Subminiature High Power Relay	NKB

Features

- 15A 125VAC, 10A 250VAC switching capability
- 1 Form A and 1 Form C configurations
- Subminiature
- Standard PCB layout
- Plastic sealed type
- UL insulation system: Class F

c UL us (File No.: E134581)

(File No.: R 50644290 001)

CQC (File No.: CQC24002446051)

1. COIL DATA (at 23°C)

Nominal Voltage (VDC)	Pick-up Voltage (VDC)	Drop-out Voltage (VDC)	Max Allowable Voltage (VDC)	Coil Current (mA)(±10%)	Coil Resistance (Ω)	Coil Power (mW)
5	3.80	0.5	6.50	72	70 x (1±10%)	Approx. 360
6	4.50	0.6	7.80	60	100 x (1±10%)	
9	6.80	0.9	11.7	40	225 x (1±10%)	
12	9.00	1.2	15.6	30	400 x (1±10%)	
18	13.5	1.8	23.4	20	900 x (1±10%)	
24	18.0	2.4	31.2	15	1600 x (1±10%)	
48	36.0	4.8	62.4	7.5	6400 x (1±10%)	

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

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

2. CONTACT DATA

Contact Arrangement		1 Form A	1 Form C	
			NO	NC
Contact Resistance[1)]		100mΩ max. (at 1A 6VDC)		
Contact Material		$AgSnO_2$		
Contact Ratings (Resistive Load)		10A 277VAC / 28VDC	10A 277VAC / 28VDC[2)]	5A 250VAC
Max. Switching Voltage		277VAC / 28VDC		250VAC
Max. Switching Current		15A	10A	5A
Max. Switching Power		2770VA / 280W		1250VA
Life Expectancy[3)]	Electrical	100,000 operations (1 Form A, 10A 250VAC) 50,000 operations (1 Form C, 5A 250VAC)		
	Mechanical	10,000,000 operations		

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

2) Applicable when NC is not energized with load.

3) For plastic sealed type, the venting-hole should be opened in electrical endurance test.

3. CHARACTERISTICS

Insulation Resistance		100MΩ (at 500VDC)
Dielectric Strength	Open Contacts	750VAC 1min
	Coil and Contacts	1500VAC 1min
Operate Time (at nominal voltage)		10ms max.
Release Time (at nominal voltage)		5ms max.
Temperature Range		-40℃ ~ 105℃
Shock Resistance	Functional	98m/s^2
	Destructive	980m/s^2
Vibration Resistance		10 ~ 55Hz, 1.5mm DA
Humidity		5 ~ 85% RH
Termination		PCB
Weight		Approx. 10g
Outline Dimension (L x W x H)		19.0 x 15.2 x 15.5mm

Notes:

1) The data shown above are initial values.

2) If the ambient temperature is higher than 85℃, please contact to TEXCELL.

4. SAFETY APPROVAL RATINGS

Safety Standard	Contact Arrangement	Contact Rating
UL/cUL	1 Form A	10A 277VAC 10A 28VDC 15A 125VAC 6A 250VAC
	1 Form C	NO: 10A 277VAC NO: 10A 28VDC NO: 10A 120VAC NO: 6A 250VAC
TUV	-	12A 125VAC Cos phi=1 15A 125VAC Cos phi=1 NO: 10A 125-277VAC Cos phi=1 NC: 5A 125-250VAC Cos phi=1
CQC	-	10A 277VAC, 12A 125VAC

Notes:

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

2) For sealed type, the vent-hole cover should be excised.

5. ORDERING INFORMATION

NKB ①	1 ②	-	12 ③	S ④	F ⑤	T ⑥

① Relay Model	NKB
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
④ Construction	Nil: Flux Proofed Type S: Sealed Type
⑤ Insulation Standard	Nil: Class B F: Class F
⑥ Contact Material	T: $AgSnO_2$

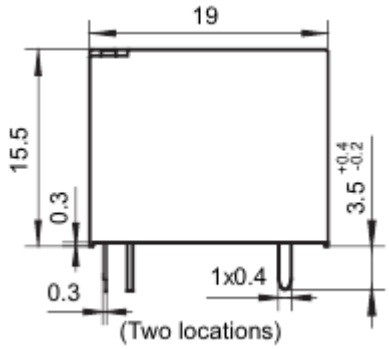
Notes:

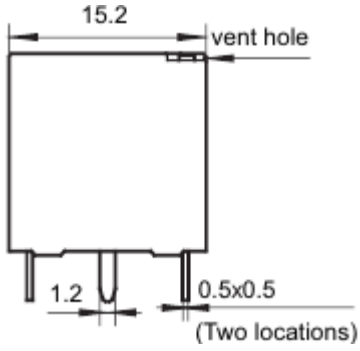
1) We recommend flux proofed types for a clean environment (free from contaminations like H_2S, SO_2, NO_2, dust etc.).
We suggest choose plastic sealed types and validate it in real application for an unclean environment (with contaminations like H_2S, SO_2, NO_2, dust etc.).

2) 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

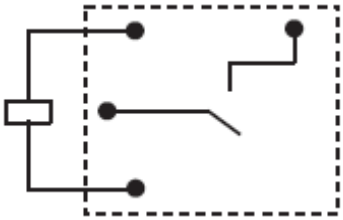


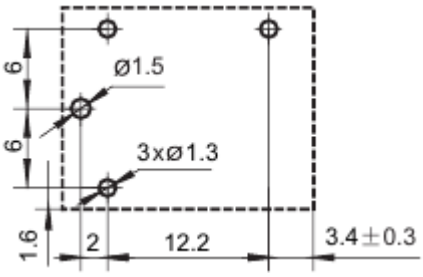


Wiring Diagram (Bottom View)

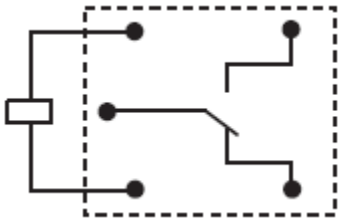
PCB Layout (Bottom View)

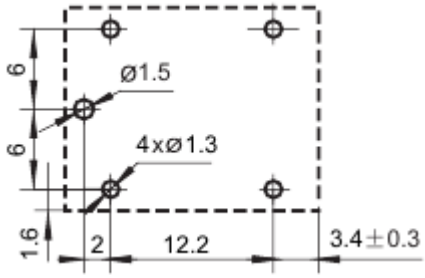
1 From A





1 From C





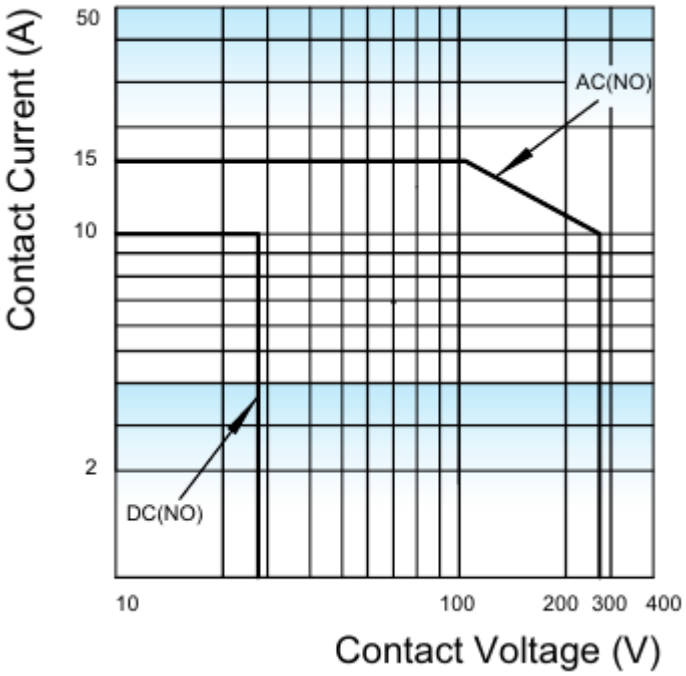
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.

2) The additional tin top is max. 1mm

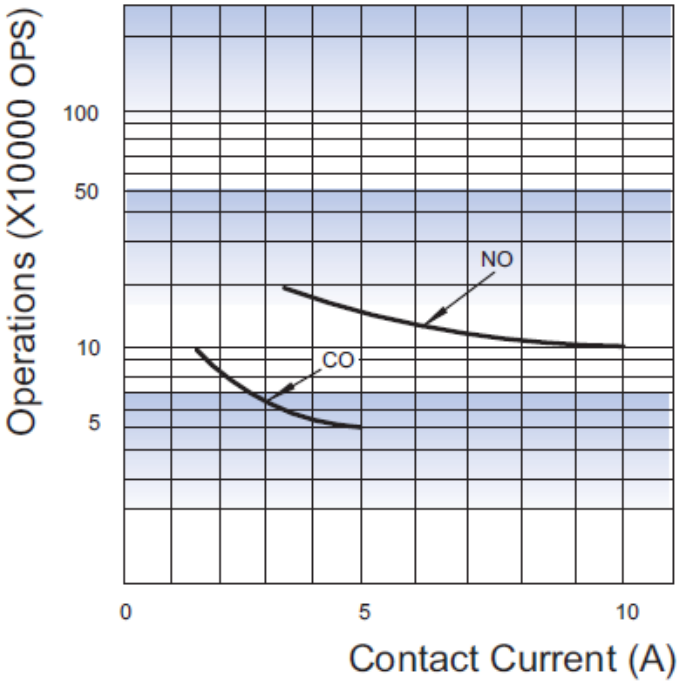
3) The tolerance without indicating for PCB layout is always ±0.1mm

7. CHARACTERISTIC CURVES

Maximum Switching Power



Endurance Curve



Coil Temperature Rise