

HPK SERIES

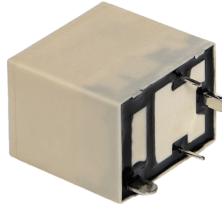
POWER RELAY



File No.:E75887



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 ⁵ operations(frequency 9,000 operations/hr)
Electrical Life	See more details at "safety approval ratings"

ORDERING INFORMATION

Model	HPK	F	1C	35	DC12	-E-	1.5	-XXXX
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)						
Customer Code								

Notes:

1. 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 H₂S, SO₂, NO₂ or similar gaseous environment etc.

CHARACTERISTICS

Insulation Resistance		100MΩ (at 500VDC)
Dielectric Strength	Between coil & contacts	4000VAC 1min
	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 Resistance	Operating extremes	10G
	Damage limits	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.

COIL DATA

at 25°C

Nominal Voltage VDC	Operate Voltage (Max.) VDC ⁽¹⁾	Release Voltage (Min.) VDC	Holding Voltage at 85°C VDC ⁽²⁾	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 & ELECTRONICS INT'L. CORP.

* SINCE 1976 *

Tel:13650051936

Website : www.edamcn.com

Email: leo@edamcn.com

RELAYS

HPK SERIES

POWER RELAY

COIL

Power consumption at rated voltage	1670mW
Power consumption at holding voltage	190mW ⁽²⁾

Notes:

- (1) To energize relay properly apply 100%~120% nominal coil voltage for 200ms.
 (2) Coil holding voltage is 32~36% of nominal voltage after applying nominal voltage for 200ms.

SAFETY APPROVAL RATINGS

UL&CUL	N.O.:35A 277VAC, 70°C, 5×10 ⁴ OPS(HPKH only) N.O.:32A 277VAC, 85°C, 34×10 ³ OPS(HPKH only) N.O.:25A 277VAC, 105°C, 5×10 ⁴ OPS(HPKH only) N.O.:35A 277VAC Resistive, 24×10 ³ OPS N.O.:25A 277VAC/35VDC, 40°C, 5×10 ⁴ OPS N.O.:5A 120VAC E.Ballast, 40°C, 6×10 ³ OPS N.O.:TV-8 277VAC N.C.:16A 277VAC, 40°C, 7×10 ³ OPS N.C.:16A 277VAC, 85°C, 15×10 ³ OPS(HPKH only) N.C.:32A Carry Current
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TüV	N.O.:50A/30VDC, 25°C, 5×10 ⁴ OPS N.O.:35A/277VAC, 25°C, 5×10 ⁴ OPS N.O.:25A/277VAC, 105°C, 1×10 ⁴ OPS N.O.:32A/277VAC, 85°C, 1×10 ⁴ OPS N.O.:35A/277VAC, 70°C, 1×10 ⁴ OPS
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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)

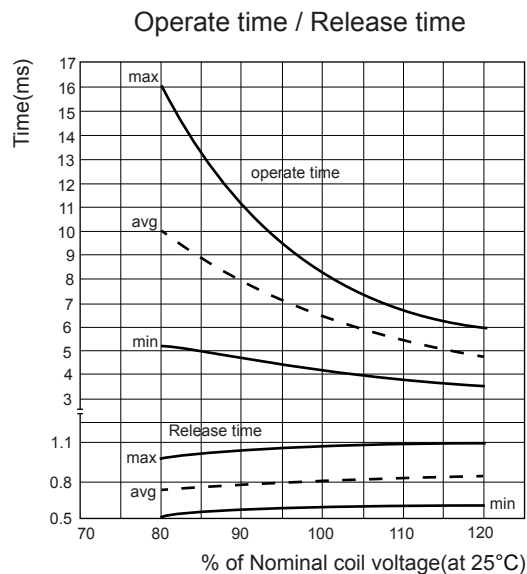
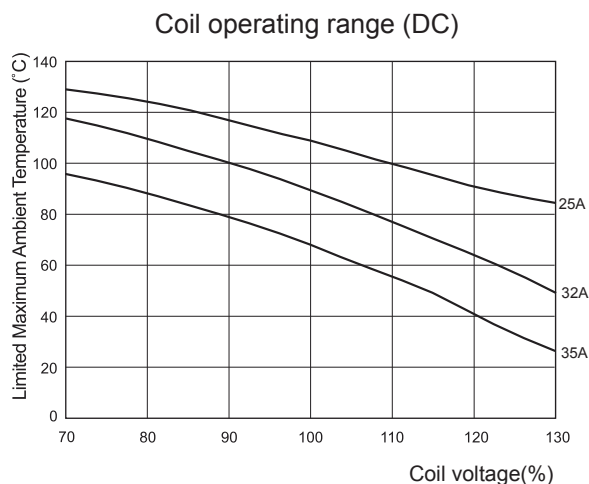
Top View Dimensions: .047(1.2), .077(1.95), .024(0.6), .118×.020 (3×0.5), .850(21.6), 2-.022×.022 (0.55×0.55) Side View Dimensions: .811(20.6), .142(3.6), .079(2), .630(16.0), .012(0.3)			1A 1C		2-Φ.051 (1.3), .413 (10.5), .138×.039 (3.5×1.0), .098×.067 (2.5×1.7), .472(12), .63(16)
Unless otherwise specified tolerances are:					
≤1mm	> 1mm and ≤5mm	>5mm			
±0.2mm	±0.3mm	±0.4mm			

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

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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 Wave Soldering

- * Wave 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 20°C-100°C	Rising slope 20°C-120°C	Decreasing slope Peak-150°C	Soldering temperature 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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