

KH

## Miniature High Power Relay

### Features

- 20A switching capability
- 5kV dielectric strength (between coil and contacts)
- 10kV surge voltage (between coil and contacts)
- Meet requirement of 8mm creepage distance
- PCB & QC layouts available
- Class F & Class B available

1. COIL DATA (at 20°C)

Nominal	Pick-up	Drop-out	Max Allowable	Coil Current	Coil Resistance	Coil Power
Voltage (VDC)	Voltage (VDC)	Voltage (VDC)	Voltage (VDC)	(mA)(±10%)	(Ω)	(mW)
5	4.00	0.5	6.50	108	46 x (1±10%)	
6	4.80	0.6	7.80	90	67 x (1±10%)	
9	7.20	0.9	11.7	60	150 x (1±10%)	Approx.
12	9.60	1.2	15.6	45	270 x (1±10%)	540
24	19.2	2.4	31.2	22.5	1050 x (1±10%)	
48	38.4	4.8	62.4	11.3	4250 x (1±10%)	

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		1 Form A		
Contact Resistance		100mΩ max. (at 1A 6VDC)		
Contact Material		AgSnOlnO		
Minimum Load		1A 6VDC		
Load		Resistive load (COSΦ=1)		
Contact Ratings (Resistive load)		H (High capacity): 20A 250VAC Nil (Standard): 16A 250VAC, 16A 30VDC, 20A 125VAC		
Max. Switching Voltage		277VAC / 30VDC		
Max. Switching Current		20A		
Life Expectancy	Electrical	100,000 operations (at 6 operations/minute)		
	Mechanical	10,000,000 operations (at 300 operations/minute)		

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## **3. CHARACTERISTICS**

Insulation Resistance		1000MΩ (at 500VDC)		
Dielectric Strength	Open Contacts	1000VAC (50/60Hz for 1min)		
	Coil and Contacts	5000VAC (50/60Hz for 1min)		
Operate Time (at nominal	voltage)	10ms max.		
Release Time (at nominal voltage)		5ms max.		
Temperature Range		-40 ℃ ~ 105 ℃ (no freezing)		
Shock Resistance	Operating Extremes	10G		
	Damage Limits	100G		
Vibration Resistance		10 ~ 55Hz 1.5mm DA		
Max. switching frequency	Mechanical	18,000 operations/hr		
	Electrical	360 operations/hr		
Humidity		20 ~ 85%		
Termination		PCB, PCB & QC		
Construction		Dust proof, Plastic sealed		
Weight		Approx. 15g		
Outline Dimension (L. y.W.	х Н)	H (High capacity): 29.0 x 12.6 x 23.3mm		
	A 11)	Nil (Standard): 29.0 x 12.5 x 24.8mm		

## 4. SAFETY APPROVAL RATINGS

Safety Standard	Contact Arrangement	Contact Rating	
		20A 125VAC	
	Nil (Standard)	16A 250VAC	
		1/3HP 120/250/277VAC	
UL/cUL		20A 250/277VAC	
	H (High capacity)	20A 30VDC	
		2HP 240/250/277VAC	
		12FLA/72LRA 250/277VAC	



### 5. ORDERING INFORMATION

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① Relay Model	КН	
② Contact Arrangement	11: 1 Form A (SPST-NO)	
(2) Termination	Nil: PCB	
	TMP: PCB & QC	
	E5=5VDC, E6=6VDC, E9=9VDC, E12=12VDC, E18=18VDC,	
	E24=24VDC, E48=48VDC	
© Construction	Nil: Dust Proof Type	
	S: Plastic Sealed Type	
Contact Conscitu	Nil: Standard (16A)	
	H: High Capacity (20A)	

## 6. DIMENSIONS (Unit: mm)

# 1) PCB Type

### Standard (16A)

### **Outline Dimensions**



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High Capacity (20A)

**Outline Dimensions** 29 12.5 (Down View) 23.3 0 C 0 0 (Bottom View) 2-0.55 2-0.8 20 3.5 2.5 CQM 013 7.6 NO

Wiring Diagram



PCB Layout

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## 2) PCB & QC Type

## Standard (16A)



High Capacity (20A)





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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 tip top is max. 1mm.
- 3) The tolerance without indicating for PCB layout is always ±0.1mm.