | 300,000 | 0.4 ± 0.2 |



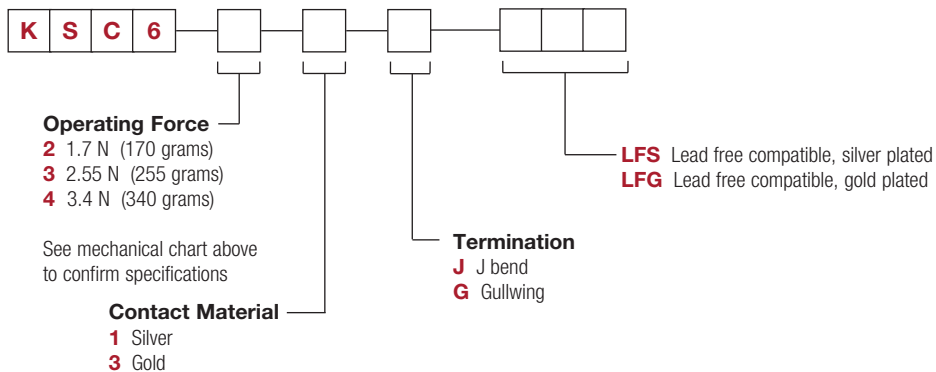
Packaging

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

How To Order

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KSC7 Series

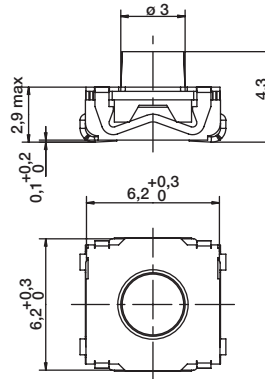
Sealed Tact Switch for SMT

KSC7 soft actuator 4,3 mm high



Tactile Switches B

| Type | Operating force FA (Newtons) | Operating life (operations) | Travel (mm) |
|--------|------------------------------|-----------------------------|-------------|
| KSC701 | 1.6 ± 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 |



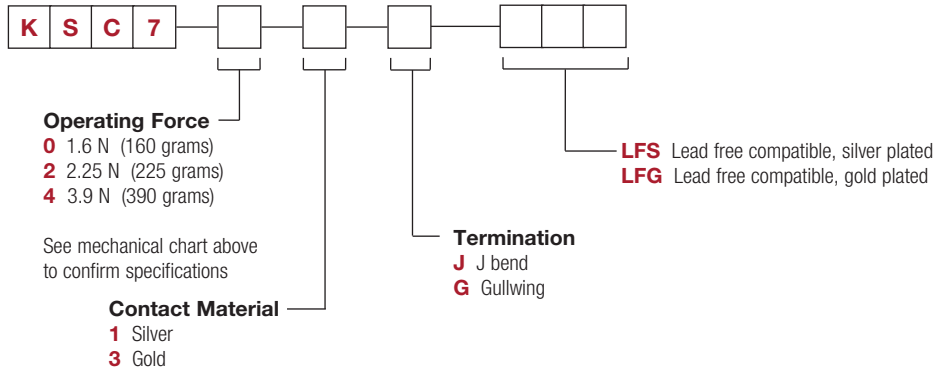
Packaging

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

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KSC8 Series Sealed Tact Switch for SMT

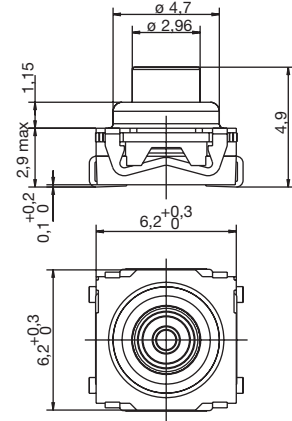
KSC8 hard actuator 4,9 mm high



| Type | Operating force FA (Newtons) | Operating life (operations) | Travel (mm) |
|-----------|------------------------------|-----------------------------|-------------|
| KSC821 | 3.15 ± 0.75 | 300,000 | 0.65 ± 0.2 |
| KSC821 OL | 1.7 ± 0.5 | 300,000 | 0.4 ± 0.2 |
| KSC831 OL | 2.55 ± 0.65 | 300,000 | 0.4 ± 0.2 |
| KSC841 OL | 3.4 ± 0.85 | 300,000 | 0.4 ± 0.2 |

Packaging

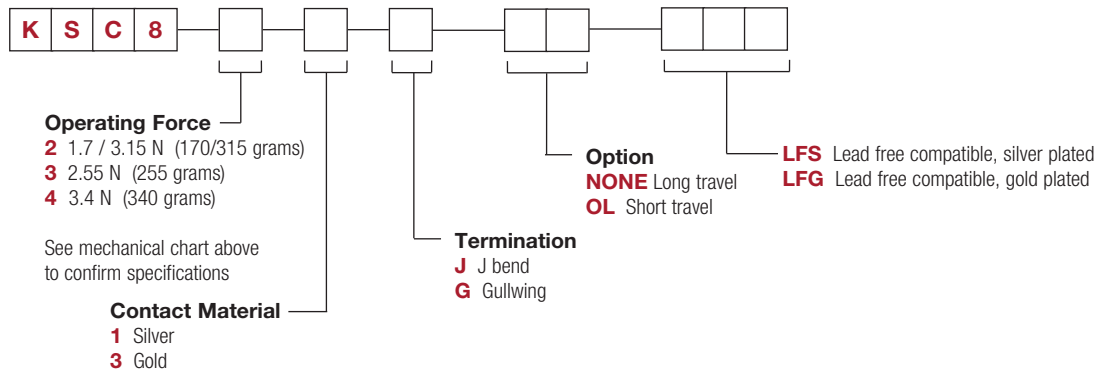
Switches delivered on continuous tape & reels of 1,000 pieces
 Dimensions according to EIA RS-481/ IEC 60286-3 standard
 External diameter 330 ± 2 mm



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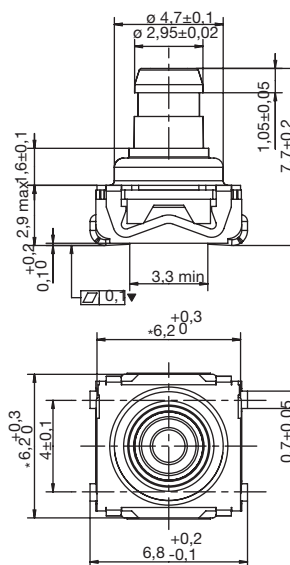
KSC9 Series

Sealed Tact Switches for SMT

KSC9 hard actuator 7,7 mm high



| Type | Operating force FA (Newtons) | Operating life (operations) | Travel (mm) |
|--------|------------------------------|-----------------------------|-------------|
| KSC921 | 1.7 ± 0.5 | 300,000 | 0.4 ± 0.2 |
| KSC931 | 2.25 ± 0.65 | 300,000 | 0.4 ± 0.2 |
| KSC941 | 3.4 ± 0.85 | 300,000 | 0.4 ± 0.2 |



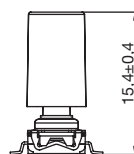
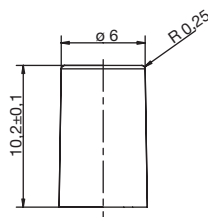
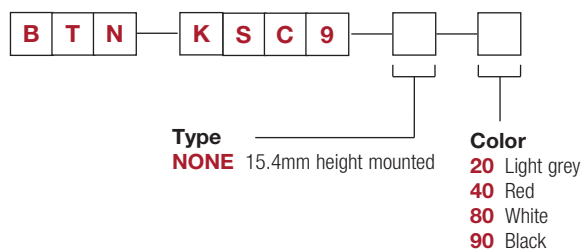
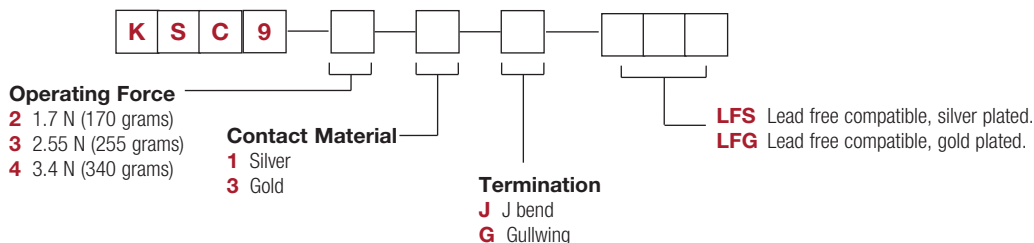
Packaging

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

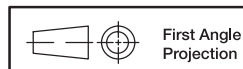
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SWITCH WITH CAP



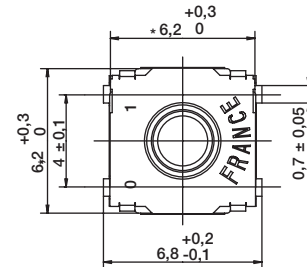
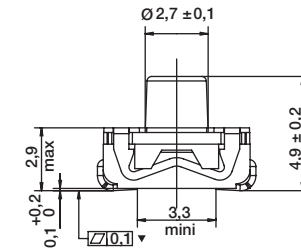
First Angle Projection

KSC10 Series Sealed Tact Switches for SMT

KSC10 soft actuator 4,9 mm high



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



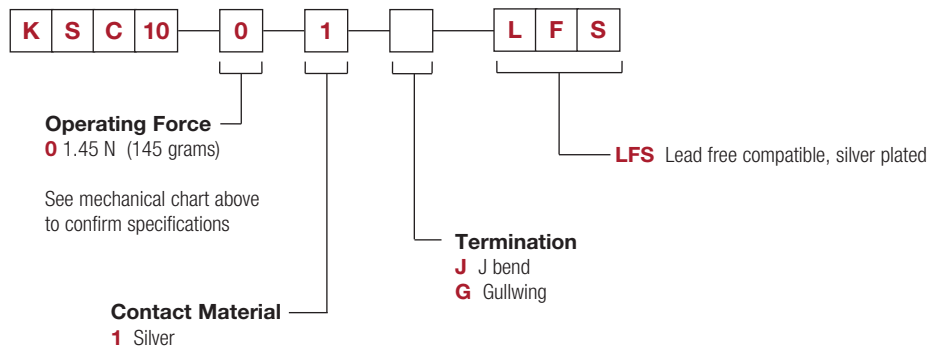
Packaging

Switches delivered on continuous tape & reels of 1,000 pieces
Dimensions according to EIA RS-481/ IEC 60286-3 standard
External diameter 330 ± 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.**



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



First Angle
Projection

Dimensions are shown: mm
Specifications and dimensions subject to change

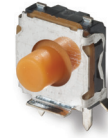
KSC V2 Series Side Actuated Sealed Tact Switch

Features/Benefits

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

Typical Applications

- Automotive
- Industrial electronics
- Network equipment
- Telecommunications



Specification

FUNCTION: momentary action
 CONTACT ARRANGEMENT: 1 make contact = SPST, N.O.
 TERMINALS:
 2 pin in paste signal terminals
 3 SMD ground terminals

Mechanical

| Type | Force (N) | Operating Life (operations) | Travel (mm) |
|----------------------------|-------------|-----------------------------|-------------|
| KSC201 V2 LFS | 1.6 ± 0.6 | 1,000,000 | 0.5 ± 0.2 |
| KSC421 V2 70SH LFS | 1.55 ± 0.45 | 300,000 | 0.45 ± 0.25 |
| KSC441V2 70SH SP DELTA LFS | 3.5 ± 1.0 | 300,000 | 0.7 ± 0.2 |
| KSC443V2 70SH SP DELTA LFG | 3.5 ± 1.0 | 300,000 | 0.7 ± 0.2 |
| KSC421 V2 RT LFS | 1.8 ± 0.5 | 300,000 | 0.5 ± 0.2 |
| KSC423 V2 RT LFG | 1.8 ± 0.5 | 300,000 | 0.5 ± 0.2 |
| KSC441 V2 RT LFS | 3.4 ± 1.0 | 300,000 | 0.35 ± 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: ≤ 100 mΩ
 INSULATION RESISTANCE (100 V, initial stage): > 10⁹ Ω
 BOUNCE TIME: < 1 ms

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:

- Cleaning according to typical washing processes.
- Lead free reflow soldering process 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

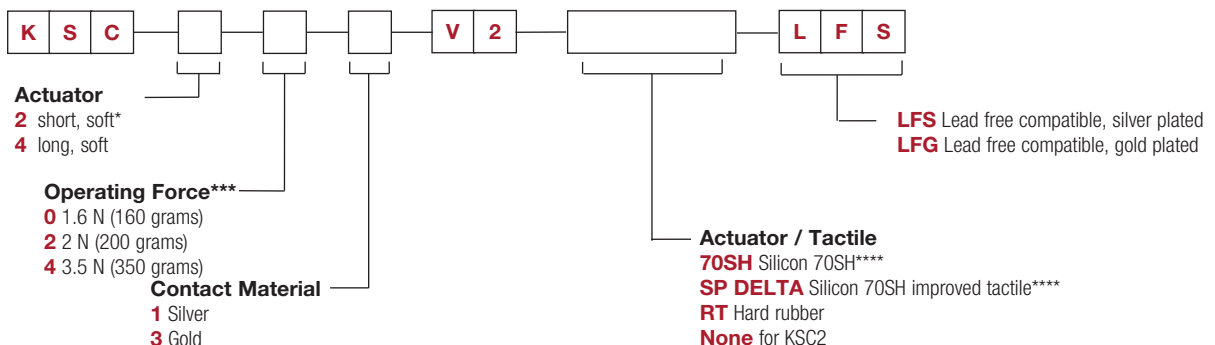
In reels of 800 pieces.
 Dimensions of reels according to EIA RS481 or IEC 2863.
 External diameter 380 mm ± 2 mm.

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

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.

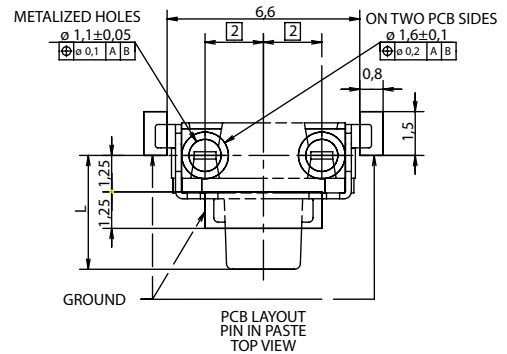
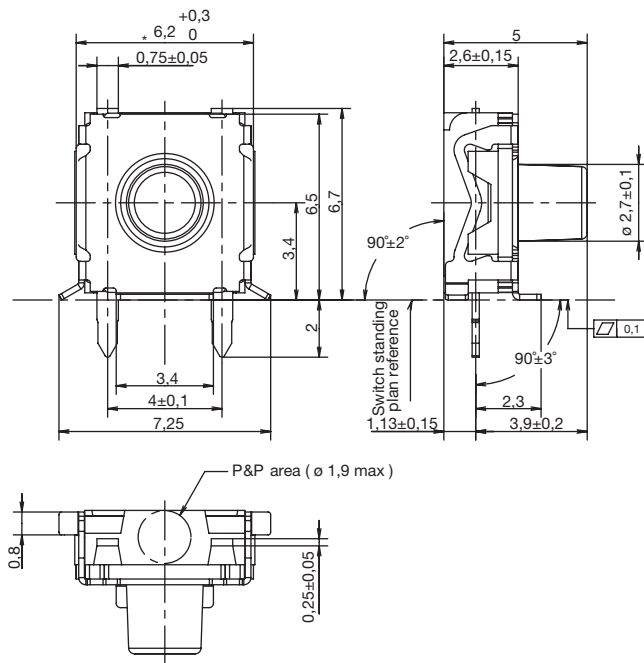
For any part number different from those listed above, please consult your local representative.



* KSC2 version available upon demand
 *** Force available upon demand (variant version)
 **** Available for KSC4 only

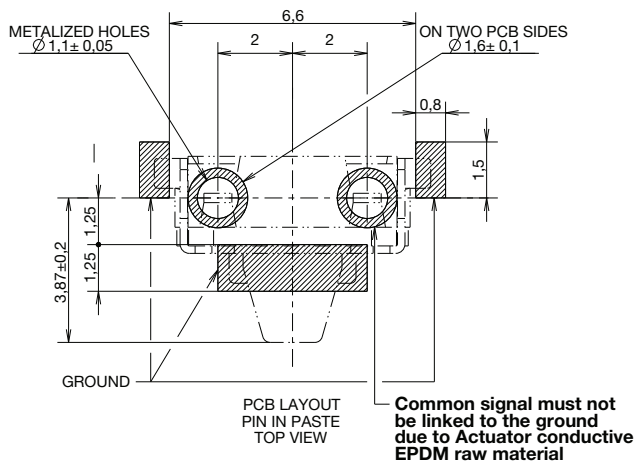
Dimensions are shown: mm
 Specifications and dimensions subject to change

KSC V2 Series Side Actuated Sealed Tact Switch



| Series | L |
|--------|-----|
| KSC2 | 2,3 |
| KSC4 | 3,9 |

IMPORTANT NOTE FOR RT ACTUATOR



This actuator is not compatible with grease even with restricted contact.

In case of the integration of an actuator or button by the customer, please consult us if use of plasticizer agent for button raw material (risk of chemical migration).

Our actuator contains carbon particles and is electrical conductive. In consequence, customer actuator must be electric insulating raw material.

Due to the cover raw material plating, small tin balls can appear after the reflow soldering process. These small tin balls are located near all cutting areas.

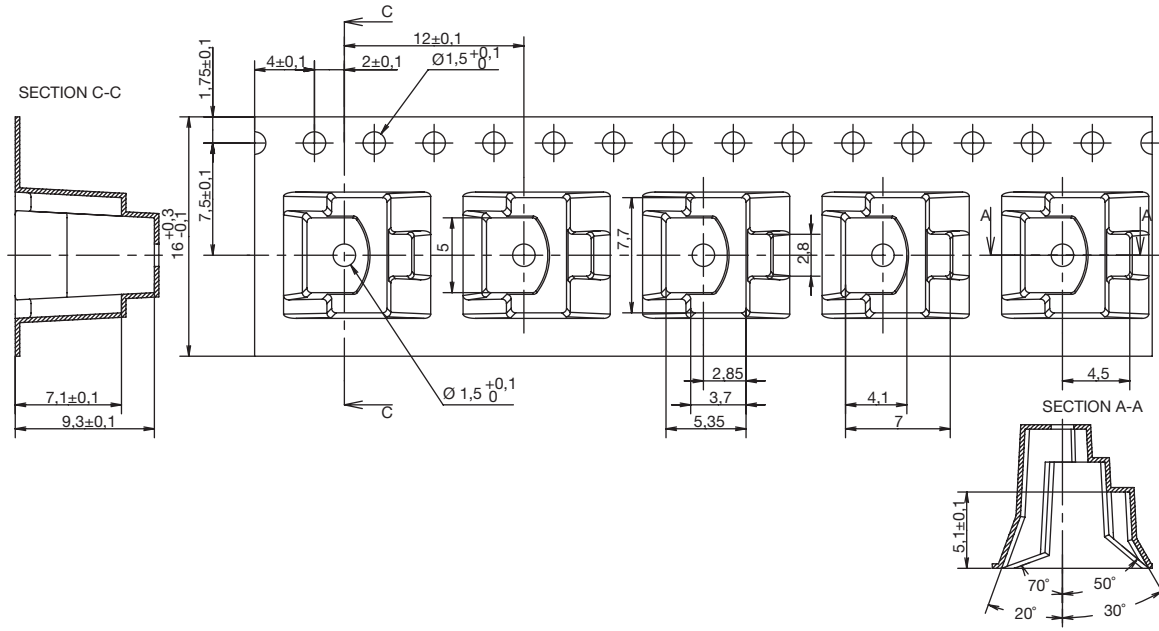


First Angle
Projection

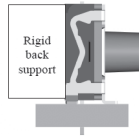
Dimensions are shown: mm

Specifications and dimensions subject to change

TAPE AND REEL



INTEGRATION



Dimensions are shown: mm
Specifications and dimensions subject to change