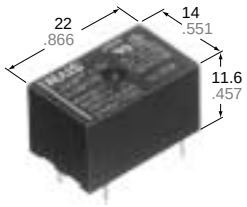
⚠ Discontinued

NAiS

15 A POWER COMPACT RELAY

JG-P RELAYS



mm inch

FEATURES

- **Compact & flat design: 22 mm .866 inch (length) ¥ 14 mm .551 inch (width) ¥ 11.6 mm .457 inch (height)**
- **High capacity: 15 A nominal switching capacity**
- **AMP receptacle type (Vertical & Horizontal type) is available**
- **High surge resistance: Min. 10,000 V between contact and coil**
- **VDE, TÜV also approved**

SPECIFICATIONS

Contact

Arrangement		1 Form A
Initial contact resistance, max. (By voltage drop 6 V DC 1A)		100 mOhm
Contact material		Silver alloy
Rating (resistive load)	Nominal switching capacity	15 A 125 V AC 10 A 250 V DC 10 A 30 V DC
	Max. switching power	2,500 VA, 300 W
	Max. swtiching voltage	250 V AC, 110 V DC (0.3 A)
	Max. switching current	15 A (AC), 10 A (DC)
Expected life (min. operations)	Mechanical (at 180 cpm)	$5x10^6$
	Electrical (at 20 cpm) (at rated load)	10^5

Coil

Nominal operating power	400 mW

Remarks

* Specifications will vary with foreign standards certification ratings.
*1 Measurement at same location as "Initial breakdown voltage" section
*2 Detection current: 10 mA
*3 Wave is standard shock voltage of ±1.2 x 50µs according to JEC-212-1981
*4 Excluding contact bounce time
*5 Half-wave pulse of sine wave: 11ms; detection time: 10µs
*6 Half-wave pulse of sine wave: 6ms
*7 Detection time: 10µs
*8 Refer to 5. Conditions for operation, transport and storage mentioned in AMBIENT ENVIRONMENT (Page 61).

Characteristics

Max. operating speed		20 cpm
Initial insulation resistance*1		Min. 100 MOhm at 500 V DC
Initial breakdown voltage*2	Between open contacts	750 Vrms for 1 min.
	Between contacts and coil	4,000 Vrms for 1 min.
Surge voltage between contact and coil*3		Min. 10,000 V
Operate time*4 (at nominal voltage)		Approx. 6 ms
Release time*4 (without diode) (at nominal voltage)		Approx. 2 ms
Temperature rise (ambient temperature: 70°C)		Max. 45°C with nominal coil voltage and at 15 A contact current
Shock resistance	Functional*5	Min. 98 m/s² {10 G}
	Destructive*6	Min. 980 m/s² {100 G}
Vibration resistance	Functional*7	98 m/s² {10 G}, 10 to 55 Hz at double amplitude of 1.6 mm
	Destructive	117.6 m/s² {12 G}, 10 to 55 Hz at double amplitude of 2 mm
Conditions for operation, transport and storage*8 (Not freezing and condensing at low temperature)	Ambient temp.	–40°C to +70°C –40°F to +158°F
	Humidity	5 to 85% R.H.
Unit weight		PC board type: Approx. 7 g .25 oz TMP type: Approx. 8 g .28 oz

TYPICAL APPLICATIONS

- Microwave ovens
- Small household appliances
- Water heaters
- Electric irons
- Coffee makers

ORDERING INFORMATION

Ex. JG1aPFJ [TMPV] —— [24V]

Terminal shape	Coil voltage (DC)
Nil: PC board type TMPV: TMP Vertical type TMPH: TMP Horizontal type	5, 6, 9, 12, 18, 24 V

Note: Standard packing Carton: 100 pcs. Case: 500 pcs.
UL/CSA, VDE approved type is standard.

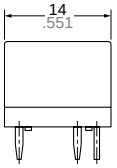
TYPES AND COIL DATA

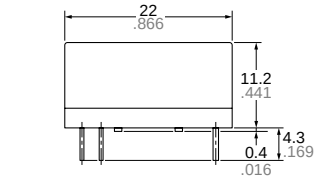
Part No.			Nominal voltage, V DC	Pick-up voltage, V DC (max.) (at 20°C 68°F)	Drop-out voltage, V DC (min.) (at20°C68°F)	Coil resistance, Ohm (±10%) (at 20°C 68°F)	Nominal operating current, mA (±10%) (at 20°C 68°F)	Nominal operating power, mW (at20°C68°F)	Max. allowable voltage, V DC (at70°C158°F)
PC board type	TMP vertical type	TMP horizontal type							
JG1aPFJ-5V	JG1aPFJ-TMPV-5V	JG1aPFJ-TMPH-5V	5	3.5	0.25	62.5	80	400	7.5
JG1aPFJ-6V	JG1aPFJ-TMPV-6V	JG1aPFJ-TMPH-6V	6	4.2	0.3	90	66.7	400	9
JG1aPFJ-9V	JG1aPFJ-TMPV-9V	JG1aPFJ-TMPH-9V	9	6.3	0.45	202	44.4	400	13.5
JG1aPFJ-12V	JG1aPFJ-TMPV-12V	JG1aPFJ-TMPH-12V	12	8.4	0.6	360	33.3	400	18
JG1aPFJ-18V	JG1aPFJ-TMPV-18V	JG1aPFJ-TMPH-18V	18	12.6	0.9	810	22.2	400	27
JG1aPFJ-24V	JG1aPFJ-TMPV-24V	JG1aPFJ-TMPH-24V	24	16.8	1.2	1,440	16.7	400	36

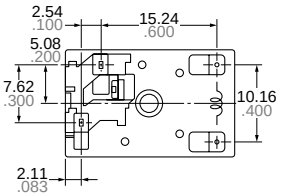
DIMENSIONS

mm inch

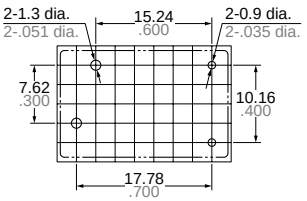
1. PC board type







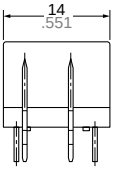
PC board pattern (Copper-side view)

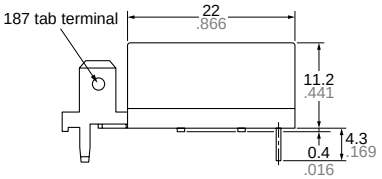


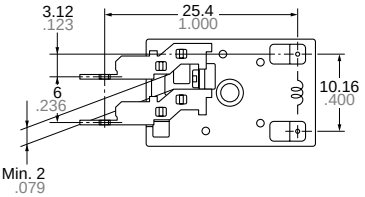
Tolerance: ±0.1 ±.004

Dimension:	General tolerance
Max. 1mm .039 inch:	±0.2 ±.008
1 to 5mm .039 to .118 inch:	±0.3 ±.012
Min. 5mm .118 inch:	±0.4 ±.016

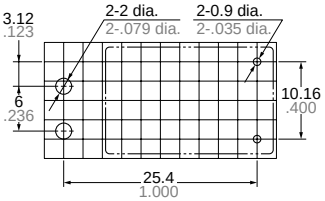
2. TMP vertical type



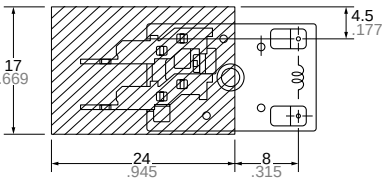




PC board pattern (Copper-side view)



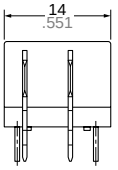
Tolerance: ±0.1 ±.004

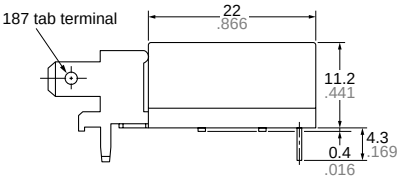


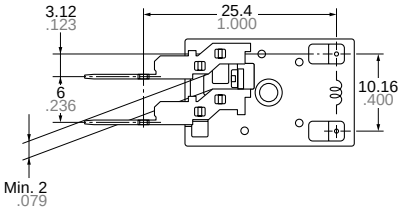
This product should only be used when there is no patterned metal surface (other than the terminal pattern) on the PC board facing the marked area ▨.

Dimension:	General tolerance
Max. 1mm .039 inch:	±0.2 ±.008
1 to 5mm .039 to .118 inch:	±0.3 ±.012
Min. 5mm .118 inch:	±0.4 ±.016

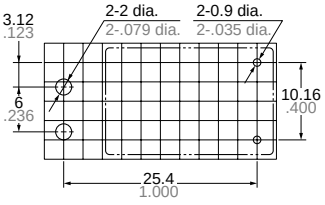
3. TMP horizontal type



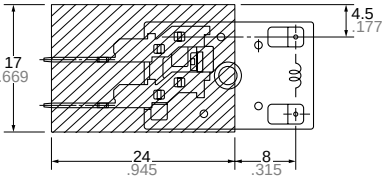




PC board pattern (Copper-side view)



Tolerance: ±0.1 ±.004



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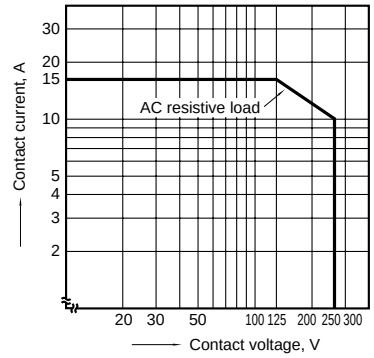
Dimension:	General tolerance
Max. 1mm .039 inch:	±0.2 ±.008
1 to 5mm .039 to .118 inch:	±0.3 ±.012
Min. 5mm .118 inch:	±0.4 ±.016

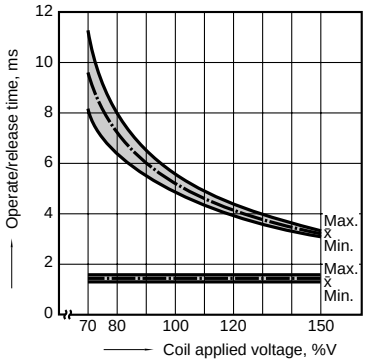
REFERENCE DATA

1. Max. switching capacity



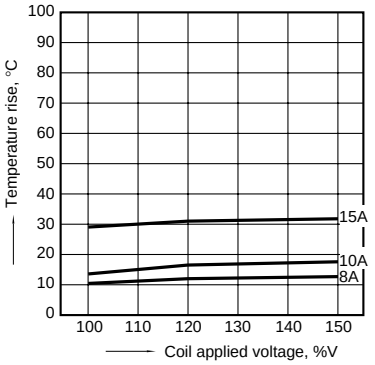
2. Operate/release time

Sample: JG1aPFJ-12V, 25 pcs.



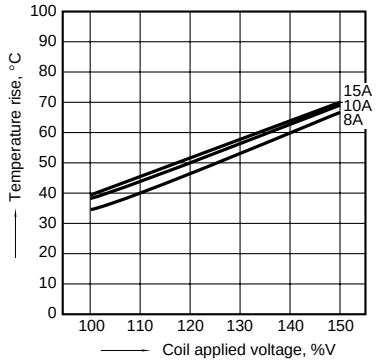
3.-(1) Temperature rise (at 20°C 68°F)

Sample: JG1aPFJ-24V, 25 pcs.
Point measured: Contact



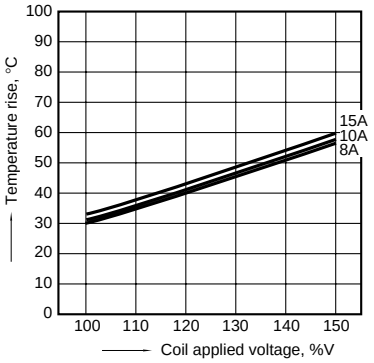
3.-(2) Temperature rise (at 20°C 68°F)

Sample: JG1aPFJ-24V, 16 pcs.
Point measured: Inside the coil



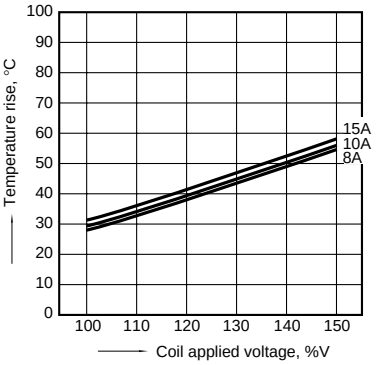
3.-(3) Temperature rise (at 60°C 140°F)

Sample: JG1aPFJ-24V, 6 pcs.
Point measured: Inside the coil



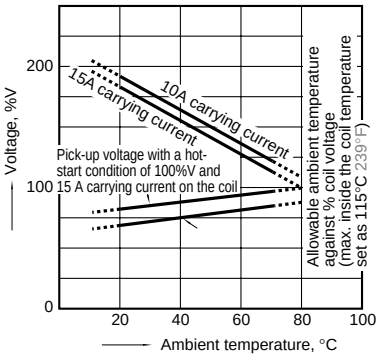
3.-(4) Temperature rise (at 80°C 176°F)

Sample: JG1aPFJ-24V, 6 pcs.
Point measured: Inside the coil



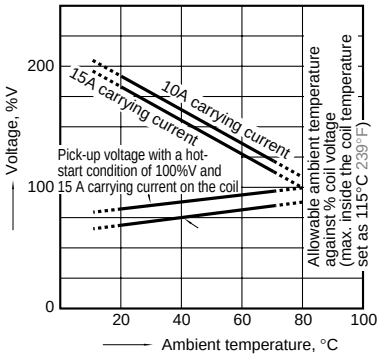
4. Ambient temperature characteristics

Sample: JG1aPFJ-24V
Contact current: 10A, 15A



5. Life curve

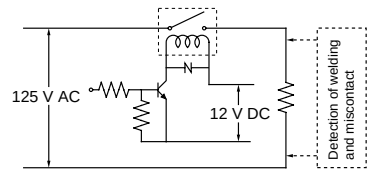
Operation frequency: 20 times/min.
(ON/OFF = 1.5 s : 1.5 s)
Ambient temperature: Room temperature



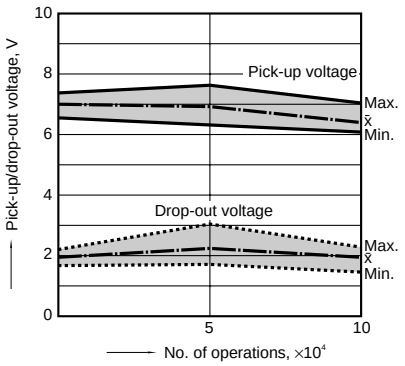
6. Electrical life test

Sample: JG1aPFJ-12V, 6 pcs.
Load: 15 A 125 V AC resistive load
Operating frequency: 20 cpm
Ambient temperature: Room temperature

Circuit



Change of pick-up and drop-out voltage



Change of contact resistance