Subminiature Intermediate Power Relay	NS

Features

- 10A switching capability
- Provide 5A 250VAC to meet 300,000 switching capability
- 1 Form A and 1 Form C configurations
- Product in accordance to IEC 60335-1 available
- Creepage distance: 8mm (coil & contacts)
- Clearance distance: NO type 4.5mm, NC type 4mm
- UL insulation system: Class F

c UL us
(File No.:E134581)

1. COIL DATA (at 23°C)

1) Standard Type

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)
3	2.25	0.15	3.90	150	20 x (1±10%)	450
5	3.75	0.25	6.50	90.0	55 x (1±10%)	
6	4.50	0.30	7.80	75.0	80 x (1±10%)	
9	6.75	0.45	11.7	50.0	180 x (1±10%)	
12	9.00	0.60	15.6	37.5	320 x (1±10%)	
18	13.5	0.90	23.4	25.0	720 x (1±10%)	
24	18.0	1.20	31.2	18.8	1280 x (1±10%)	
48	36.0	2.40	62.4	9.40	5120 x (1±10%)	

2) Sensitive Type (Only for 1 Form A)

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)
			NS	NSG			
3	2.25	0.15	4.50	3.90	66.7	45 x (1±10%)	200
5	3.75	0.25	7.50	6.50	40.0	125 x (1±10%)	
6	4.50	0.30	9.00	7.80	33.3	180 x (1±10%)	
9	6.75	0.45	13.5	11.7	22.2	400 x (1±10%)	
12	9.00	0.60	18.0	15.6	16.7	720 x (1±10%)	
18	13.5	0.90	27.0	23.4	11.1	1600 x (1±10%)	
24	18.0	1.20	36.0	31.2	8.33	2800 x (1±10%)	
48	36.0	2.40	72.0	62.4	4.17	11520 x (1±10%)	

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

2. CONTACT DATA

1) Standard (NS type)

Contact Arrangement		1 Form A, 1 Form C		
Contact Resistance		100mΩ max. (at 1A 6VDC)		
Contact Material		$AgSnO_2$		
Contact Ratings (Resistive Load)		1 Form A	1 Form C	
			NO	NC
		5A 250VAC / 30VDC 10A 125VAC	5A 250VAC / 30VDC 10A 125VAC	3A 250VAC / 30VDC
Max. Switching Voltage		250VAC / 30VDC		
Max. Switching Current		10A		3A
Max. Switching Power		1250VA / 150W		750VA
Life Expectancy	Electrical	1 Form A: 300,000 operations (at 5A 250VAC) 1 Form C: 100,000 operations (at NO: 5A / NC: 3A 250VAC)		
	Mechanical	5,000,000 operations		

2) High Capacity (NSG type)

Contact Arrangement		1 Form A, 1 Form C		
Contact Resistance		100mΩ max. (at 1A 6VDC)		
Contact Material		$AgSnO_2$		
Contact Ratings (Resistive Load)		1 Form A	1 Form C	
			NO	NC
		10A 250VAC	10A 250VAC	5A 250VAC
Max. Switching Voltage		277VAC		
Max. Switching Current		10A		5A
Max. Switching Power		2500VA		1250VA
Life Expectancy	Electrical	100,000 operations (at 10A 250VAC)		
	Mechanical	5,000,000 operations		

Note: The data shown above are initial values.

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)		5ms max.
Temperature Range		-40℃ ~ 85℃
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. 7g
Outline Dimension (L x W x H)		20.5 x 10.2 x 15.7mm

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

2) For working environment temperature of 105℃, please contact toTEXCELL

4. ORDERING INFORMATION

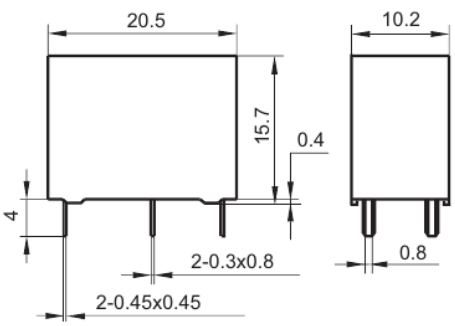
NS ①	G ②	11 ③	-	12 ④	S ⑤	H ⑥	F ⑦

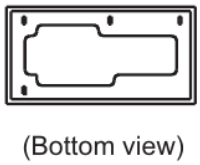
① Relay Model	NS
② Contact Ratings	Nil: Standard G: High Capacity
③ Contact Arrangement	11: 1 Form A (SPST-NO) 1: 1 Form C (SPDT)
④ Coil Voltage	3=3VDC, 5=5VDC, 6=6VDC, 9=9VDC, 12=12VDC, 18=18VDC, 24=24VDC, 48=48VDC
⑤ Construction	S: Sealed type
⑥ Coil Power	Nil: Sensitive (200mW) (only for 1 Form A) H: Standard (450mW)
⑦ Insulation Standard	Nil: Class B F: Class F

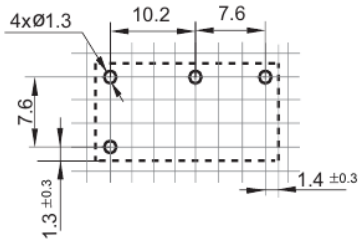
6. DIMENSIONS (Unit: mm)

Outline Dimensions　　Wiring Diagram (Bottom View)　　PCB Layout (Bottom view)

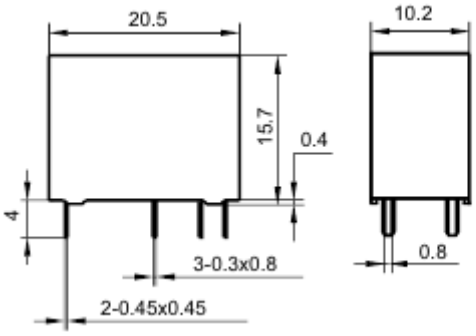
1 Form A

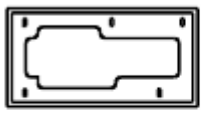


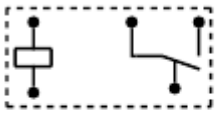


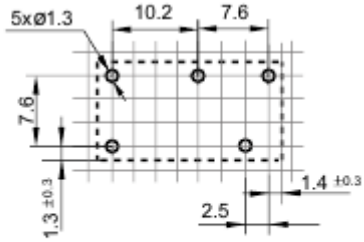


1 Form C









Remark:

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

2) 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.

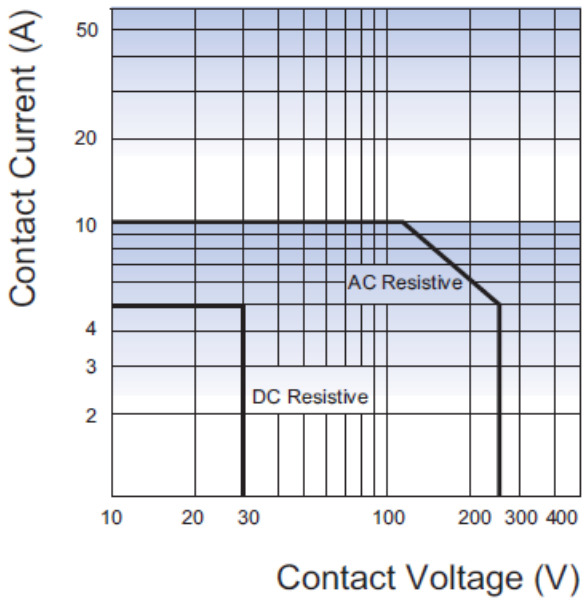
3) The tolerance without indicating for PCB layout is always ±0.1mm.

4) The width of the gridding is 2.54mm.

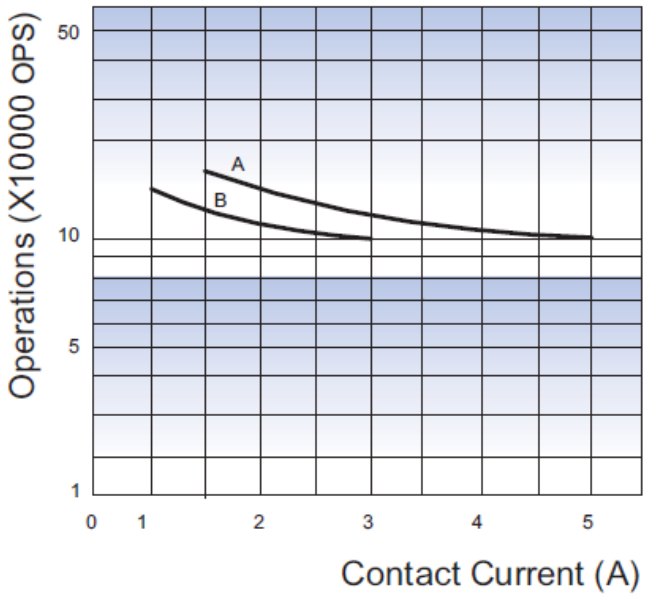
7. CHARACTERISTIC CURVES

1) Standard (NS type)

Maximum Switching Power



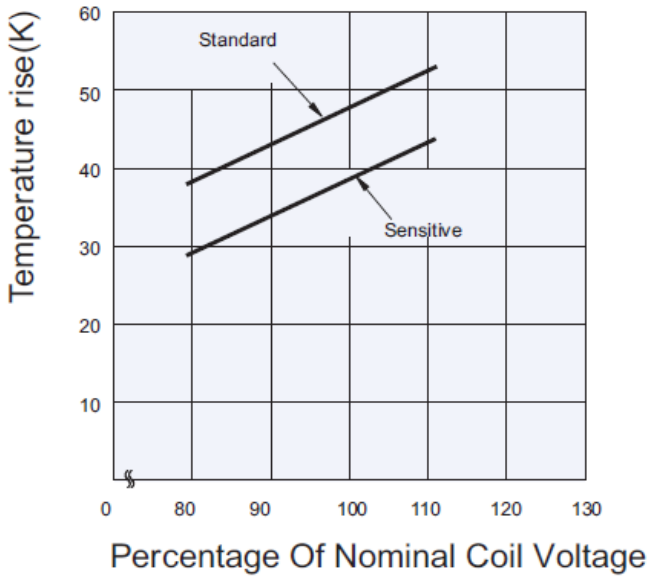
Endurance Curve



Notes: 1) Curve A: NO contact

2) Curve B: NC contact

Coil Temperature Rise



Notes:

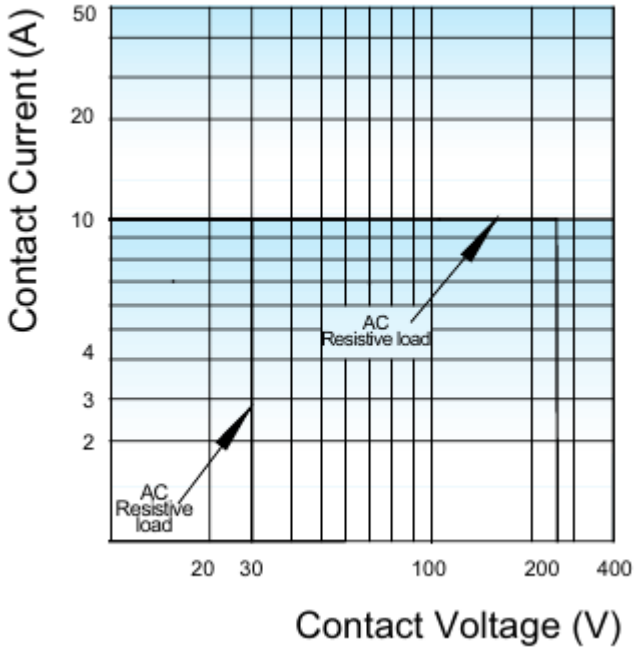
Standard: 5A at 85℃

Sensitive: 5A at 85℃

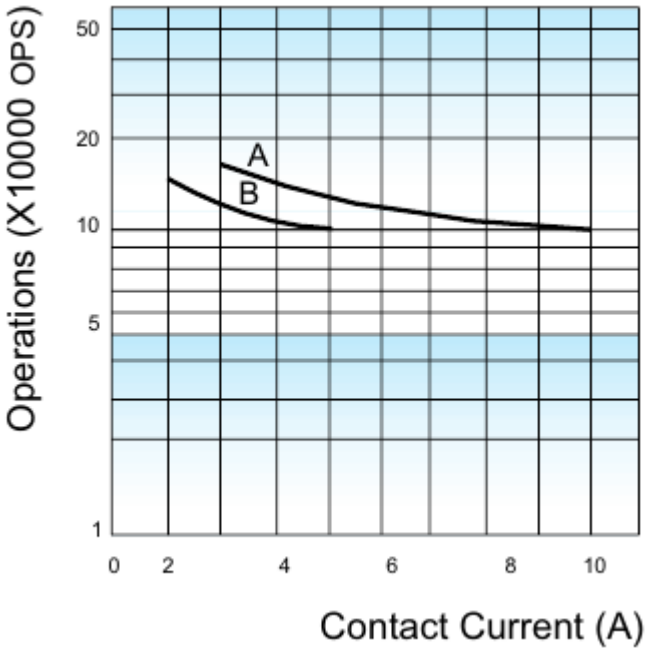
Mounting distance: 10mm

2) High Capacity (NSG type)

Maximum Switching Power



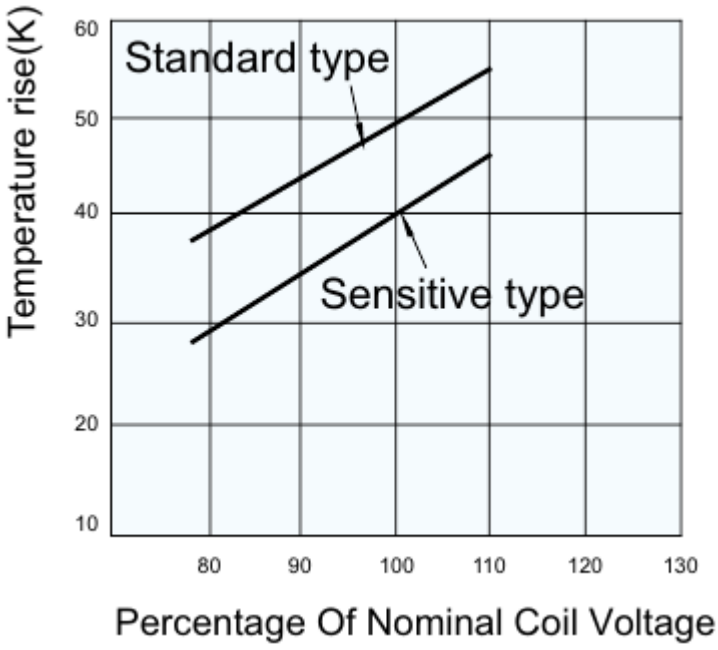
Endurance Curve



Notes: 1) Curve A: NO contact

2) Curve B: NC contact

Coil Temperature Rise



Notes:

Test conditions: 10A at 85℃

Mounting distance: 10mm