

# KSR Series

Sub-Miniature Tactile Switch for SMT 6.0 x 3.8 mm,  
with 2.5 mm Height Soft Actuator



## Description

The KSR series subminiature tact switch for SMT has 4 actuation forces and is an N.O. (normally open) and N.C. (normally closed) switch. With detect type available, The KSR series is ideal for industrial, medical and automotive applications that need emergency stop functionality should accidents occur.

## Features & Benefits

- 4 actuation forces
- G terminations
- N.O. and N.C.
- Detect type available
- Rubber actuator
- RoHS compliant and compatible

## Applications

- Transportation
- Medical equipment
- Industrial electronics
- Smart meters

### Specifications

<b>Function</b>	Momentary action
<b>Contact Arrangement</b>	Normally Open ( standard versions) Normally Closed (NC versions)
<b>Terminals</b>	Gullwing type for SMT
<b>Overload</b>	20 Newtons
<b>Sealing</b>	IP40

### Electrical Characteristics

	Silver	Gold
<b>Maximum Power</b>	1 VA	0.2 VA
<b>Min. / Max. Voltage</b>	20 mV - 32VDC	
<b>Min. / Max. Current</b>	1 - 50 mA	1 - 10 mA
<b>Contact Resistance</b>	≤ 100 mΩ	
<b>Insulation Resistance</b>	(100 V): 1G Ω (between terminals)	
<b>Bounce Time</b>	1 ms max.	

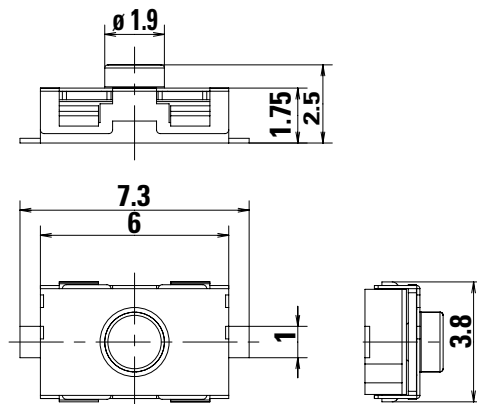
### Environmental Characteristics

	Silver	Gold
<b>Operating Temperature</b>	-40°C to 85°C	-40°C to 125°C
<b>Storage Temperature</b>	-55°C to 85°C	-55°C to 125°C

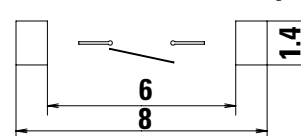
### Process

<b>Soldering</b>	Lead free reflow soldering process in accordance with IEC 61760-1
<b>Packaging</b>	Switches are delivered on continuous tape, in reels of 2,500 pieces

### Dimensions (mm)



### Recommended PCB layout



# KSR Series

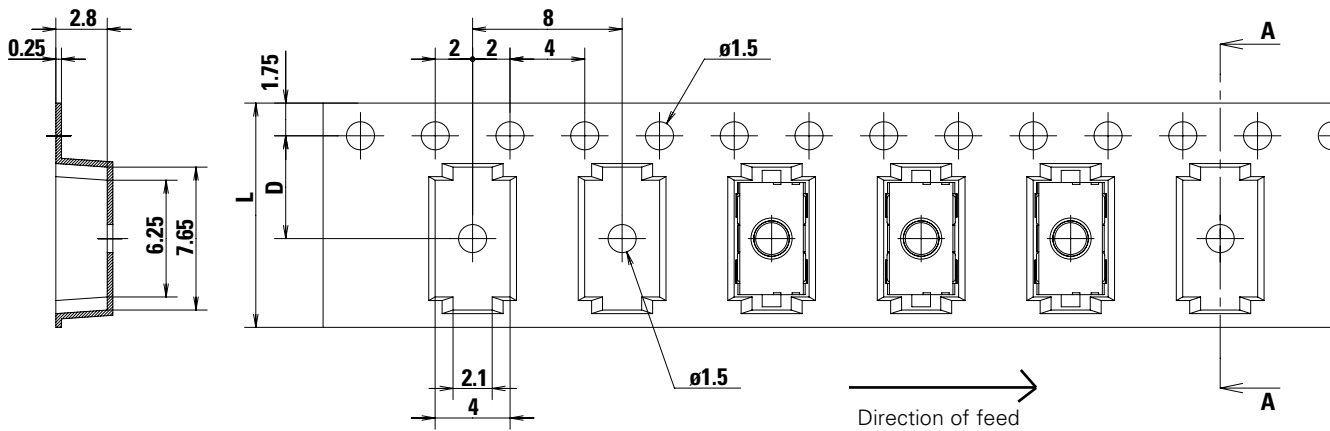
Sub-Miniature Tactile Switch for SMT 6.0 x 3.8 mm,  
with 2.5 mm Height Soft Actuator



### Packaging Details

Type	Tape & reel
Number of Parts in Packaging	2,500
Other Information	Tape and reel per EIA 481, External diameter 330 ± 2 mm
Transport Conditions	According to specification NF H00-060

### Tape & Reel



Tape Version	Tape Width L (mm)	D (mm)
Standard	12	5,5
T16	16	7,5

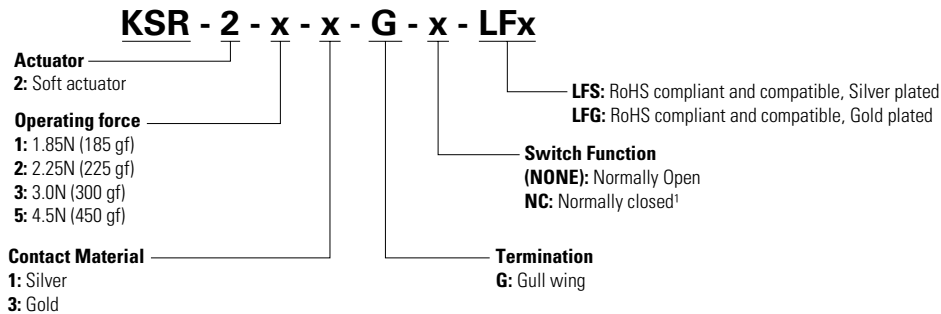
# KSR Series

## Sub-Miniature Tactile Switch for SMT 6.0 x 3.8 mm, with 2.5 mm Height Soft Actuator



### Ordering Number

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.



**Note:**

1. Available on KSR22xG only

### Mechanical Characteristics

Supply Status	Littelfuse Orderable Part Number	Description	Contact & Terminals Plating	Contact Arrangement	Operating Force Fa (Newtons)	Tactile ratio (min)	Operating Life (operations)	Electrical Travel ON (mm)	Tape Width (mm)
✓	Y35A21110FPLFS	KSR211G LFS	Silver	Normally Open	1.85±0.35	Min 15%	100,000	0.25±0.15	12
✓	Y35A21310FPLFG	KSR213G LFG	Gold	Normally Open	1.85±0.35	Min 15%	100,000	0.25±0.15	12
✓	Y35A22110FPLFS	KSR221G LFS	Silver	Normally Open	2.25±0.35	Min 25%	100,000	0.3±0.15	12
✓	Y35A22310FPLFG	KSR223G LFG	Gold	Normally Open	2.25±0.35	Min 25%	100,000	0.3±0.15	12
✓	Y35A22313FPLFG	KSR223G T16 LFG	Gold	Normally Open	2.25±0.35	Min 25%	100,000	0.3±0.15	16
✓	Y35A23110FPLFS	KSR231G LFS	Silver	Normally Open	3±0.75	Min 25%	100,000	0.35±0.15	12
✓	Y35A23113FPLFS	KSR231G T16 LFS	Silver	Normally Open	3±0.75	Min 25%	100,000	0.35±0.15	16
✓	Y35A23310FPLFG	KSR233G LFG	Gold	Normally Open	3±0.75	Min 25%	100,000	0.35±0.15	12
✓	Y35A25110FPLFS	KSR251G LFS	Silver	Normally Open	4.5±1.1	Min 25%	100,000	0.5±0.15	12
✓	Y35A25113FPLFS	KSR251G T16 LFS	Silver	Normally Open	4.5±1.1	Min 25%	100,000	0.5±0.15	16
✓	Y35A25310FPLFG	KSR253G LFG	Gold	Normally Open	4.5±1.1	Min 25%	100,000	0.5±0.15	12
✓	Y35A25310FPLFG	KSR253G LFG	Gold	Normally Open	4.5±1.1	Min 25%	100,000	0.5±0.15	12

### Normally Closed versions

Supply Status	Littelfuse Orderable Part Number	Description	Contact & Terminals Plating	Contact Arrangement	Operating Force Fa (Newtons)	Tactile ratio (min)	Operating Life (operations)	Electrical Travel ON (mm)	Tape Width (mm)
✓	Y35A22111FPLFS	KSR221G NC LFS	Silver	Normally Closed	2.25±0.75	Min 15%	30,000	0.3±0.15	12
✓	Y35A22311FPLFG	KSR223G NC LFG	Gold	Normally Closed	2±0.5	Min 15%	50,000	0.3±0.15	12

**Notes:** Supply status: ✓ : Available for ordering.

ORD : Available On Request Only. Please contact your Littelfuse representative for details.

For long life version, please consult the specific KSR long life datasheet.

Detect switch versions are available. Please see Detect chapter KSR2D/M series.

### 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.

**Disclaimer Notice** - Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at <http://www.littelfuse.com/disclaimer-electronics>.

# KSR Long Life

200,000 cycles - Gold and Silver Series Subminiature  
Tactile Switch for SMT



## Description

The KSR series subminiature tact switch for SMT has 4 actuation forces and is an N.O. (normally open) and N.C. (normally closed) switch. With detect type available, KSR is ideal for industrial, medical and automotive applications that need emergency stop functionality should accidents occur.

## Features & Benefits

- 4 actuation forces
- G terminations
- N.O.
- Detect type available
- Rubber actuator
- IP40 sealed
- RoHS compliant and compatible

## Applications

- Automotive
- Medical equipment
- Industrial electronics

## Specifications

<b>Function</b>	Momentary action
<b>Contact Arrangement</b>	Normally Open
<b>Terminals</b>	Gullwing type for SMT
<b>Overload</b>	20 Newtons
<b>Sealing</b>	IP40

## Process

### Soldering

Compatible lead free reflow soldering process

## Electrical Characteristics

	Silver	Gold
<b>Maximum Power</b>	1 VA	0.2 VA
<b>Min. / Max. Voltage</b>	20 m VDC - 32VDC	
<b>Min. / Max. Current</b>	1 - 50 mA	1 - 10 mA
<b>Contact Resistance</b>	≤ 100 mΩ	
<b>Insulation Resistance</b>	(100 V): 1G Ω (between terminals)	
<b>Bounce Time</b>	1 ms max.	

## Environmental Characteristics

	Silver	Gold
<b>Operating Temperature</b>	-40°C to 85°C	-40°C to 125°C
<b>Storage Temperature</b>	-55°C to 85°C	-55°C to 125°C

**Note:** Specifications listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.

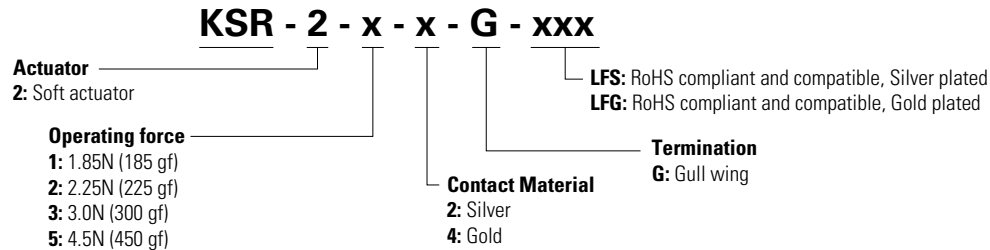


**KSR Long Life**

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**Mechanical Characteristics**

Supply Status	Littelfuse Orderable Part Number	Description	Contact & Terminals Plating	Contact Arrangement	Operating Force Fa (Newtons)	Tactile ratio (min)	Operating Life (operations)	Electrical Travel ON (mm)	Tape Width (mm)
✓	Y35A21210FPLFS	KSR212G LFS	Silver	Normally Open	1.85±0.35	Min 15%	200,000	0.25±0.15	12
✓	Y35A21410FPLFG	KSR214G LFG	Gold	Normally Open	1.85±0.35	Min 15%	200,000	0.25±0.15	12
✓	Y35A22210FPLFS	KSR222G LFS	Silver	Normally Open	2.25±0.35	Min 25%	200,000	0.3±0.15	12
✓	Y35A22410FPLFG	KSR224G LFG	Gold	Normally Open	2.25±0.35	Min 25%	200,000	0.3±0.15	12
✓	Y35A23210FPLFS	KSR232G LFS	Silver	Normally Open	3±0.75	Min 25%	200,000	0.35±0.15	12
✓	Y35A23410FPLFG	KSR234G LFG	Gold	Normally Open	3±0.75	Min 25%	200,000	0.35±0.15	12
✓	Y35A25210FPLFS	KSR252G LFS	Silver	Normally Open	4.5±1.1	Min 25%	200,000	0.5±0.15	12
✓	Y35A25410FPLFG	KSR254G LFG	Gold	Normally Open	4.5±1.1	Min 25%	200,000	0.5±0.15	12

**Notes:** Supply status: ✓ : Available for ordering.

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