Miniature High Power Relay	THK

Features

- Low height: 15.7mm
- 16A switching capability
- 5kV dielectric strength (between coil and contacts)
- Creepage distance: 10mm
- Meeting reinforce insulation
- Product in accordance to IEC 60335-1 available
- UL insulation system: Class F
- Through-Hole Reflow Version available
- Plastic sealed Type
- Socket available

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(File No.:E134581)

1. COIL DATA (at 23°C)

1) Standard type

Nominal Voltage (VDC)	Pick-up Voltage(VDC)[1)]	Drop-out Voltage(VDC)[1)]	Max. Allowable Voltage(VDC)[2)]	Coil Current (mA)(±10%)	Coil Resistance (Ω)	Coil Power (mW)
5	3.50	0.5	7.5	80.0	62 x (1±10%)	Approx. 400
6	4.20	0.6	9.0	66.7	90 x (1±10%)	
9	6.30	0.9	13.5	44.4	202 x (1±10%)	
12	8.40	1.2	18	33.3	360 x (1±10%)	
18	12.6	1.8	27	22.2	810 x (1±10%)	
24	16.8	2.4	36	16.7	1440 x (1±10%)	
48	33.6	4.8	72	8.33	5760 x (1±15%)	

2) High power consumption type

Nominal Voltage (VDC)	Pick-up Voltage(VDC)[1)]	Drop-out Voltage(VDC)[1)]	Max. Allowable Voltage(VDC)[2)]	Coil Current (mA)(±10%)	Coil Resistance (Ω)	Coil Power (mW)
5	3.50	0.5	7.5	106	47 x (1±10%)	Approx. 530
6	4.20	0.6	9.0	88.3	68 x (1±10%)	
9	6.30	0.9	13.5	58.9	153 x (1±10%)	
12	8.40	1.2	18	44.2	271 x (1±10%)	
18	12.6	1.8	27	29.4	611 x (1±10%)	
24	16.8	2.4	36	22.1	1086 x (1±10%)	
48	33.6	4.8	72	11.0	4347 x (1±15%)	

Notes: 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		1A, 1C		2A, 2C
Contact Resistance[1)]		100mΩ max. (at 1A 6VDC)		
Contact Material		$AgSnO_2$, AgNi		
Contact Ratings (Resistive load)		12A 250VAC	16A 250VAC	8A 250VAC*
Max. Switching Voltage		400VAC		
Max. Switching Current		12A	16A	8A
Max. Switching Power		3000VA	4000VA	2000VA
Life Expectancy	Electrical	100,000 operations		50,000 operations
	Mechanical	10,000,000 operations		

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

3. CHARACTERISTICS

Insulation Resistance		1000MΩ (at 500VDC)
Dielectric Strength	Open Contacts	1000VAC 1min
	Coil and Contacts	5000VAC 1min
	Contact Sets	2500VAC 1min
Surge voltage (between coil and contacts)		10kV (1.2 x 50μs)
Operate Time (at nominal voltage)		10ms 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 ~ 150Hz 10g/5g
Humidity		5 ~ 85% RH
Termination		PCB
Weight		Approx. 13g
Outline Dimension (L x W x H)		29.0 x 12.7 x 15.7mm

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

2) *Index is not in relay length direction.

4. ORDERING INFORMATION

THK ①	1 ②	-	H ③	12 ④	S ⑤	H ⑥	T ⑦	(XX) ⑧

① Relay Model	THK
② Contact Arrangement	11: 1 Form A (SPST-NO) 1: 1 Form C (SPDT) 22: 2 Form A (DPST-NO) 2: 2 Form C (DPDT)
③ Contact Current	Nil: 8A (5.0mm pinning, 2poles) E: 16A (5.0mm pinning, 1pole) H: 12A (3.5mm pinning, 1pole) Q: 12A (5.0mm pinning, 1pole)
④ Coil Voltage	5=5VDC, 6=6VDC, 9=9VDC, 12=12VDC, 18=18VDC, 24=24VDC, 48=48VDC
⑤ Construction	Nil: Flux proofed S: Sealed Type (Only applicable to 1pole)
⑥ Coil Type	Nil: Standard H: High power consumption type
⑦ Contact Material	Nil: AgNi T: $AgSnO_2$
⑧ Customer Special Code	(XX): May be followed by additional letters or numbers (Does not affect the construction)

Notes:

1) We recommend flux proofed types for a clean environment (free from 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.

5. SAFETY APPROVAL

1) Standard type

UL/cUL	$AgSnO_2$	THK1-H**T	12A 250VAC at 85℃
		THK1-Q**T	12A 250VAC at 85℃
		THK1-E**T	16A 250VAC at 85℃
		THK2-**T	8A 250VAC at 85℃
	AgNi	THK1-H**	12A 250VAC at 85℃
		THK1-Q**	12A 250VAC at 85℃
		THK1-E**	16A 250VAC at 85℃
		THK2-**	8A 250VAC at 85℃

2) High power consumption type

UL/cUL	$AgSnO_2$	THK1-H**HT	12A 277VAC at 85℃ 16A 277VAC room temperature TV8 NO room temperature
		THK1-Q**HT	12A 277VAC at 85℃ 6A 277VAC room temperature TV8 NO room temperature
		THK1-E**HT	16A 277VAC at 85℃ TV8 NO room temperature
		THK2-**HT	8A 250VAC at 85℃

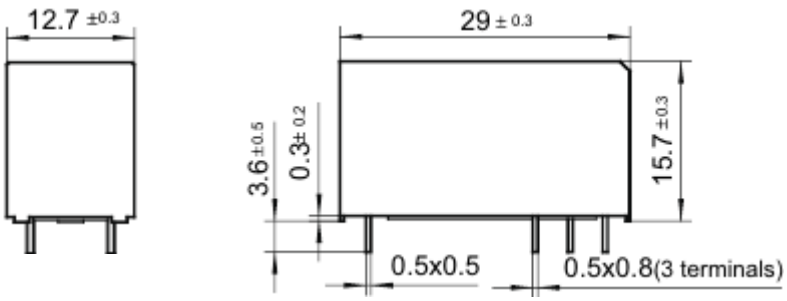
Notes: 1) All values unspecified are at room temperature.

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

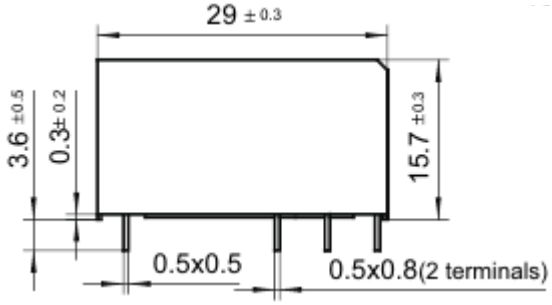
6. DIMENSIONS (Unit: mm)

Outline Dimensions

3.5mm pining (1pole, 12A)



5mm pining (1pole 12A, 1pole 16A, 2pole 8A)



Wiring Diagram (Bottom View)

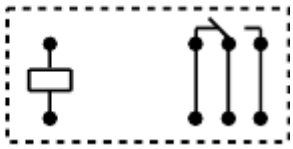
3.5/5mm pining (1pole, 12A)

1 Form A

1 Form C

5mm pining (1pole, 16A)

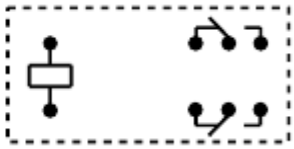
1 Form A



1 Form C

5mm pining (2pole, 8A)

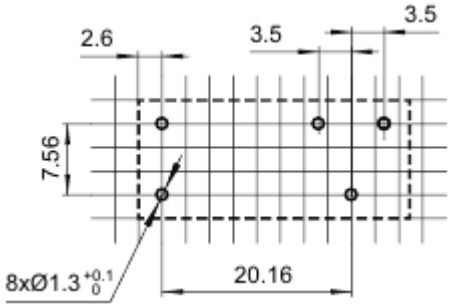
2 Form A



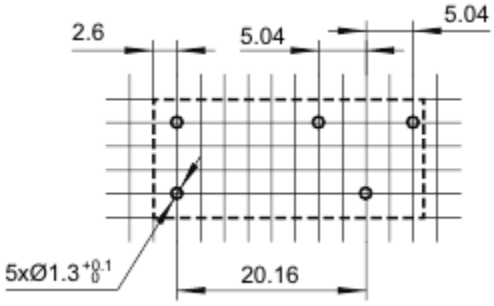
2 Form C

PCB Layout (Bottom view)

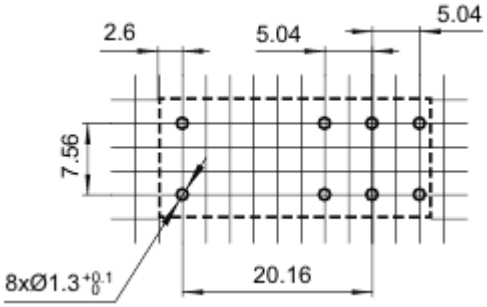
3.5mm 1Pole 12A



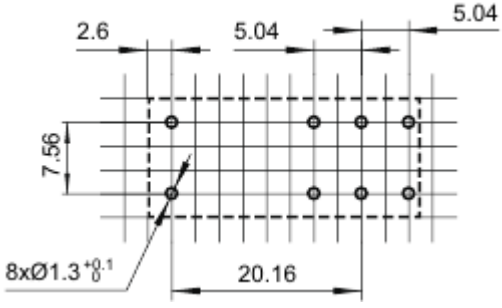
5mm 1Pole 12A



5mm 1Pole 16A



5mm 2Pole 8A



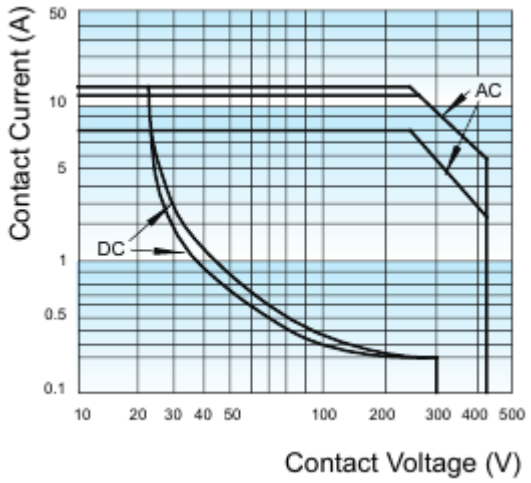
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.

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

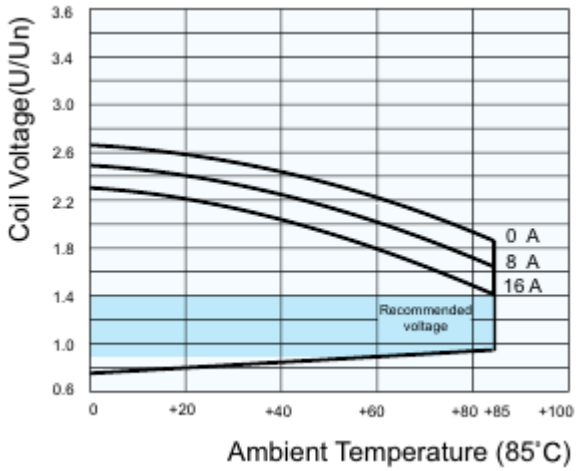
3) The width of the gridding is 2.52mm.

7. CHARACTERISTIC CURVES

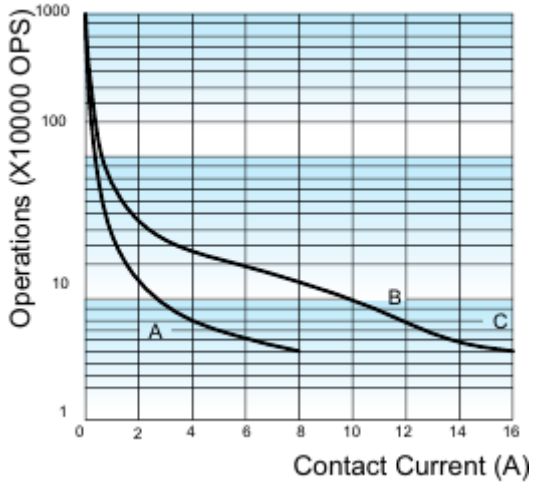
Maximum Switching Power



Coil Operating Range*



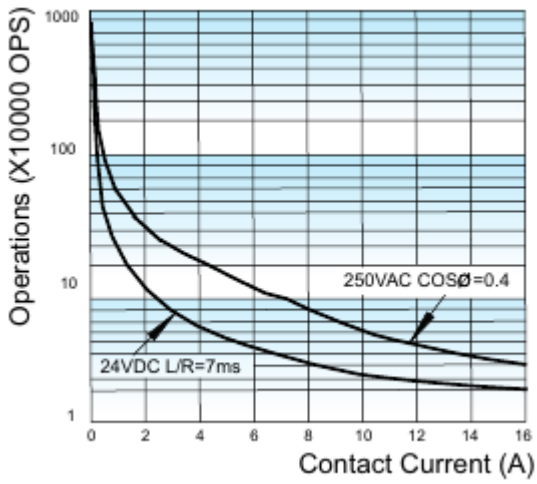
Endurance Curve (Resistive)



Note:

1. Curve A: THK2-**T
2. Curve B: THK1-Q**T
3. Curve C: THK1-E**T

Endurance Curve (Inductive)



Note:

Curve: THK11-E**T

Note: *Coil Operating Range

The use of a relay with an energizing voltage other than the rated coil voltage may lead to reduced electrical life.

An energizing voltage over the above range may damage the insulation of relay coil.