

File No : F75887



File No.:R 50390115







### **FEATURES**

- · 35A switching capability
- · Surge voltage up to 6kV (between coil and contacts)
- · 1 Form C and 1 Form A configurations available
- · Dust Cover Type, Flux Free Type and Sealed Type is available
- · Creepage Distance up to 6mm
- · Outline Dimensions: 21.6mm×16.0mm×20.6mm

### **CONTACT RATINGS**

Contact Arrangement	1A, 1C
	,
Contact Resistance	≤100mΩ (1A 24VDC)
Contact Material	AgSnO
Contact Rating(Resistive)	N.O.:35A/277VAC
	N.C.:16A/277VAC
Max. Switching Voltage	277VAC
Max. Switching Current	35A
Max. Switching Power	9695VA
Mechanical Life	1×10 <sup>5</sup> operations(frequency 9,000 operations/hr)
Electrical Life	See more details at "safety approval ratings"

### **CHARACTERISTICS**

Insulation Resistance		100MΩ (at 500VDC)	
Dielectric	Between coil & contacts	4000VAC 1min	
Strength	Between open contacts	1500VAC 1min	
Operate time (at nomi. volt.)		≤15ms	
Release time (at nomi. volt.)		≤10ms	
Humidity		85%	
Operation temperature		-40°C~+85°C(105°C for Class H)	
Class F/H		Insulation System Class F/H	
Shock Operating extremes Resistance Damage limits		10G	
		100G	
Vibration resistance		10Hz ~ 50Hz 1.0mm DA	
Unit weight		Approx. 15g	
Construction		Sealed Type, Dust Cover Type, Flux Tight Type	

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

2) Please find coil temperature curve in the characteristic curves.

#### **ORDERING INFORMATION**

HPK F 1C 35 DC12 - E - 1.5 - XXXX

Model

F:Class F H:Class H

1A:1 Form A 1C:1 Form C

35:35A

Coil Voltage

C:Dust Cover Type S:Sealed Type E:Flux Tight Type

Contact Gap: Blank=Standard gap 1=1mm(Only for A)

1.5=1.5mm(Only for A) 2=2.1mm(Only for A)

Notes:

Customer Code

- PC board assembled with dust cover type and flux tight type relays can not be washed and/or coated.
- 2. Dust cover type and flux tight type relays can not be used in the environment with dust, or H<sub>2</sub>S, SO<sub>2</sub>, NO<sub>2</sub> or similar gaseous environment etc.

## COIL DATA at 25°C

Nominal Voltage VDC	Operate Voltage (Max.) VDC <sup>(1)</sup>	Release Voltage (Min.) VDC	Holding Voltage at 85°C VDC <sup>(2)</sup>	Coil Resistance Ω±10%
6	4.8	0.30	1.92~2.16	22
9	7.2	0.45	2.88~3.24	49
12	9.6	0.60	3.84~4.32	86
24	19.2	1.20	7.68~8.64	345
48	38.4	2.40	15.36~17.28	1380

This datasheet is for customers' reference. All the specifications are subject to change without notice.



RELAYS

#### COIL

Power consumption at rated voltage	1670mW
Power consumption at holding voltage	190mW <sup>(2)</sup>

#### Notes

- (1) To energize relay properly apply 100%~120% nominal coil voltage for 200ms.
- (2) Coil holding voltage is  $32\sim36\%$  of nominal voltage after applying nominal voltage for 200ms.

## SAFETY APPROVAL RATINGS

UL&CUL	N.O.:35A 277VAC, 70°C, 5×10⁴ OPS(HPKH only)
	N.O.:32A 277VAC, 85°C, 34×10³ OPS(HPKH only)
	N.O.:25A 277VAC, 105°C, 5×10 <sup>4</sup> OPS(HPKH only) N.O.:35A 277VAC Resistive, 24×10 <sup>3</sup> OPS
	N.O.:25A 277VAC RESISTIVE, 24×10*OPS  N.O.:25A 277VAC/35VDC, 40°C, 5×10 <sup>4</sup> OPS
	N.O.:5A 120VAC E.Ballast, 40°C, 6×10³ OPS
	N.O.:TV-8 277VAC
	N.C.:16A 277VAC, 40°C, 7×10³ OPS
	N.C.:16A 277VAC, 85°C, 15×10° OPS(HPKH only)
	N.C.:32A Carry Current

TüV N.O.:50A/30VDC, 25°C, 5×10<sup>4</sup> OPS N.O.:35A/277VAC, 25°C, 5×10<sup>4</sup> OPS N.O.:25A/277VAC, 105°C, 1×10<sup>4</sup> OPS N.O.:32A/277VAC, 85°C, 1×10<sup>4</sup> OPS N.O.:35A/277VAC, 70°C, 1×10<sup>4</sup> OPS

#### NOTES:

- 1. All values without specified temperature are at 25°C.
- 2. The above lists the typical loads only. Other loads may be available upon request.

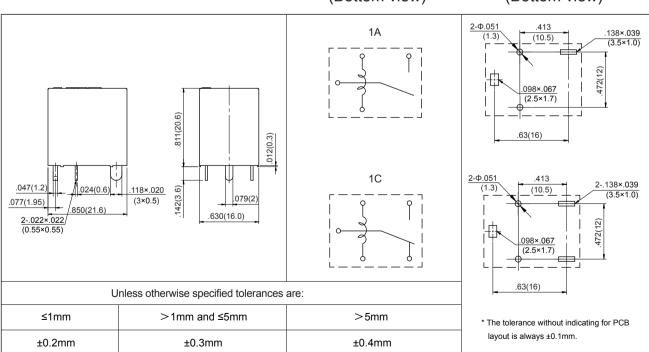
# OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT.

Unit: inch(mm)

# **Outline Dimensions**

# Wiring Diagram (Bottom view)

# PCB Layout (Bottom view)



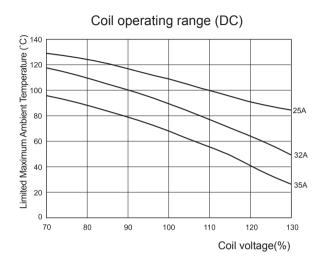
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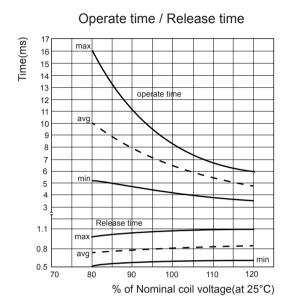


**RELAYS** 

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### CHARACTERISTIC CURVES





# PACKAGING SPECIFICATION

BLISTER BOX	OUTER CARTON	OUTER CARTON SIZE
30PCS	1000PCS	L540mm*W200mm*H165mm

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## **APPLICATION GUIDELINES**

#### **Automatic Soldering**

- \* Flow solder is the optimum method for soldering.
- \* Adjust the level of solder so that it does not overflow onto the top of the PC board.
- \* Unless otherwise specified, solder under the following conditions depending on the type of relay.

Preheat time	Rising slope	Decreasing slope	Welding temperature
20°C-100°C	20°C-120°C	Peak-150°C	255°C-265°C
90±5 seconds	<3°C/s	<4°C/s	3~5s

#### **Hand Soldering**

\* Keep the tip of the soldering iron clean.

Solder Iron	30W or 60W
Iron Tip Temperature	Approx. 350°C 662°F
Solder Time	Within approx. 3 seconds

- \* Immediate air cooling is recommended to prevent deterioration of the relay and surrounding parts due to soldering heat.
- \* Although the sealed type relay can be cleaned, avoid immersing the relay into cold liquid (such as washing solvent) immediately after soldering. Doing so may deteriorate the sealing performance.

#### Discard the dropped product

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