Subminiature Power Relay	SK

Features

- 6A switching capability
- 4kV dielectric strength (between coil and contacts)
- Slim size (width: 5mm)
- High sensitive: Approx. 170mW
- Meets VDE 0700, 0631 reinforce insulation
- Surge voltage up to 6kV (between coil and contacts)
- 1 Form A and 1 Form C configurations
- Socket available

c UL us
(File No.:E122258)

1. COIL DATA (at 23°C)

Nominal Voltage (VDC)	Pick-up Voltage (VDC) Max.[1)]	Drop-out Voltage (VDC) Min.[1)]	Max. Allowable Voltage (VDC)[3)]	Coil Current (mA)(±10%)	Coil Resistance (Ω)	Coil Power (mW)
5	3.75	0.25	7.5	34.0	147 x (1±10%)	Approx. 170
6	4.50	0.30	9.0	28.3	212 x (1±10%)	
9	6.75	0.45	13.5	18.9	476 x (1±10%)	
12	9.00	0.60	18	14.2	848 x (1±10%)	
18	13.5	0.90	27	9.4	1906 x (1±15%)	
24	18.0	1.20	36	7.1	3390 x (1±15%)	
48[4)]	36.0	2.40	72	4.4	10600 x (1±15%)	Approx. 210
60[4)]	45.0	3.00	90	3.5	16600 x (1±15%)	

Note:

1) The data shown above are initial values.

2) When require pick-up voltage ≤70% nominal voltage, special order allowed

3) The maximum allowable voltage refers to the maximum voltage which relay coil could endure in a short period of time.

4) For products with rated voltage ≥48, measures should be taken to prevent coil overvoltage in order to protect coil in test and application (eg. Connect diodes in parallel).

2. CONTACT DATA

Contact Arrangement		1 Form A, 1 Form C
Contact Resistance (at 1A 6VDC)[1)]		No gold plated: 100mΩ max. Gold plated: 30mΩ max.
Contact Material		$AgSnO_2$
Contact Ratings (Resistive load)		6A 250VAC / 30VDC
Max. Switching Voltage		400VAC / 300VDC
Max. Switching Current		6A
Max. Switching Power		1500VA / 180W
Min. Contact Load[2)]		Gold plated: 5VDC 10mA No gold plated: 5VDC 100mA
Life Expectancy	Electrical	1 Form A: 60,000 operations (6A 250VAC / 30VDC) 1 Form C: 30,000 operations (NO: 6A 250VAC / 30VDC) 10,000 operations (NC: 6A 250VAC / 30VDC)
	Mechanical	10,000,000 operations

Note: 1) The data shown above are initial values.

2) Min. contact load is just a reference value in normal temperature, normal humidity and normal pressure environment, which will vary depending on the power-on and off frequency, environmental conditions and expected lifespan. Thus, please have confirmation tests with actual load before use. And it is recommended to avoid using the relay when the temperature is below 0℃

3) No loading test, no mechanical damage after the test.

4) Only 1 NO or NC is loaded in the test.

3. CHARACTERISTICS

Insulation Resistance		1000MΩ (at 500VDC)
Dielectric Strength	Open Contacts	1000VAC 1min
	Coil and Contacts	4000VAC 1min
Operate Time (at nominal voltage)		8ms max.
Release Time (at nominal voltage)		4ms max.
Temperature Range		-40℃ ~ 85℃
Shock Resistance[1)]	Functional	$49m/s^2$
	Destructive	$980m/s^2$
Vibration Resistance[1)]		10 ~ 55Hz, 1mm DA
Humidity		5 ~ 85% RH
Termination		PCB
Weight		Approx. 5g
Outline Dimension (L x W x H)		28 x 5 x 15mm

Note: 1) Index is that of relay without socket and is not in relay length direction.

2) The data shown above are initial values.

3) Please find coil temperature curve in the characteristic curves below.

4) Please do not install a SPDT(1 Form C) type relay on either of the smallest sides or facing downward.

5) UL insulation system: Class A

4. SAFETY APPROVAL RATINGS

Safety Standard	Contact Rating
UL/cUL	6A 30VDC at 85℃ 6A 277VAC at 85℃ R300 B300

Notes:

1) All values unspecified are at room temperature

2) Only typical loads are listed above. Other load specifications can be available upon request.

5. ORDERING INFORMATION

SK ①	11 ②	-	12 ③	F ④	G ⑤	S ⑥

① Relay Model	SK
② Contact Arrangement	11: 1 Form A (SPST-NO) 1: 1 Form C (SPDT)
③ Coil Voltage	5=5VDC, 6=6VDC, 9=9VDC, 12=12VDC, 18=18VDC, 24=24VDC, 48=48VDC, 60=60VDC
④ Version[1)]	Nil: Vertical version F: Flat pack version
⑤ Contact Plating	Nil: No gold plated G: Gold plated
⑥ Construction[2)3)]	Nil: Flux proofed S: Plastic sealed

Notes:

1) We recommend flux proofed types for the flat pack version.

2) We recommend flux proofed types for a clean environment (free from contaminations like H_2S, SO_2, NO_2, dust etc.).
We suggest choosing plastic sealed types and validating it in real application for an unclean environment (with contaminations like H_2S, SO_2, NO_2, dust etc.).

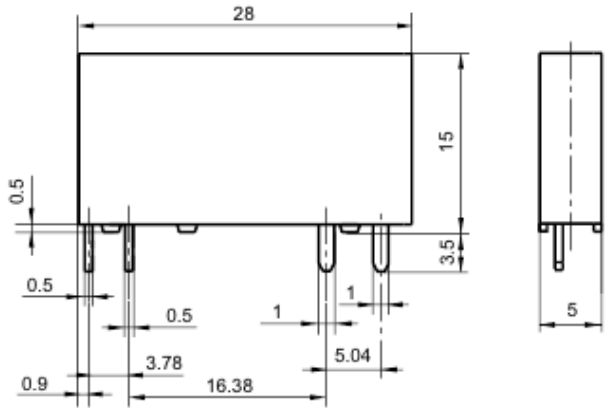
3) Contact is recommended for suitable condition and specifications if water cleaning or surface process is involved in assembling relays on PCB.

6. DIMENSIONS (Unit: mm)

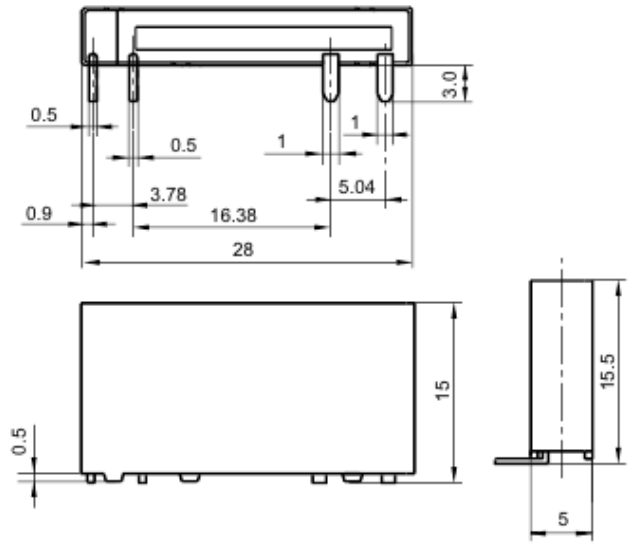
Outline Dimensions

1 Form A

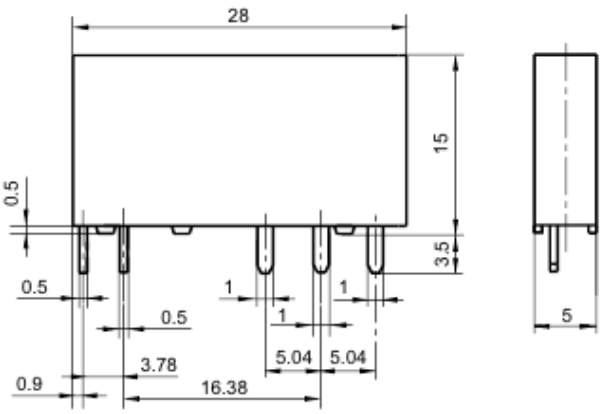
Vertical version

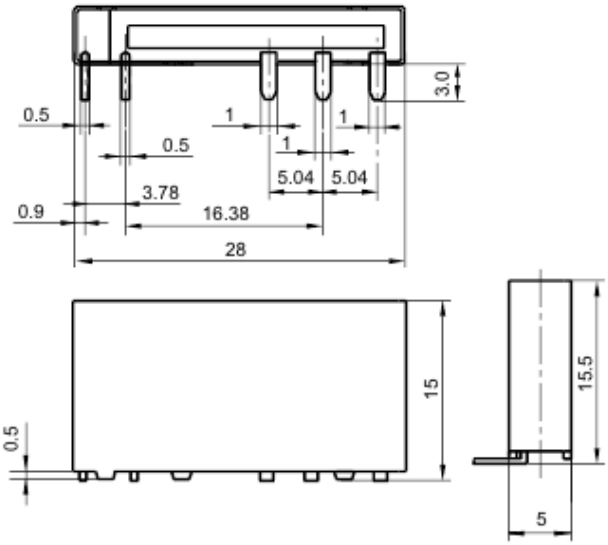


Flat pack version



1 Form C

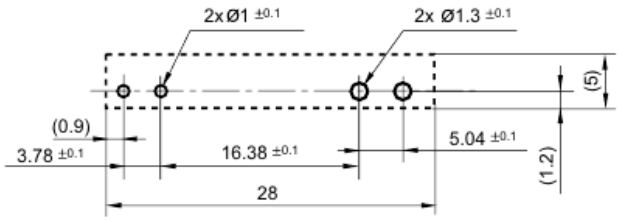




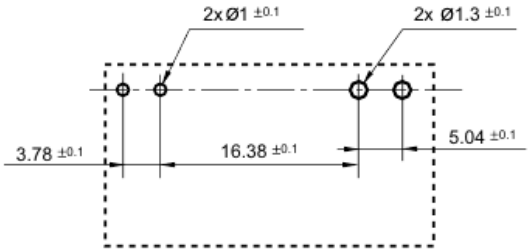
PCB Layout (Bottom view)

1 Form A

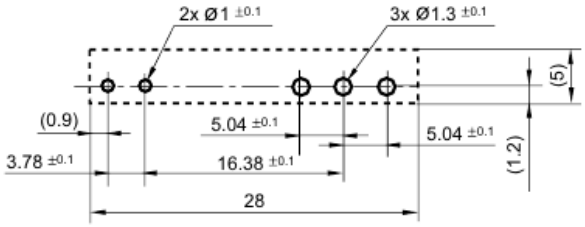
Vertical version

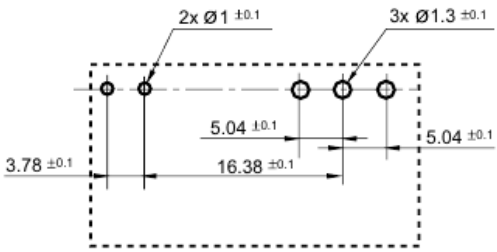


Flat pack version



1 Form C





Wiring Diagram (Bottom View)

1 Form A

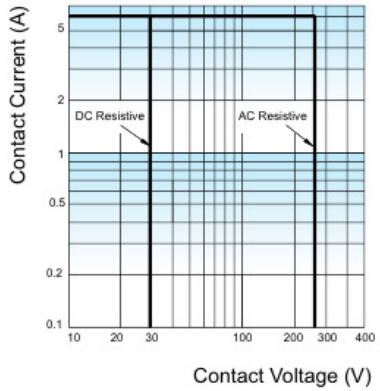
1 Form C

Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.

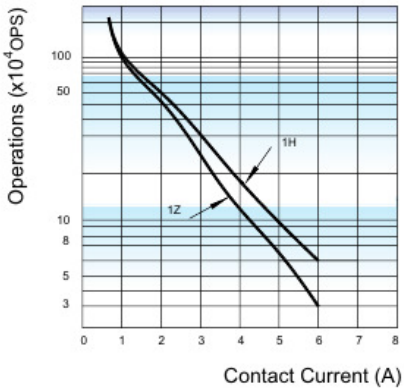
2) The tolerance without indicating for PCB layout is always ±0.1mm.

7. CHARACTERISTIC CURVES

MAXIMUM SWITCHING POWER

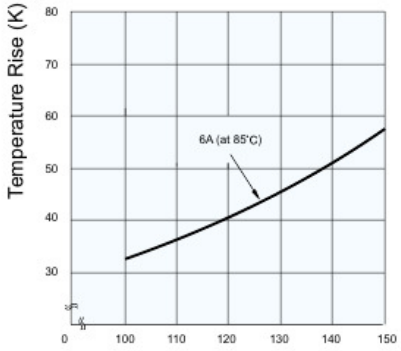


ENDURANCE CURVE



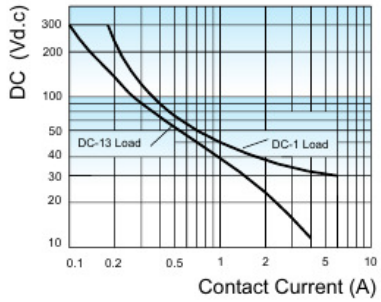
Test conditions:
NO, AgNi, Resistive load, 250VAC,
Flux proofed, Room temp., 1s on 9s off.

COIL TEMPERATURE RISE



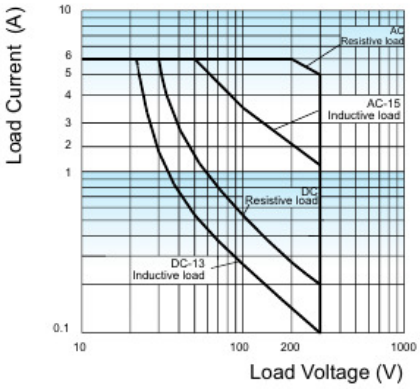
Test conditions:
6A 85℃
(Typical curve of 24VDC standard type)

LOAD SWITCHING CAPACITY CURVE



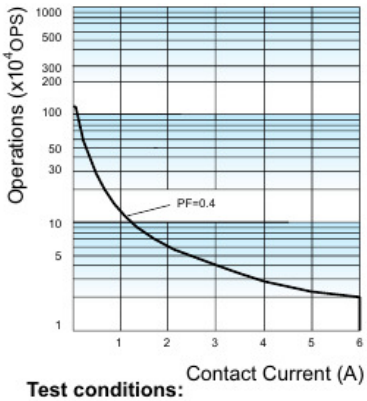
Test conditions: NO, Room temp.

BREAKING CAPACITY TRIP CURVE



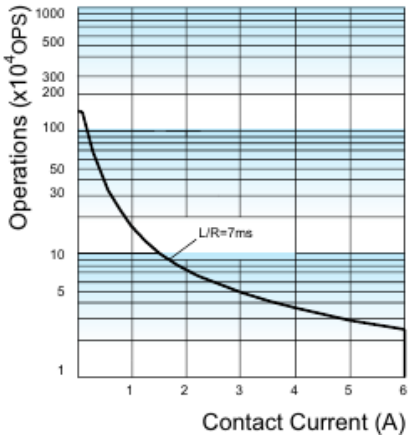
Test conditions:
Room temp., Plastic sealed, 1s on 9s off.

AC INDUCTIVE LOAD ENDURANCE CURVE



Test conditions:
NO，AgNi, Plastic sealed,Room temp.,
250VAC

DC INDUCTIVE LOAD ENDURANCE CURVE



Test conditions:
NO, AgNi,Plastic sealed, Room temp.,
24VDC