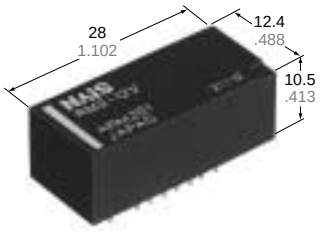
Discontinued

NAiS

4 GHz 2 FORM C MICROWAVE RELAY

RM-RELAYS



mm inch

- **Excellent high frequency characteristics**
  Isolation: Min. 40dB (at 4 GHz)
  Insertion loss Max. 1.0dB (at 4 GHz)
  V.S.W.R.: Max. 1.5 (at 4 GHz)
- **High sensitivity in small size**
  Size: 28.0 × 12.4 × 10.5 mm 1.102 × .488 × .413 inch
  Nominal operating power: 360 mW (single side stable type)
- **Sealed construction for automatic cleaning**
- **Latching types are also available**

SPECIFICATIONS

Contact

Arrangement		2 Form C
Initial contact resistance, max. (By HP4328A)		100 mΩ
Rating	Nominal switching capacity	0.01 A 24 V DC 10 W (at 1.2 GHz, Impedance 50Ω)
High frequency characteristics (Impedance 50Ω)	Isolation	Min. 40 dB (at 4 GHz)
	Insertion loss	Max. 1.0 dB (at 4 GHz)
	V.S.W.R.	Max. 1.5 (at 4 GHz)
Expected life (min. operations)	Mechanical	5×10^6
	Electrical (at 20 cpm)	3×10^5 (0.01 A 24 V DC) 1×10^5 (10 W at 1.2 GHz, Impedance 50Ω)

Coil (at 25°C, 68°F)

	Nominal operating power
Single side stable	360 mW
1 coil latching	250 mW
2 coil latching	500 mW

Remarks

* Specifications will vary with foreign standards certification ratings.
*1 Measurement at same location as "Initial breakdown voltage" section
*2 Detection current: 10mA
*3 Excluding contact bounce time
*4 Half-wave pulse of sine wave: 11ms, detection time: 10μs
*5 Half-wave pulse of sine wave: 6ms
*6 Detection time: 10μs

Characteristics

Max. operating speed (at rated load)		20 cpm
Initial insulation resistance*1		Min. 100 MΩ at 500 V DC
Initial breakdown voltage*2	Between open contacts	500 Vrms for 1 min.
	Between contact and coil	1,000 Vrms for 1 min.
	Between contact and earth terminal	500 Vrms for 1 min.
Operate time [Set time]*3 (at nominal voltage)		Approx. 6 ms [Approx. 3ms]
Release time (without diode)[Reset time]*3 (at nominal voltage)		Approx. 3 ms [Approx. 3ms]
Temperature rise		Max. 60°C with nominal coil voltage across coil and at nominal switching capacity
Shock resistance	Functional*4	Min. 98 m/s² {10 G}
	Destructive*5	Min. 980 m/s² {100 G}
Vibration resistance	Functional*6	10 to 55 Hz at double amplitude of 1.5 mm
	Destructive	10 to 55 Hz at double amplitude of 2 mm
Conditions for operation, transport and storage (Not freezing and condensing at low temperature)	Ambient temp.	–40°C to 60°C –40°F to 140°F
	Humidity	5 to 85% R.H.
Unit weight		Approx. 7 g .247 oz

TYPICAL APPLICATIONS

- Measuring equipment (Attenuator circuits)
- Audio visual equipment
- Communication equipment

ORDERING INFORMATION

Ex. RM [2] [L2] [24V]

Contact arrangement	Operating function	Coil voltage (DC)
2:2 Form C	Nil: Single side stable L: 1 coil latching L2: 2 coil latching	3, 4.5, 5, 6, 9, 12, 24 V

Note: Standard packing; Carton: 20 pcs. Case 200 pcs.

TYPES ANE COIL DATA (at 20°C 68°F)

• Single side stable type

Part No.	Nominal voltage, V DC	Pick-up voltage, max. V DC	Drop-out voltage, min. V DC	Coil resistance, Ω (±10%)	Nominal operating current, mA	Nominal operating power, mW	Max. allowable voltage, V DC (at 60°C 140°F)
RM2-3V	3	2.25	0.3	25	120	360	3.3
RM2-4.5V	4.5	3.375	0.45	56	80	360	4.95
RM2-5V	5	3.75	0.5	69	72	360	5.5
RM2-6V	6	4.5	0.6	100	60	360	6.6
RM2-9V	9	6.75	0.9	225	40	360	9.9
RM2-12V	12	9	1.2	400	30	360	13.2
RM2-24V	24	18	2.4	1,600	15	360	26.4

• 1 coil latching type

Part No.	Nominal voltage, V DC	Set voltage, max. V DC	Reset voltage, max. V DC	Coil resistance, Ω (±10%)	Nominal operating current, mA (±10%)	Nominal operating power, mW	Max. allowable voltage, V DC (at 60°C 140°F)
RM2-L-3V	3	2.25	2.25	36	83.3	250	3.3
RM2-L-4.5V	4.5	3.375	3.375	81	55.6	250	4.95
RM2-L-5V	5	3.75	3.75	100	50	250	5.5
RM2-L-6V	6	4.5	4.5	144	41.7	250	6.6
RM2-L-9V	9	6.75	6.75	324	27.8	250	9.9
RM2-L-12V	12	9	9	576	20.8	250	13.2
RM2-L-24V	24	18	18	2,304	10.4	250	26.4

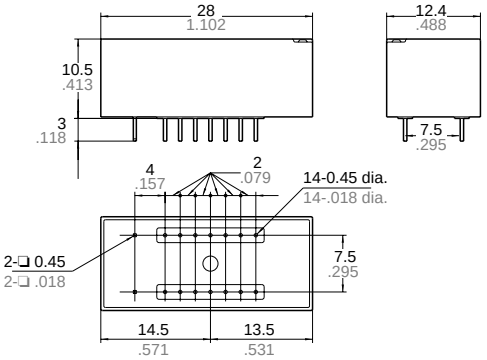
• 2 coil latching type

Part No.	Nominal voltage, V DC	Set voltage, max. V DC	Reset voltage, max. V DC	Coil resistance, Ω (±10%)		Nominal operating current, mA (±10%)		Nominal operating power, mW		Max. allowable voltage, V DC (at 60°C 140°F)
				Set coil	Reset coil	Set coil	Reset coil	Set coil	Reset coil	
RM2-L2-3V	3	2.25	2.25	18	18	166.7	166.7	500	500	3.3
RM2-L2-4.5V	4.5	3.375	3.375	40.5	40.5	111.1	111.1	500	500	4.95
RM2-L2-5V	5	3.75	3.75	50	50	100	100	500	500	5.5
RM2-L2-6V	6	4.5	4.5	72	72	83.3	83.3	500	500	6.6
RM2-L2-9V	9	6.75	6.75	162	162	55.6	55.6	500	500	9.9
RM2-L2-12V	12	9	9	288	288	41.7	41.7	500	500	13.2
RM2-L2-24V	24	18	18	1,152	1,152	20.8	20.8	500	500	26.4

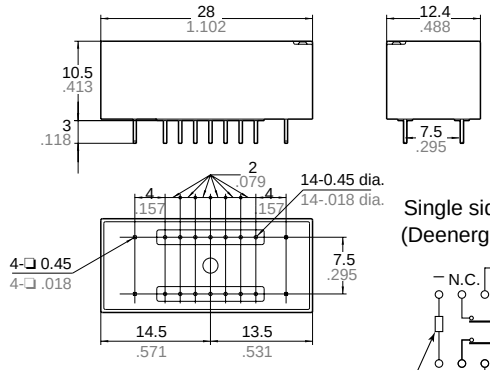
DIMENSIONS

mm inch

Single side stable and 1 coil latching



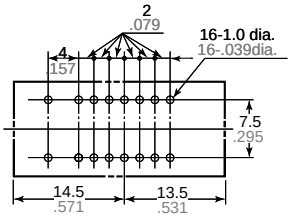
2 coil latching



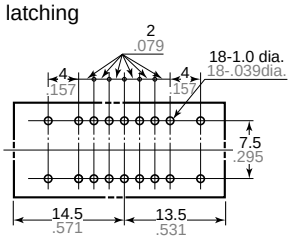
General tolerance: ±0.3 ±.012

PC board pattern (Bottom view)

Single side stable and 1coil latching



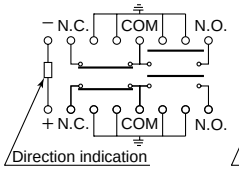
2 coil latching



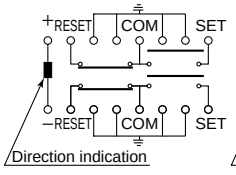
Tolerance: ±0.3 ±.012

Schematic (Bottom view)

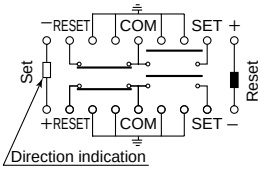
Single side stable (Deenergized condition)



1 coil latching (Reset condition)

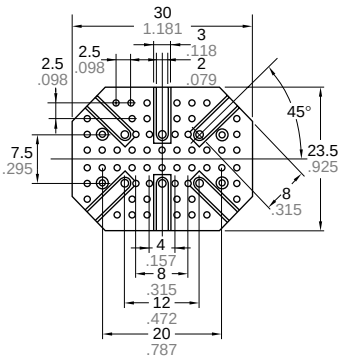


2 coil latching (Reset condition)

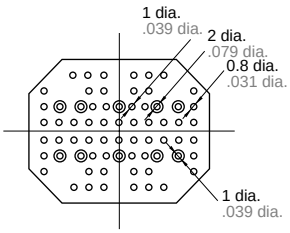


REFERENCE DATA

1. High frequency characteristics
Sample: RM2-12V
Measuring method: Impedance 50 Ω



(Wiring diagram)

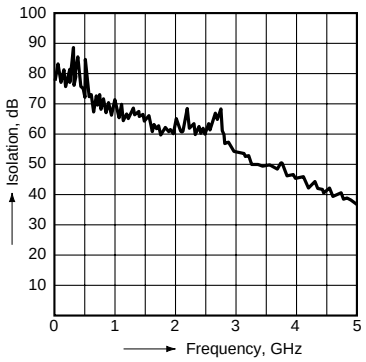


mm inch

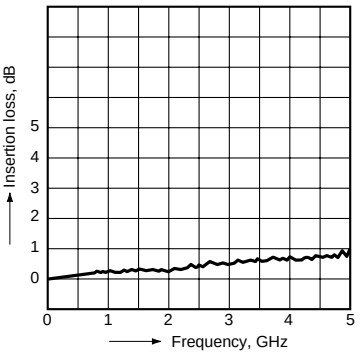
PC board
- Double-sided through hole
- Material: Glass-PTFE

Tolerance: ±0.1 ±.004

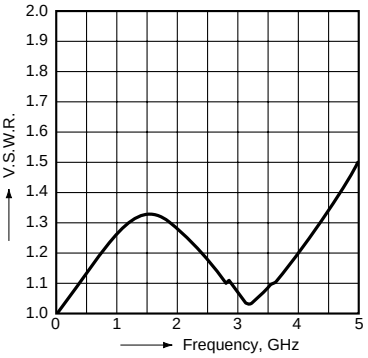
• Isolation



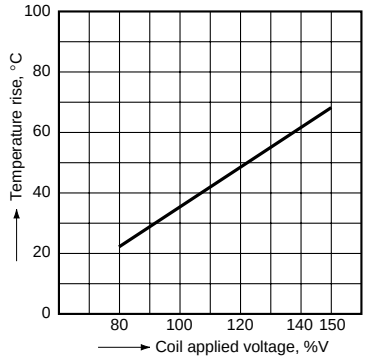
• Insertion loss



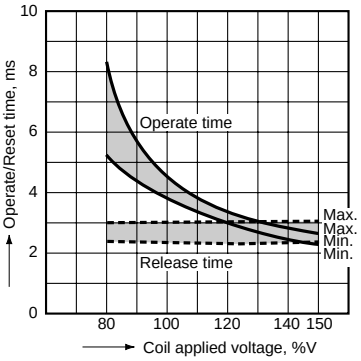
• V.S.W.R.



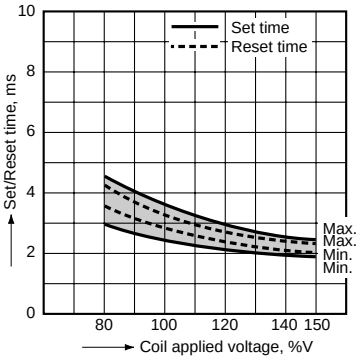
2. Coil temperature rise
Sample: RM2-12V; No. of samples: n = 5
Carrying current: 10 mA
Point measured: Inside the coil
Ambient temperature: 27 to 28°C 80.6 to 82.4°F



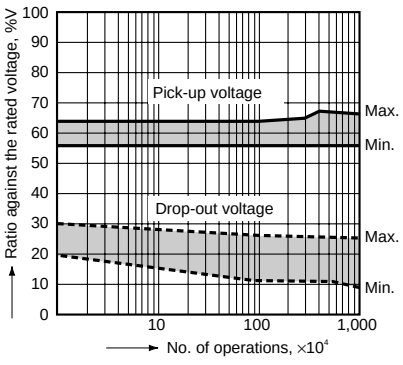
3.-(1) Operate/Release time
(Single side stable)
Sample: RM2-12V; No. of samples: n = 6



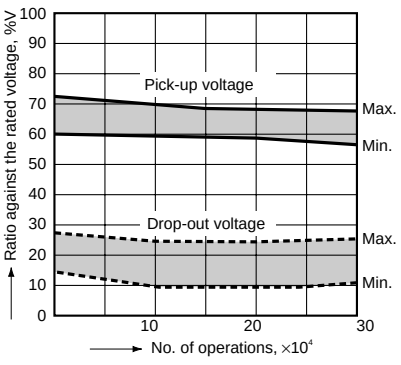
3.-(2) Set/Reset time (Latching)
Sample: RM2-L2-5V
No. of samples: n = 5



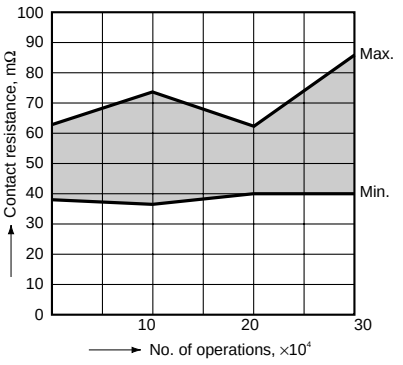
4. Mechanical life test
Sample: RM2-12V; No. of samples: n = 10



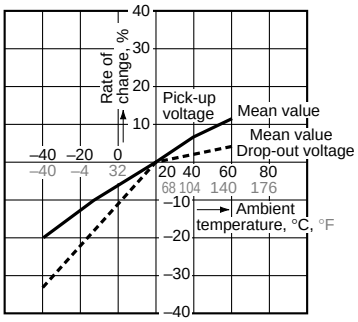
5. Electrical life test (0.01 A 24 V DC)
Sample: RM2-5V; No. of samples: n = 6
Change of pick-up and drop-out voltage



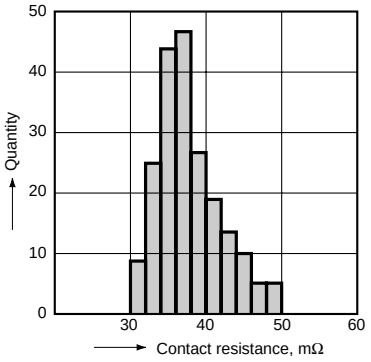
Change of contact resistance



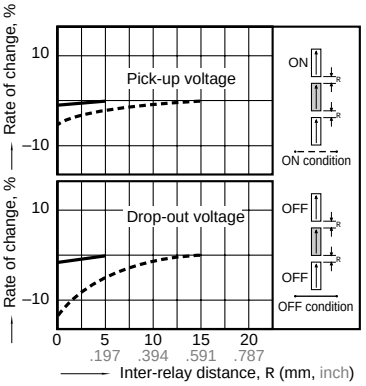
6. Ambient temperature characteristics
Sample: RM2-12V; No. of samples: n = 5



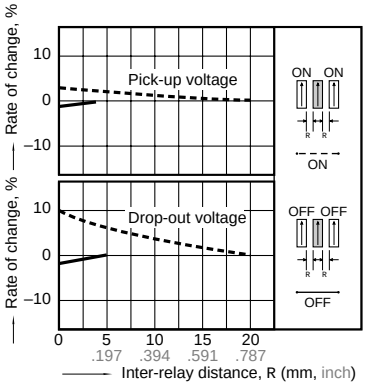
7. Contact resistance distribution (initial)
Sample: RM2-12V
No. of samples: n = 50 (50 ¥ 4 contacts)



8.-(1) Influence of adjacent mounting



8.-(2) Influence of adjacent mounting



NOTE

1. Soldering

Soldering should be done under the following conditions.

Temperature	260°C 500°F	350°C 662°F
Time	Within 10 s	Within 3 s

For Cautions for Use, see Relay Technical Information in catalog.