Subminiature Automotive Relay	NKBA

Features

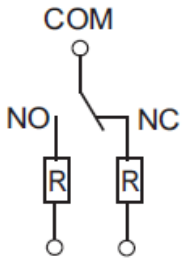
- 15A switching capability
- 1 Form A and 1 Form C configurations
- Subminiature, standard PCB layout
- Plastic sealed and flux proofed type
- RoHS & ELV compliant
- Typical application: Anti-theft lock, Central door lock

1. COIL DATA (at 23°C)

Nominal Voltage (VDC)	Pick-up Voltage (VDC) Max.	Drop-out Voltage (VDC) Min.	Max Allowable Overdrive Voltage[1] (VDC)		Coil Resistance (Ω)	Coil Power (mW)
			at 23℃	at 85℃		
9	6.75	0.90	11.7	10.8	180 x (1±10%)	450
12	9.00	1.20	15.6	14.4	320 x (1±10%)	
24	18.0	2.40	31.2	28.8	1280 x (1±10%)	
9	5.85	0.65	11.3	10.3	126 x (1±10%)	640
12	7.80	0.90	15.0	13.8	225 x (1±10%)	
24	15.6	1.80	30.0	27.6	900 x (1±10%)	
9	5.15	0.60	10.8	9.90	100 x (1±10%)	800
12	6.80	0.80	14.4	13.2	180 x (1±10%)	
24	13.7	1.60	28.8	26.4	720 x (1±10%)	

Notes: 1) Maximum allowable overdrive voltage is stated with no load applied

2. CONTACT DATA[1] (at 23°C)

Load voltage	Load type		Load current A			On/Off ratio		Electrical endurance operations	Contact material	Load wiring diagram
			1C		1A	On	Off			
			NO	NC	NO	s	s			
13.5VDC	Resistive	Make	15	5	15	5	5	100,000	H, N: $AgSnO_2$ B: AgNi	
		Break	15	5	15	5	5			

Notes:

1) When the load voltage is 24VDC or higher, or the applications conditions are different from the table above, please submit the detailed application conditions to TEXCELL to get more support.

3. CHARACTERISTICS

Contact arrangement		1 Form A, 1 Form C
Voltage drop (Initial)[1)]	Typical	20mV (at 10A)
	Maximum	250mV (at 10A)
Max. continuous current[2)]		10A
Max. switching current[3)]		15A
Max. switching voltage		30VDC
Min. contact load		1A 6VDC
Electrical endurance		100,000 operations
Mechanical endurance		10,000,000 operations (300ops/min)
Initial insulation resistance		100MΩ (at 500VDC)
Dielectric strength[4)]	Between contacts	750VAC
	Between coil & contacts	1500VAC
Operate time	Typical	5ms
	Maximum	10ms (at nominal voltage)
Release time[5)]	Typical	3ms
	Maximum	10ms
Ambient temperature		-40℃ ~ 85℃
Vibration resistance [6)]		10Hz ~ 55Hz 1.5mm DA
Shock resistance [6)]		98m/s^2
Termination		PCB[7)]
Construction		Plastic sealed, Flux proofed
Unit weight		Approx. 10g
Outline Dimension (L x W x H)		19.0 x 15.2 x 15.0mm

1) Equivalent to the max. initial contact resistance is 100mΩ (at 1A 6VDC).

2) For NO contacts. measured when applying 100% rated voltage on coil.

3) At 23℃, 13.5VDC (100 cycles, resistive load).

4) 1min. leakage current less than 1mA.

5) The value is measured when voltage drops suddenly from nominal voltage to 0VDC and coil is not paralleled with suppression circuit.

6) When energized, opening time of NO contacts shall not exceed 100μs.

When non-energized, opening time of NC contacts shall not exceed 100μs, meantime, NO contacts shall not be closed.

7) Since it is an environmental friendly product, please select lead-free solder when welding.

The recommended soldering temperature and time is (230±3)℃, (5±0.3)s.

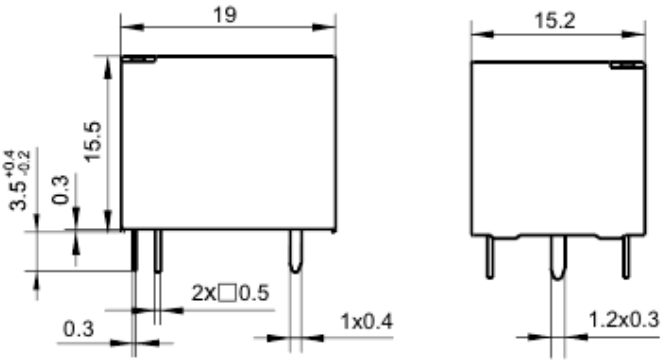
4. ORDERING INFORMATION

NKBA 1 - 12 S H ① ② ③ ④ ⑤	
① Relay Model	NKBA
② Contact Arrangement	11: 1 Form A (SPST-NO) 1: 1 Form C (SPDT)
③ Coil Voltage	9=9VDC, 12=12VDC, 24=24VDC,
④ Construction	Nil: Flux proofed S: Plastic Sealed
⑤ Coil Power	H: 450mW N: 640mW B: 800mW

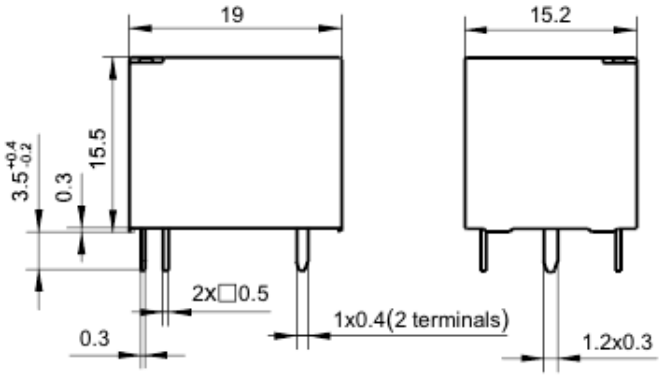
5. DIMENSIONS (Unit: mm)

Outline Dimensions

1 From A

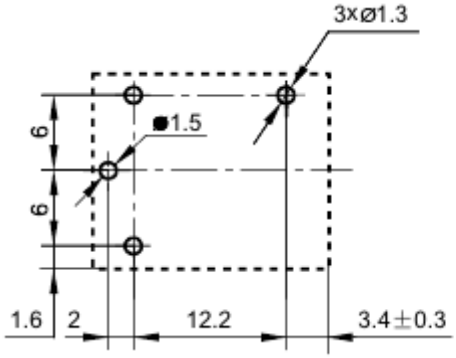


1 Form C

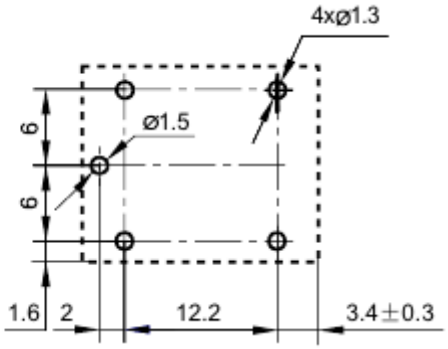


PCB Layout (Bottom View)

1 Form A

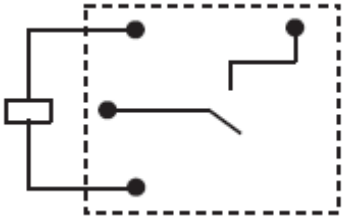


1 Form C

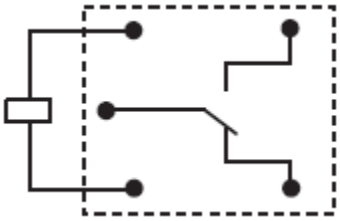


Wiring Diagram (Bottom View)

1 From A



1 Form C

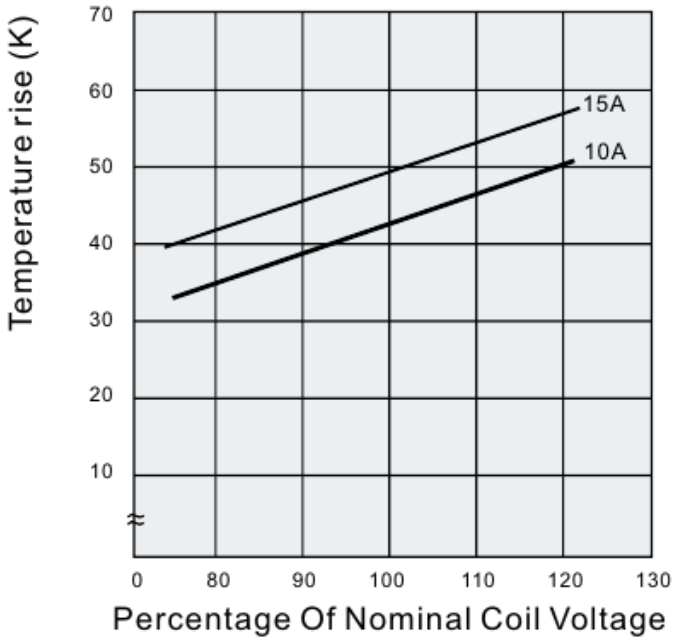


Remark: 1) The additional tin top is max. 1mm.

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

6. CHARACTERISTIC CURVES

Coil Temperature Rise



Endurance Curve