

\*Rating is 6 GHz. Please refer to "REFERENCE DATA" regarding usage between 6 and 8 GHz.

New



Protective construction: Flux-resistant type

RoHS compliant

### FEATURES

1. 150 W carrying power possible (at 2GHz)
2. Excellent high frequency characteristics  
Low insertion loss: Max. 0.12 dB (at 2GHz)
3. Miniature size and Surface mount (SMD) type  
L: 9.6 × W: 14.6 × H: 10 mm  
L: .378 × W: .575 × H: .394 inch

### TYPICAL APPLICATIONS

- Base stations (Transmitter section) Mobile phone, terrestrial digital, etc.
  - Measuring equipment market Spectrum analyzer and oscilloscope, etc.
  - Other applications High-frequency amp switching in wireless devices, etc.
- If you wish to use in applications with low level loads or with high frequency switching, please consult us.

## ORDERING INFORMATION

ARN	<input type="checkbox"/>	<input type="checkbox"/>	A	<input type="checkbox"/>	<input type="checkbox"/>
Contact arrangement	1: 1 Form C standard contact type 3: 1 Form C reversed contact type (single side stable type only)				
Operating function	0: Single side stable type 2: 2 coil latching type				
Terminal shape	A: Surface mount terminal				
Coil voltage, DC*	4H: 4.5 V, 12: 12 V, 24: 24 V (H=0.5) * For 28 V type, please consult us.				
Packing style	Nil: Carton packing X: Tape and reel packing (picked from 1 pin side) Z: Tape and reel packing (picked from 13 pin side)				

## TYPES

### 1. Single side stable type

Contact arrangement	Nominal coil voltage	Part No.	
		Standard contact type	Reversed contact type
1 Form C	4.5 V DC	ARN10A4H	ARN30A4H
	12 V DC	ARN10A12	ARN30A12
	24 V DC	ARN10A24	ARN30A24

Standard packing: 50 pcs. in an inner package (carton); 500 pcs. in an outer package

### 2. 2 coil latching type

Contact arrangement	Nominal coil voltage	Part No.
		Standard contact type
1 Form C	4.5 V DC	ARN12A4H
	12 V DC	ARN12A12
	24 V DC	ARN12A24

Standard packing: 50 pcs. in an inner package (carton); 500 pcs. in an outer package

### 3. Single side stable type

Contact arrangement	Nominal coil voltage	Part No.	
		Standard contact type	Reversed contact type
1 Form C	4.5 V DC	ARN10A4H□	ARN30A4H□
	12 V DC	ARN10A12□	ARN30A12□
	24 V DC	ARN10A24□	ARN30A24□

Standard packing: 400 pcs. in an inner package (tape and reel); 800 pcs. in an outer package

\* Please add an X (picked from 1 pin side) or Z (picked from 13 pin side) at the end of the part number when ordering.

\* Packing style symbol "X", "Z" is not marked on the relay.

# RN (ARN)

## 4. 2 coil latching type

Contact arrangement	Nominal coil voltage	Part No.
		Standard contact type
1 Form C	4.5 V DC	ARN12A4H□
	12 V DC	ARN12A12□
	24 V DC	ARN12A24□

Standard packing: 400 pcs. in an inner package (tape and reel); 800 pcs. in an outer package

\* Please add an X (picked from 1 pin side) or Z (picked from 13 pin side) at the end of the part number when ordering.

\* Packing style symbol "X", "Z" is not marked on the relay.

## RATING

### 1. Coil data

#### 1) Single side stable type

Nominal coil voltage	Pick-up voltage (at 20°C 68°F)	Drop-out voltage (at 20°C 68°F)	Nominal operating current [±10%] (at 20°C 68°F)	Coil resistance [±10%] (at 20°C 68°F)	Nominal operating power	Max. applied voltage (at 85°C 185°F)
4.5 V DC	75%V or less of nominal voltage (Initial)	10%V or more of nominal voltage (Initial)	71.1 mA	63.3Ω	320 mW	110%V of nominal voltage
12 V DC			26.7 mA	450 Ω		
24 V DC			13.3 mA	1,800 Ω		

#### 2) 2 coil latching type

Nominal coil voltage	Set voltage (at 20°C 68°F)	Reset voltage (at 20°C 68°F)	Nominal operating current [±10%] (at 20°C 68°F)	Coil resistance [±10%] (at 20°C 68°F)	Nominal operating power	Max. applied voltage (at 85°C 185°F)
4.5 V DC	75%V or less of nominal voltage (Initial)	75%V or less of nominal voltage (Initial)	88.9 mA	50.6Ω	400 mW	110%V of nominal voltage
12 V DC			33.3 mA	360 Ω		
24 V DC			16.7 mA	1,440 Ω		

## 2. Specifications

Characteristics	Item	Specifications
Contact	Arrangement	1 Form C
	Contact material	Gold plating
	Contact resistance (Initial)	Max. 100 mΩ (By voltage drop 10 V AC 10mA)
Rating	Nominal switching capacity	80W (at 2 GHz, Impedance 50Ω, V.S.W.R. Max.1.15)
	Contact carrying power (CW)*1	Max.150W (at 20°C 68°F) (at 2 GHz, Impedance 50Ω, V.S.W.R. Max.1.15, with heat sink) Max.100W (at 20°C 68°F) (at 2 GHz, Impedance 50Ω, V.S.W.R. Max.1.15, without heat sink)
	Nominal operating power	Single side stable type: 320 mW, 2 coil latching type: 400 mW
High frequency characteristics (to 6 GHz)	V.S.W.R. (Max.)	to 1 GHz: 1.1, 1 to 2 GHz: 1.15, 2 to 3 GHz: 1.2, 3 to 6 GHz: 1.3
	Insertion loss (without D.U.T. board's loss, dB, Max.)	0.1, 0.12, 0.15, 0.5
	Isolation (dB, Min.)	60, 55, 45, 30
	Insulation resistance (Initial)	Min. 1,000 MΩ (at 500V DC, Measurement at same location as "Breakdown voltage" section.)
Electrical characteristics	Breakdown voltage (Initial)	Between open contacts: 500 AC Vrms for 1min. (Detection current: 10mA)
		Between contact and earth terminal: 500 AC Vrms for 1min. (Detection current: 10mA)
		Between contact and coil: 500 AC Vrms for 1min. (Detection current: 10mA)
	Operate time [Set time] (at 20°C 68°F)	Max. 5 ms (Nominal voltage applied to the coil, excluding contact bounce time)
Release time [Reset time] (at 20°C 68°F)	Single side stable type: Max. 5 ms (Nominal voltage applied to the coil, excluding contact bounce time)*2 2 coil latching type: Max. 5 ms (Nominal voltage applied to the coil, excluding contact bounce time)	
Mechanical characteristics	Shock resistance	Functional: Min. 490 m/s <sup>2</sup> (Half-wave pulse of sine wave: 11 ms, detection time: 10 μs)
		Destructive: Min. 980 m/s <sup>2</sup> (Half-wave pulse of sine wave: 6 ms)
	Vibration resistance	Functional: 10 to 55 Hz at double amplitude of 3 mm .118 inch (Detection time: 10 μs)
		Destructive: 10 to 55 Hz at double amplitude of 5 mm .197 inch
Expected life	Mechanical life	Min. 1×10 <sup>6</sup> (at 180 cpm)
	Electrical life (at 20 cpm)	• 1×10 <sup>6</sup> ope. at 10mA 10 VDC resistive load, • 1×10 <sup>6</sup> ope. at 1W High frequency load (at 2 GHz, Impedance 50Ω, V.S.W.R. Max.1.15), • 1×10 <sup>3</sup> ope. at 80 W High frequency load, operating frequency 5.0s ON, 5.0s OFF (at 2 GHz, Impedance 50Ω, V.S.W.R. Max.1.15, at 20°C 68°F, with heatsink)
Conditions	Conditions for operation, transport and storage	Ambient temperature: -40 to +85°C -40 to +185°F, Humidity: 5 to 85% R.H. (Not freezing and condensing at low temperature)
Unit weight		Approx. 2.5 g .088 oz

Notes: \*1. Since the design of the PC board and heat dispersion conditions affect contact carrying power, please verify under actual conditions.

\*2. Release time will lengthen if a diode, etc., is connected in parallel to the coil. Be sure to verify operation under actual conditions.