303



Features

- ☐ Ultra Micro 280 automotive relay.
- ☐ SPNO contact configuration.
- ☐ Switch up to 20A resistive load, 100,000 ops., 23°C.
- ☐ Operating ambient temperature -40℃ to 125°C.
- ☐ Optional resistor or diode for coil transient suppression.
- ☐ Complies with RoHS-Directive 2011/65/EU and ELV-Directive 2000/53/EC.

Type List

Terminal style	Contact form	Designation (provided with)	Enclosure style	
			Flux tight	Sealed type washable
Socket terminal	1A (SPNO)	----------	303-1AH-C	303-1AH-S
		Resistor	303-1AH-C-R1	303-1AH-S-R1
		Diode	303-1AH-C-D1	303-1AH-S-D1

Ordering Information

303 - 1A H - C - ☐ ☐

1 2 3 4 5 6

1. 303 -- Basic series designation
2. 1A -- Single pole normally open
3. H -- Contact material AgSnO
4. C -- Flux tight
   S -- Sealed type washable
5. Blank -- Standard type
   R1 -- Coil parallel with 1/2W resistor for 12V 1.1KΩ, 24V 4.3KΩ
   D1 -- Coil parallel with diode 1N4007 the diode anode on # 85 terminal
6. ☐ -- Coil voltage (please refer to the coil rating data for the availability)

Contact Rating

Resistive load	20A 14VDC, 10A 28VDC, On 2s / Off 2s, 100K ops.
Motor load	16A 14VDC, Inrush 80A, On 2s / Off 5s, at -30～+80°C, 300K ops.
Lamp load	16A 14VDC, Inrush 80A, On 3s / Off 3s, at -30～+100°C, 100K ops.

Coil Rating (DC)

Rated voltage	Rated current ±10 % at 23°C		Coil resistance ±10 % at 23°C		Max. continuous voltage at 85°C (1)	Pick up voltage (Max.) at 23°C	Drop out voltage (Min.) at 23°C	Power consumption at rated voltage	
	without resistor	with resistor	without resistor	with resistor				without resistor	with resistor
12V	80 mA	91 mA	150 Ω	132 Ω	133 % of rated voltage	60 % of rated voltage	8 % of rated voltage	approx. 0.96W	approx. 1.09W
24V	40 mA	46 mA	600 Ω	527 Ω					

Note : (1) With continuous contact current 20A.

Specification

Contact material	AgSnO alloy	
Contact voltage drop (1)	Typ. 50mV at 10A	
Operate time (1)	10 ms Max.	
Release time (1)	10 ms Max.	
Insulation resistance (1)	20 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 , 5.0G
	Damage limits	10～500Hz , 5.0G
Shock resistance	Operating extremes	10G
	Damage limits	100G
Life expectancy	Mechanical	10,000,000 ops. (frequency 18,000 ops./hr)
Operating ambient temperature	-40 ~ +125°C (no freezing)	
Weight	Approx. 20 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) Do not use the relay exceeding the coil rating, contact rating and life expectancy, or this may cause the risk of overheating.

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

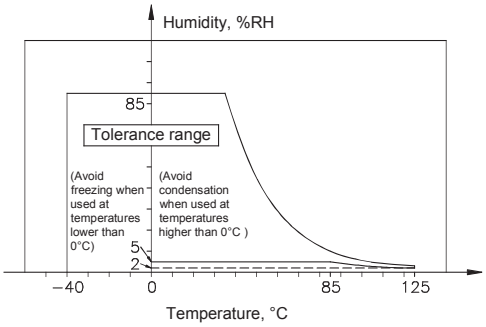
(5) Do not switch the contacts without any load as the contact resistance may become increased rapidly.

(6) Use suitable harnesses and bus bars according to the current as below：

20A type：Min. 3.0mm^2

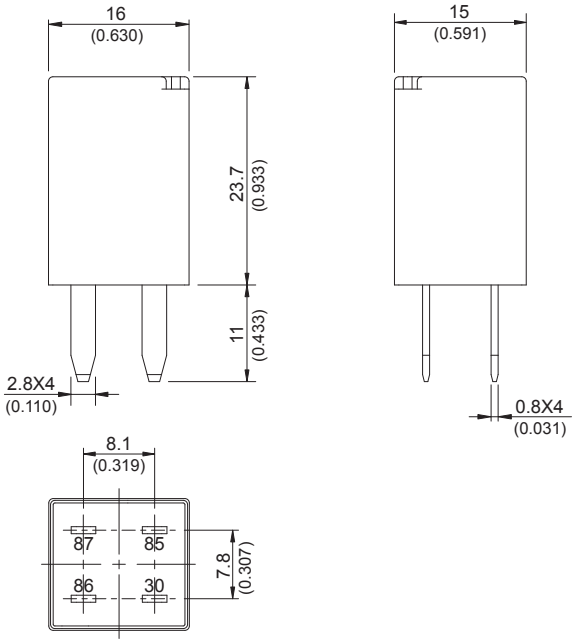
(7) Usage, transport and storage conditions

- 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.



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

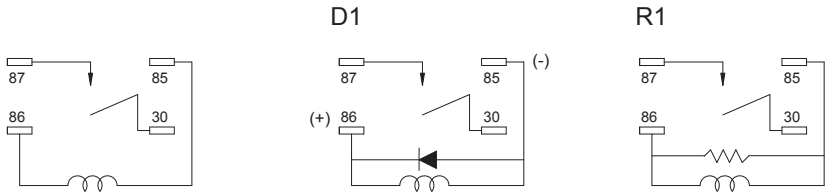
Outline Dimensions



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)

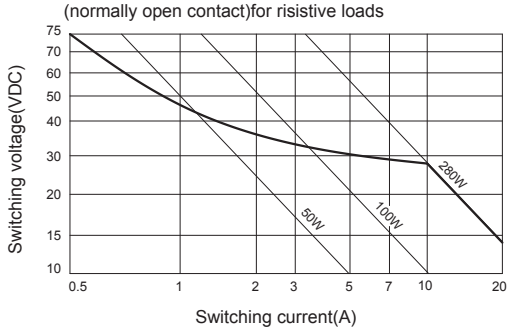
Wiring Diagram

BOTTOM VIEW

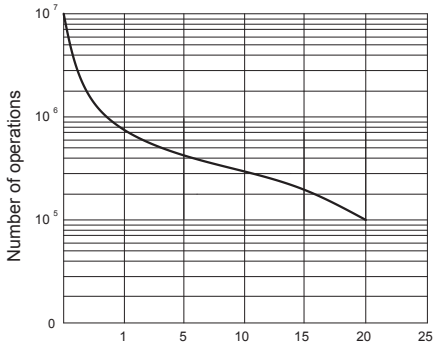


Engineering Data

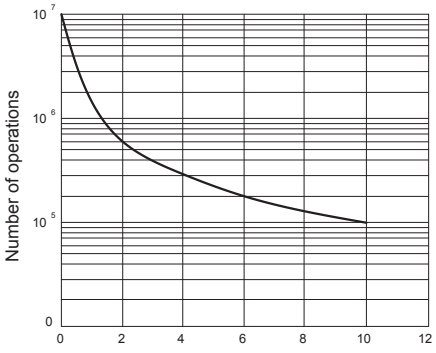
Safe breaking,arc extinguished
(normally open contact)for risistive loads



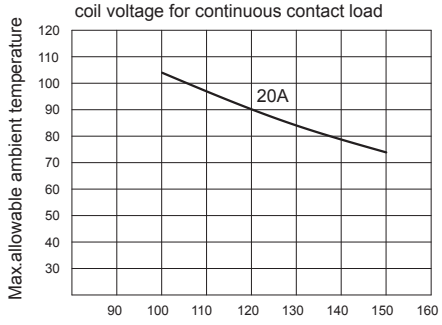
Life expectancy



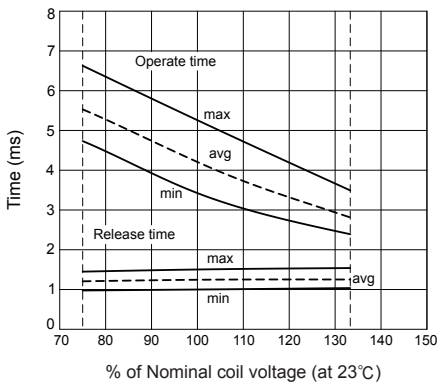
Life expectancy



Ambient temperature vs.
coil voltage for continuous contact load



Operate time/Release time



All specifications subject to change. Please contact Song Chuan for update.

Mouser Electronics

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Song Chuan:
303-1AH-C-R1-12VDC