318

Features

- ☐ Compact size miniature PCB relays.
- ☐ High temperature endurance up to 125°C.
- ☐ IR-Reflow process compatible (special version).
- ☐ RoHS Compliant; ELV Compliant.

Type List

◆ Standard type

Terminal style	Contact form	Designation (provided with)	
		Flux tight	Sealed type
PCB terminal	1A (SPNO)	318R-1AH-C	318R-1AH-V
	1C (SPDT)	318R-1CH-C	318R-1CH-V

◆ High power type

Terminal style	Contact form	Designation (provided with)	
		Flux tight	Sealed type
PCB terminal	1A (SPNO)	318HR-1AH-C	318HR-1AH-V
	1C (SPDT)	318HR-1CH-C	318HR-1CH-V

◆ Extra type

Terminal style	Contact form	Designation (provided with)	
		Flux tight	Sealed type
PCB terminal	1A (SPNO)	318ER-1AH-C	318ER-1AH-V

Type List

318 ☐ R - 1A H - C ☐

1 2 3 4 5 6 7

1. 318 -- Basic series designation

2. Blank -- Standard type
   H -- High power type
   E -- Extra type

3. R -- IR reflow type

4. 1A -- Single pole normally open
   1C -- Single pole double throw

5. H -- Contact material AgSnO

6. C -- Flux tight
   V -- Sealed type

7. ☐ -- Coil voltage (please refer to the coil rating data for the availability)

Contact Rating

Load type	318	318H	318E
Rated current	NO: 40A/14VDC at 25°C 30A/14VDC at 85°C 20A/14VDC at 125°C NC: 20A/14VDC at 25°C	NO: 45A/14VDC at 25°C 25A/14VDC at 125°C NC: 20A/14VDC at 25°C	50A/14VDC at 25°C 25A/14VDC at 125°C

Resistive load(1)	NO : 35A 14VDC, On 2s /Off 2s, 100K ops. NC : 20A 14.5VDC On 2s /Off 2s, 100K ops.	NO : 45A 14VDC, On 2s /Off 2s, 100K ops. NC : 20A 14VDC On 2s /Off 2s, 100K ops.	NO : 50A 14VDC, On 2s / Off 2s, 100K ops.
Motor load(1)	Inrush current: 97A Steady current: 25A 14VDC On 2s /Off 2s, 250K ops.	Inrush current: 120A Steady current: 30A 14VDC On 1s /Off 3s, 100K ops.	Inrush current: 160A Steady current: 42A 14VDC On 2s /Off 2s, 80K ops.
Lamp load(1)	Inrush current: 100A Steady current: 20A 14VDC On 2s /Off 2s, 100K ops.	----	----
Max. carry current(2)	54A 30 min 80A 1 min 240A 1 sec.	67.5A 30 min 100A 1 min 300A 1 sec.	81A 30 at min 120A 1 min 360A 1 sec.

Note : (1) Temperature -40～+ 125°C.
(2) Operating at room temperature.

Coil Rating (DC)

◆ Standard type

Rated voltage (V)	Rated current ±10 % at 23°C (mA)	Coil resistance ±10 % at 23°C (Ω)	Max.continuous voltage at 125°C	Pick up voltage (Max.) at 23°C	Drop out voltage (Min.) at 23°C	Power consumption at rated voltage
12	75	160	14V	7.2V	0.6V	Approx. 0.9W

◆ High power type

Rated voltage (V)	Rated current ±10 % at 23°C (mA)	Coil resistance ±10 % at 23°C (Ω)	Max.continuous voltage at 125°C	Pick up voltage (Max.) at 23°C	Drop out voltage (Min.) at 23°C	Power consumption at rated voltage
12	53	225	14V	7.2V	0.6V	Approx. 0.64W

◆ Extra type

Rated voltage (V)	Rated current ±10 % at 23°C (mA)	Coil resistance ±10 % at 23°C (Ω)	Max.continuous voltage at 125°C	Pick up voltage (Max.) at 23°C	Drop out voltage (Min.) at 23°C	Power consumption at rated voltage
12	71	168	14V	7.2V	0.6V	Approx. 0.86W

Specification

Contact material	AgSnO alloy	
Contact voltage drop(1)	Typ. 30mV at 10A	
Contact resistance(1)	Max.100mΩ at 1A	
Operate time(1)	10 ms Max.	
Release time(1)	10 ms Max.	
Insulation resistance(1)	100 MΩ Min. (DC 500V)	
Dielectric strength(1)	Between open contact : AC 500V, 50/60Hz 1 min.	
	Between contact and coil : AC 500V, 50/60Hz 1 min.	
Vibration resistance	Operating extremes	10~500Hz, 4.4G
	Damage limits	10~500Hz, 4.4G
Shock resistance	Operating extremes	10G
	Damage limits	100G
Life expectancy	Mechanical	1,000,000 ops. (frequency 18,000 ops./hr)
Operating ambient temperature	-40～+125°C (no freezing)	
Weight	Approx. 9 g	

Note : (1) Initial value. Operate and release time excluding contact bounce.

(2) Unless otherwise specified, all tests are under room temperature and humidity.

(3) Consider the heat of PCB is necessary, please check the actual condition of PCB.

(4) Applying no diode to this relay. The life expectancy will be lower when a diode is used. To use a varistor (ZNR) could absorb the coil surge of relay that is recommended.

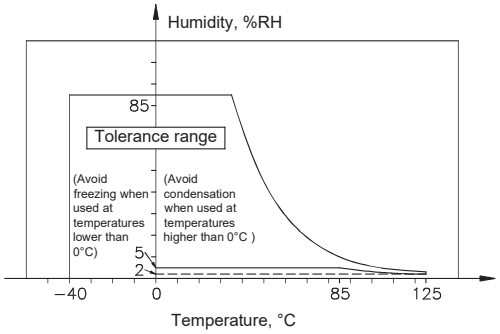
(5) Do not use the relay exceeding the coil rating, contact rating and life expectancy, or this may cause the risk of overheating.

(6) To assure optimum performance, avoid the relay from dropping, hitting, or other unnecessary shocks.

(7) Flux tight version is recommended. If there is cleaning process and sealed type is selected, the vent-hole should be removed after the process.

(8) Usage, transport and storage conditions

- 1. Temperature: -40 ~ +125°C
- 2. Humidity: 5 to 85% R.H
- 3. Pressure: 86 to 106 kPa
- Furthermore, the humidity range varies with the temperature. So, use relays within the range indicated in the graph below



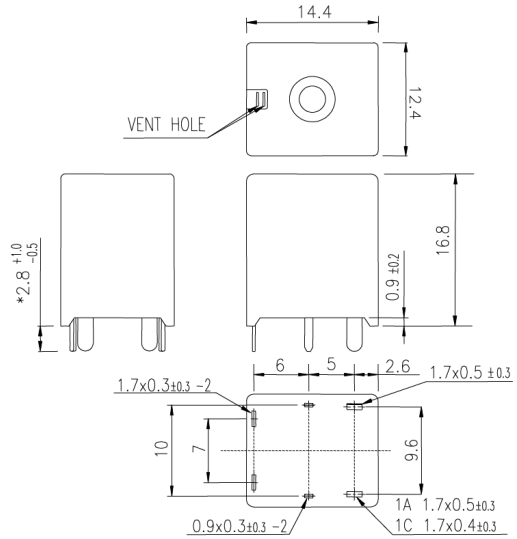
(The allowable temperature range differs for each relay.)

(9) Please pay attention to the phenomenon of freezing in the low temperature environment below 0°C,
Please evaluate the actual use of the environment.

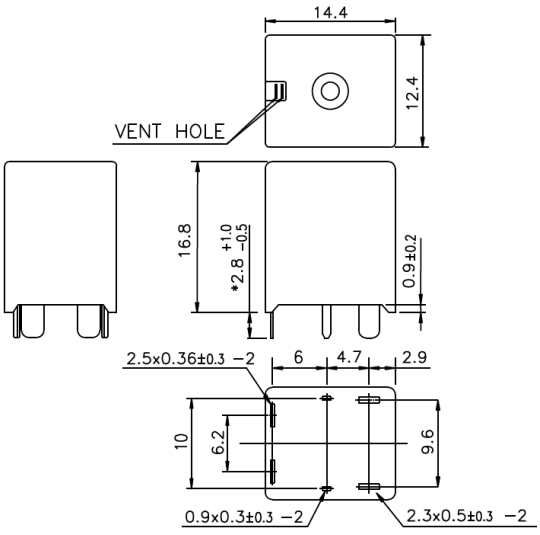
(10) Please contact Song Chuan for the detailed information.

Outline Dimensions

◆318 & 318H



◆318E



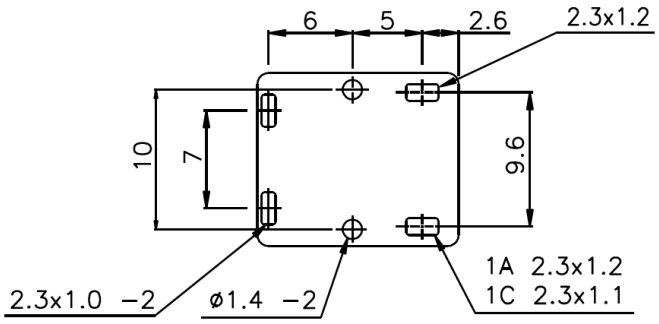
TOLERANCE:
LESS THAN: 1(0.039) ±0.1(0.004)
5(0.197) ±0.3(0.012)
20(0.787) ±0.5(0.020)
MORE THAN: 20(0.787) ±1(0.039)

Note : (1) Dimensions of terminal is width x thickness.
(2) Except "*" mark dimension, the rest terminal dimensions of the outline drawing are the size before soldering. (It will become larger after soldering)

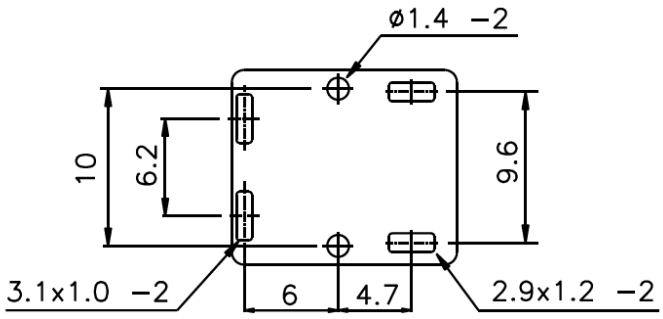
Wiring Diagram
(Bottom view)

PC Board Layout
(Bottom view)

◆318 & 318H



◆318E



TOLERANCE: ±0.1(0.004)