

# KSA & KSL Series Sealed Tact Switch



## Features/Benefits

- Designed for automatic or manual insertion
- Cambered terminals to ensure self retention
- Top or side actuated
- Large choice of caps
- RoHS compliant and compatible

## Typical Applications

- Automotive
- Industrial
- Telecommunication networks

## Specification

CONTACT ARRANGEMENT: SPST, N.O.  
DOUBLE OVERMOLDING ON TERMINAL  
SEALING: IP60  
TERMINALS: PC pins, ground pin optional

## Mechanical

| Type     | Actuation force<br>N | Operating life<br>(operations) | Travel to<br>make |
|----------|----------------------|--------------------------------|-------------------|
| KSA0M211 | 1,4 ± 0,4            | 100,000                        | 0,5 ± 0,2         |
| KSA0M311 | 1,4 ± 0,4            | 1,000,000                      | 0,5 ± 0,2         |
| KSA0M411 | 3 ± 0,75             | 100,000                        | 0,6 ± 0,2         |
| KSA0M511 | 5 ± 1,5              | 100,000                        | 0,7 ± 0,2         |
| KSA0M911 | 3 ± 0,75             | 500,000                        | 0,6 ± 0,2         |
| KSL0M211 | 1,4 ± 0,4            | 100,000                        | 0,5 ± 0,2         |
| KSL0M311 | 1,4 ± 0,4            | 1,000,000                      | 0,5 ± 0,2         |
| KSL0M411 | 3 ± 0,75             | 100,000                        | 0,6 ± 0,2         |
| KSL0M511 | 5 ± 1,5              | 100,000                        | 0,7 ± 0,2         |
| KSL0M911 | 3 ± 0,75             | 500,000                        | 0,6 ± 0,2         |

**NOTE:** Other versions in terms of force, termination length and corrosion protection available. Please contact your sales representative.  
This data sheet does not provide enough information for applications which require a certain level of quality or safety such as automotive, medical systems, safety equipment. Please contact your sales representative to get contractual specification package.

## 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                | 1 mA   |
| DIELECTRIC STRENGTH:           | 250 Vrms            |        |
| CONTACT RESISTANCE:            | ≤ 100m Ω            |        |
| INSULATION RESISTANCE (100 V): | ≥ 10 <sup>9</sup> Ω |        |
| BOUNCE TIME:                   | ≤ 1 ms              |        |

## Environmental

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

## Process

Wave soldering compatible with lead free soldering profile.

## Packaging

Can be delivered in tubes of 65 pieces for automatic insertion or in boxes of 500 pieces for manual insertion (250 pieces for KSL, KSLV, KSAV).

## 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.

**SWITCH**

|          |          |  |  |  |  |          |          |          |          |          |
|----------|----------|--|--|--|--|----------|----------|----------|----------|----------|
| <b>K</b> | <b>S</b> |  |  |  |  | <b>1</b> | <b>L</b> | <b>F</b> | <b>T</b> | <b>R</b> |
|----------|----------|--|--|--|--|----------|----------|----------|----------|----------|

**Actuator Type**  
**A** Short hard plastic  
**L** Long hard plastic

**Ground Terminal**  
**0** Without  
**1** With\*

**Insertion**  
**M** Manual (bulk packaging)  
**A** Automatic (tube packaging)  
**V** Vertical (bulk packaging)\*

**Contact Material**  
**1** Silver contacts  
**3** Gold contacts

**Operation Force**  
**2** 1.3 N (130 grams), 100,000 operations  
**3** 1.3 N (130 grams), 1,000,000 operations  
**4** 3 N (300 grams), 100,000 operations

**5** 5 N (500 grams), 100,000 operations  
**9** 3 N (300 grams), 500,000 operations

\*Note: "1" Ground terminal not compatible with "V" insertion

RoHS compliant and compatible.  
Tin plated.

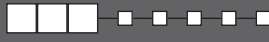
**BUTTONS** Buttons must be ordered separately and will be supplied in bulk.

|          |          |          |          |          |  |  |
|----------|----------|----------|----------|----------|--|--|
| <b>B</b> | <b>T</b> | <b>N</b> | <b>K</b> | <b>0</b> |  |  |
|----------|----------|----------|----------|----------|--|--|

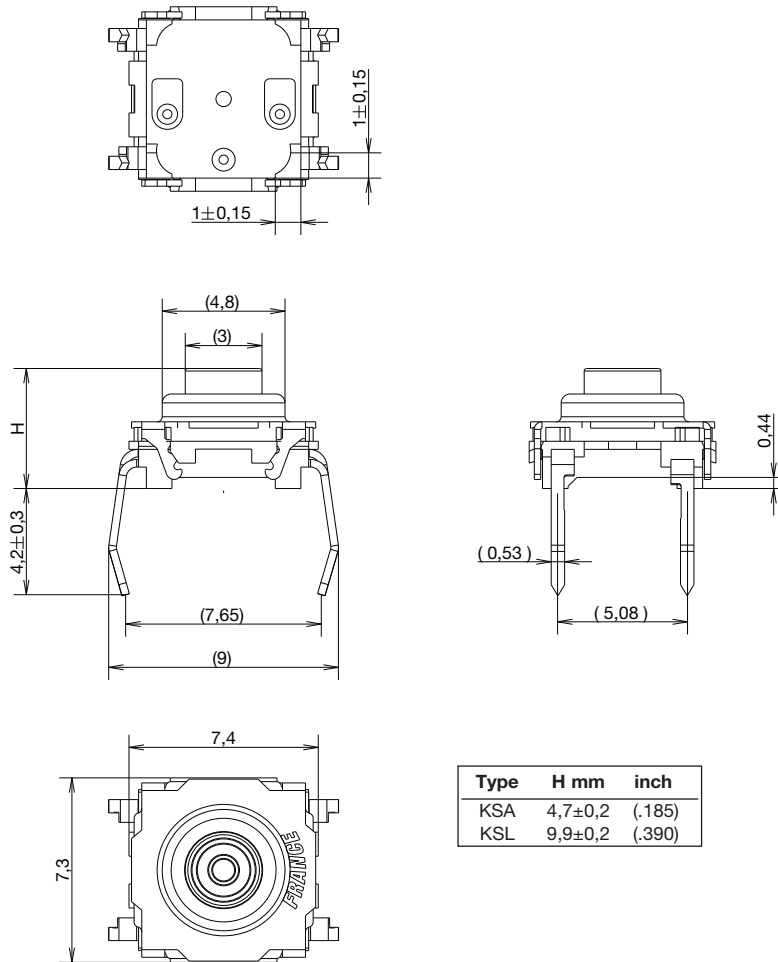
**Button Style**  
**K01** 10 mm square snap-on  
**K02** ø8 mm round snap-on  
**K03** 8,5 x 3,8 mm single floating

**Button Color**  
**10** Dark gray  
**20** Light gray  
**30** Yellow  
**40** Red  
**50** Green  
**60** Blue  
**70** Gray-blue  
**80** Ivory  
**90** Black

# KSA & KSL Series Sealed Tact Switch

ACTUATOR TYPE 

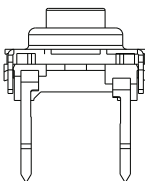
## KSA & KSL



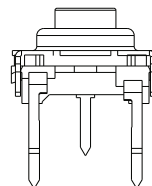
Tactile Switches

GROUND TERMINAL 

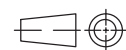
0 WITHOUT



1\* WITH



\*Not compatible with "V" insertion

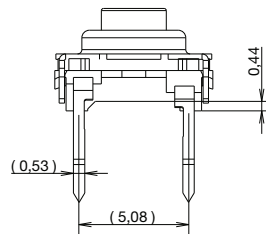
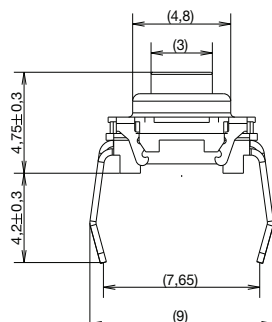


First Angle  
Projection

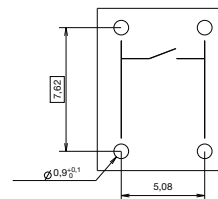
# KSA & KSL Series Sealed Tact Switch

## INSERTION

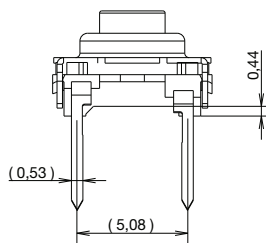
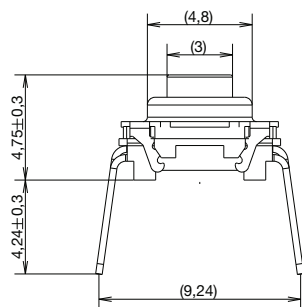
### M MANUAL (BULK PACKAGING)



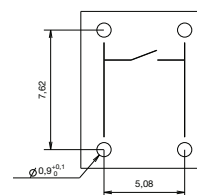
### PCB LAYOUT



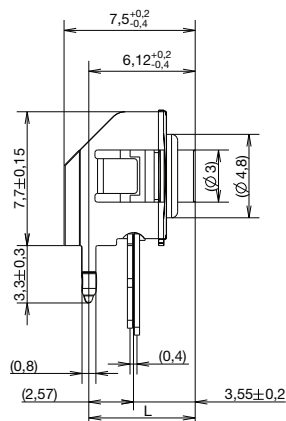
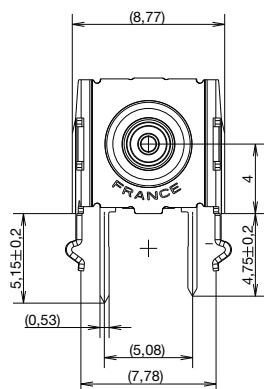
### A AUTOMATIC (TUBE PACKAGING, 65 PIECES PER TUBE)



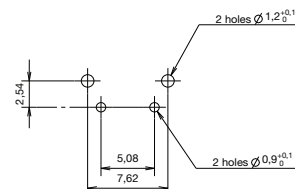
### PCB LAYOUT



### V VERTICAL



### PCB LAYOUT



### DIMENSION L

| Type  | L mm | inch |
|-------|------|------|
| KSA0V | 5,8  | .228 |
| KSL0V | 11,1 | .437 |

## OPERATING FORCE

| OPTION CODE | OPERATING FORCE                           |
|-------------|-------------------------------------------|
| 2           | 1.3 N (130 grams)<br>100,000 operations   |
| 3           | 1.3 N (130 grams)<br>1,000,000 operations |
| 4           | 3.0 N (300 grams)<br>100,000 operations   |
| 5           | 5.0 N (500 grams)<br>100,000 operations   |
| 9           | 3.0 N (300 grams)<br>500,000 operations   |



First Angle  
Projection

Dimensions are shown: mm  
Specifications and dimensions subject to change

## CONTACT MATERIAL



| OPTION CODE | CONTACT MATERIAL |
|-------------|------------------|
| <b>1</b>    | Silver contacts  |
| <b>3</b>    | Gold contacts    |

## SEALING



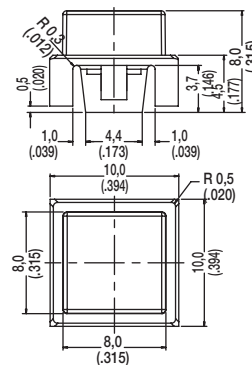
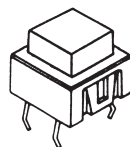
| OPTION CODE | SEALING            |
|-------------|--------------------|
| <b>1</b>    | Sealing level IP60 |

## BUTTONS

Buttons must be ordered separately and will be supplied in bulk.

| BUTTON TYPE | KSA | KSL | KSAV | KSLV |
|-------------|-----|-----|------|------|
| <b>K01</b>  | X   |     |      |      |
| <b>K02</b>  | X   |     |      |      |
| <b>K03</b>  | X   | X   | X    | X    |

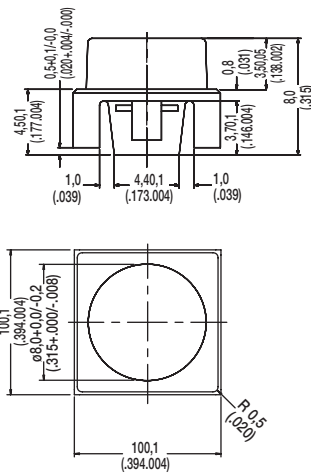
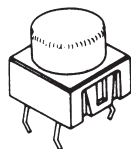
**K01**



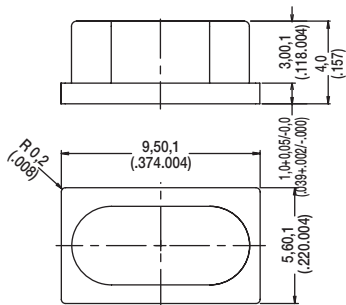
First Angle  
Projection

# KSA & KSL Series Sealed Tact Switch

K02



K03



## Данный компонент на территории Российской Федерации

**Вы можете приобрести в компании MosChip.**

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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