

SUB MINIATURE SWITCHES SURFACE MOUNT

1N OPERATING FORCE SILVER CONTACTS  228-4547

2N OPERATING FORCE SILVER CONTACTS  228-4569

1N OPERATING FORCE GOLD CONTACTS  228-4553

2N OPERATING FORCE GOLD CONTACTS  228-4575

Preliminary data

Construction

Function	momentary contacts
Contact arrangement	normally open
Terminals	gullwing type for SMT

Electrical data

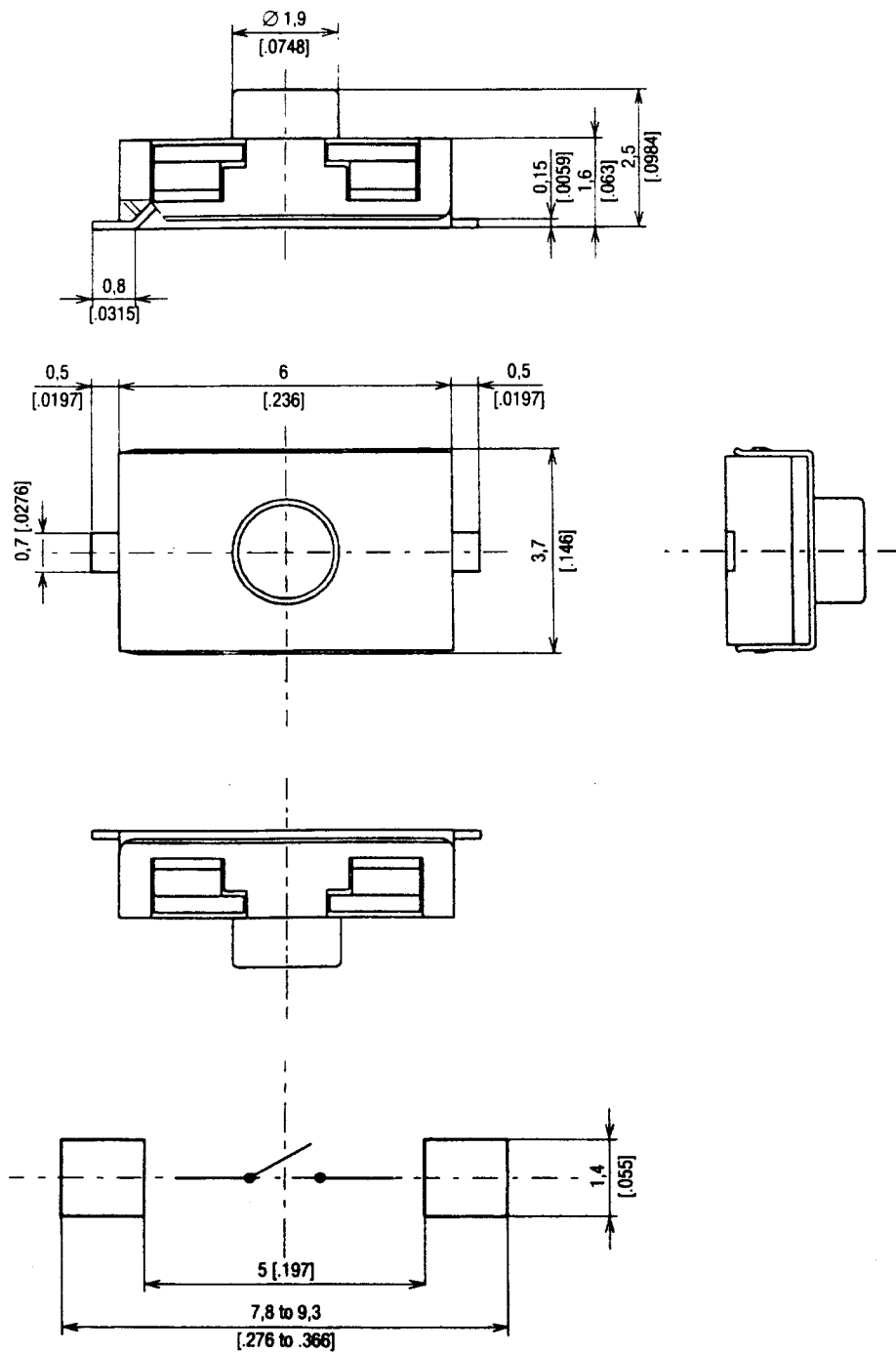
	S = Silver	G = Gold
Switching power max.	1 VA	0.2 VA
Switching voltage min./max.	20 mV/50 V	20 mV/50 V
Switching current min./max.	1 mA/50 mA	1 mA/10 mA
Contact resistance max.	100 m Ω	100 m Ω
Insulation resistance (100 V)	10 ⁹ Ω	10 ⁹ Ω
Maximum bounce	1 ms	1 ms

Further data

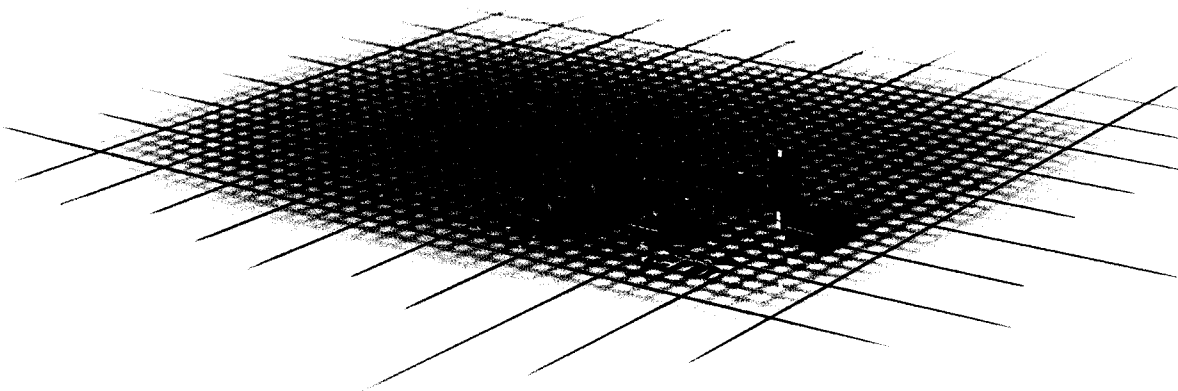
Contact plating	Silver	Gold
Operating temperature	- 40°C to + 85°C	- 40°C to + 125°C
Storage temperature	- 55°C to + 85°C	- 55°C to + 125°C
Soldering process	Infrared reflow soldering	
	temperature 200°C with peak of 230°C during 10 to 15 s	
	Wave soldering	
	the KSR terminals being SnPb plated over a Ni barrier, the use of sightly activated flux is suitable	
	Double-wave machine	
	the bath temperature is generally 255°C \pm 5°C and soldering time < 5 s	
	Vapor phase reflow soldering	
	temperature 215°C, soldering time < 60 s	

SUB MINIATURE SWITCHES SURFACE MOUNT (CONT)

Dimensional Drawings · Dimensions in mm [inch]



KSR Miniature Tact Switch for SMT



The KSR is a miniature tact switch, single pole, normally open contact, designed to be surface mounted on a PCB.

The extremely small overall dimensions make the KSR fit perfectly in applications where density of components is a major constraint.

The availability of high actuation force versions (up to 4.5N, 450 grams) allows its design in switch functions where an important tactile feedback is required.

Main applications

- Switch functions in small portable electronic devices (cellular phones, recorders, computers, pointers, radios, medical instrumentation, ...)
- Switch functions for car entry remote controls

Main features

- Miniature overall dimensions 6 mm × 3.7 mm (.236 inch x .146 inch) with a height of 2.5 mm (.098 inch)
- Various options of actuation forces: see table on the right
- Tin-plated terminals
- Suitable for all major SMT soldering processes
- Cylindrical shaped actuator for easy pick-and-place operation either on the flat top of the actuator or on the metal top plate

Preliminary data

Construction		
Function	Momentary contacts	
Contact arrangement	Normally open	
Terminals	J type for SMT	
Electrical data		
	Silver	Gold
Switching power max.	1 VA	0.2 VA
Switching voltage min./max.	20 mV/50 V	20 mV/50 V
Switching current min./max.	1 mA/50 mA	1 mA/10 mA
Contact resistance max.	100 mΩ	100 mΩ
Insulation resistance (100 V)	10 ⁹ Ω	10 ⁹ Ω
Maximum bounce	1 ms	1 ms
Further data		
Contact plating	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
Soldering process	Infrared reflow soldering temperature 200°C with peak of 230°C during 10 to 15 s	

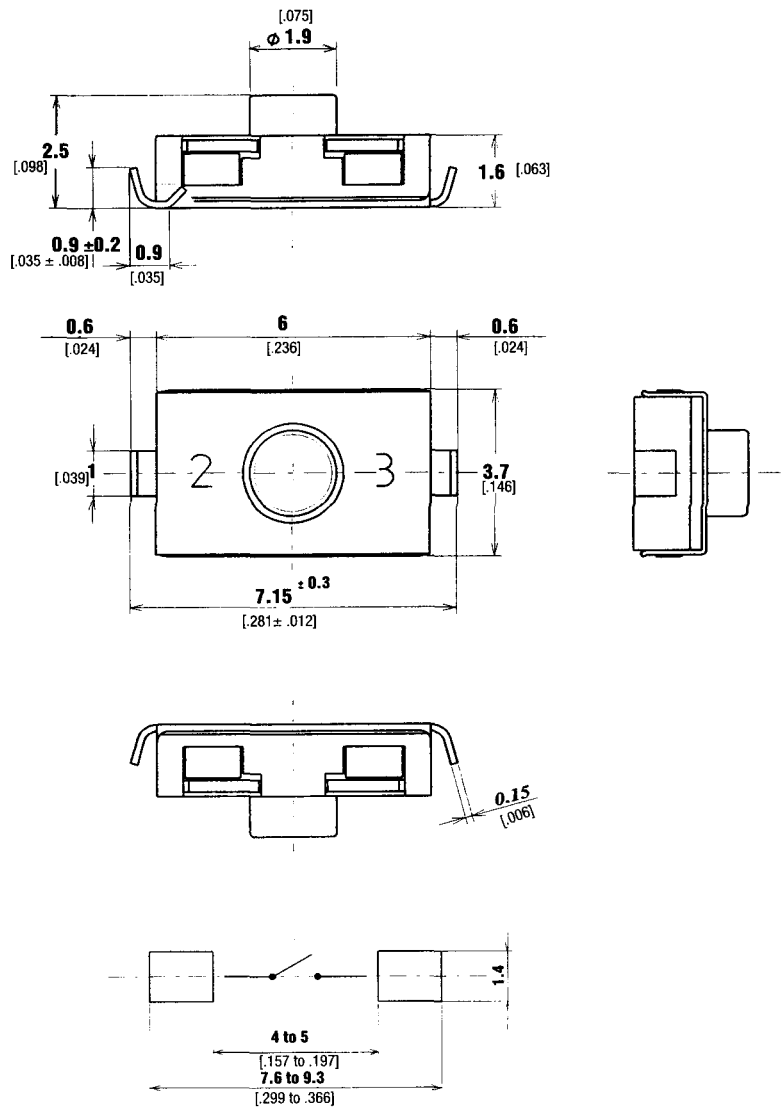
Packaging

The KSR is delivered on continuous tape, in reels of 2500 pieces (dimensions: see drawing next page).

Type	Operating force Newtons (Grams)	Operating life (k operations)	Travel (mm)
KSR211J	1.2 (120) ± 30%	100	0.3± 0.15
KSR221J	2 (200) ± 25 %	200	0.5± 0.15
KSR251J	4.5 (450) ± 25 %	100	0.6± 0.15

Ordering code		1	2	3	4	5	6	7
Example:		KS	R	2	2	1	J	
1	Designation: KS	→	↑	↑	↑	↑	↑	↑
2	Type: R	→	↑	↑	↑	↑	↑	↑
3	Actuator: 2 = soft actuator	→	↑	↑	↑	↑	↑	↑
4	Actuation force/operating life: 1 = 1.2N (120 Grams) and 100 k operations, 2 = 2N (200 Grams) and 200 k operations, 5 = 4.5N (450 Grams) and 100 k operations	→	↑	↑	↑	↑	↑	↑
5	Contact material: 1 = Silver 3 = Gold	→	↑	↑	↑	↑	↑	↑
6	Terminals: J = J type	→	↑	↑	↑	↑	↑	↑
7		→	↑	↑	↑	↑	↑	↑

Dimensional Drawings · Dimensions in mm [inch]



Packaging · Dimensions in mm [inch]

