



### »» Features

- Micro 280 automotive relay.
- SPNO & SPDT contact configurations.
- NO contacts switch 35A resistive load, NC contacts switch 20A resistive load, 100,000 ops., 23°C.
- Operating ambient temperature -40°C 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		
			Dust cover	Flux tight	Sealed type washable
Socket terminal	1A (SPNO)	-----	301-1A-D	301-1A-C	301-1A-S
		Resistor	301-1A-D-R1	301-1A-C-R1	301-1A-S-R1
		Diode	301-1A-D-D1	301-1A-C-D1	301-1A-S-D1
	1C (SPDT)	-----	301-1C-D	301-1C-C	301-1C-S
		Resistor	301-1C-D-R1	301-1C-C-R1	301-1C-S-R1
		Diode	301-1C-D-D1	301-1C-C-D1	301-1C-S-D1

### »» Ordering Information

301 - 1A - D -    
 1        2        3        4        5

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|--|--|
| <p>1. 301 -- Basic series designation</p> <p>2. 1A -- Single pole normally open<br/>1C -- Single pole double throw</p> <p>3. D -- Dust cover<br/>C -- Flux tight<br/>S -- Sealed type washable</p> | <p>4. Blank -- Standard type<br/>R1 -- Coil parallel with 1/2W resistor for 6V 180Ω, 12V 680Ω, 24V 2700Ω<br/>D1 -- Coil parallel with diode 1N4007 the diode anode on # 85 terminal</p> <p>5. <input type="checkbox"/> -- Coil voltage (please refer to the coil rating data for the availability)</p> |
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### »» Contact Rating

Resistive load	1A	1C
	35A 14VDC 15A 28VDC	NO: 35A 14VDC, 15A 28VDC NC: 20A 14VDC, 10A 28VDC

### »» Coil Rating (DC)

Rated voltage	Rated current ±10 % at 23°C		Coil resistance ±10 % at 23°C		Max. continuous voltage at 85°C <sup>(1)</sup>	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
6V	188 mA	222 mA	32 Ω	27 Ω	133 % of rated voltage	60 % of rated voltage	10 % of rated voltage	approx. 1.2W	approx. 1.4W
12V	98 mA	115 mA	123 Ω	104 Ω					
24V	50 mA	59 mA	483 Ω	410 Ω					

Note : (1) With continuous contact current 15A.

## »» Specification

Contact material	AgSnO alloy	
Contact voltage drop <sup>(1)</sup>	Typ. 40mV at 10A	
Operate time <sup>(1)</sup>	10ms Max.	
Release time <sup>(1)</sup>	10ms Max.	
Insulation resistance <sup>(1)</sup>	20MΩ Min. (DC 500V)	
Dielectric strength <sup>(1)</sup>	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.)
	Electrical	100,000 ops. (frequency 1,800 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.

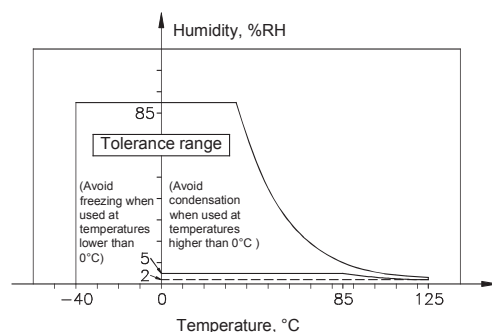
(6) Flux tight version is recommended. If there is cleaning process and sealed type is selected, the vent-hole should be removed after the process.

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

25A type : Min. 6.0mm<sup>2</sup>

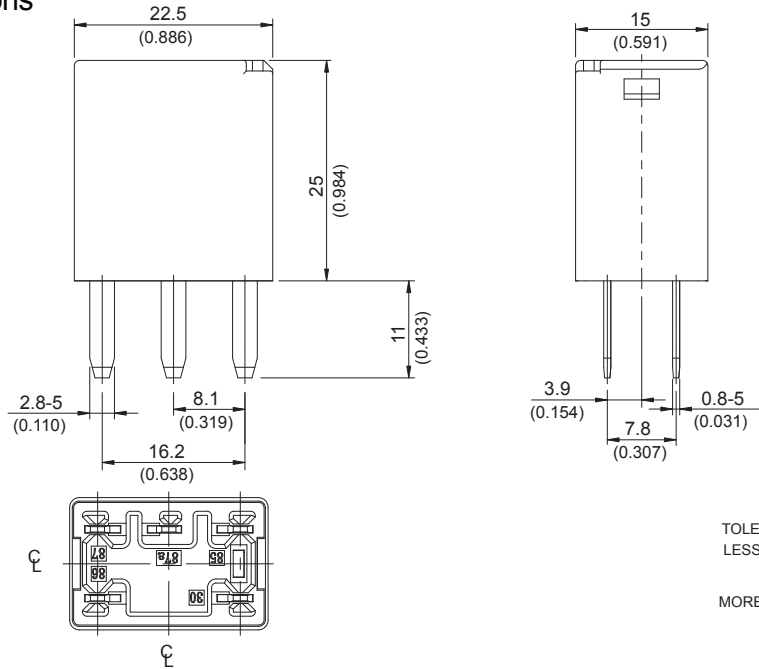
(8) Usage, transport and storage conditions

- 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.



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

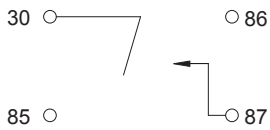
### »» Outline Dimensions



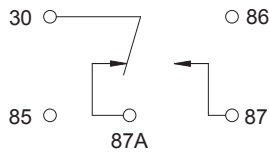
### »» Wiring Diagram

BOTTOM VIEW

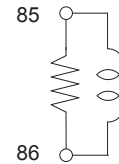
1A



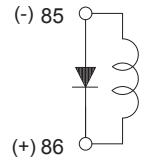
1C



R1

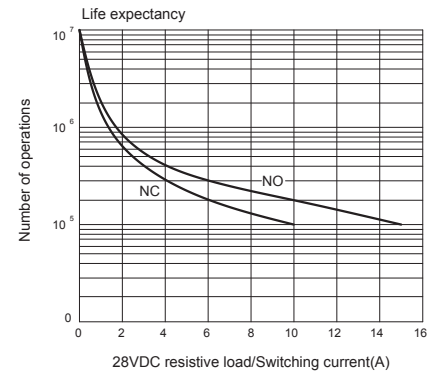
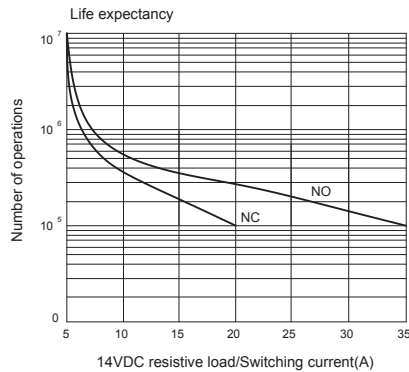
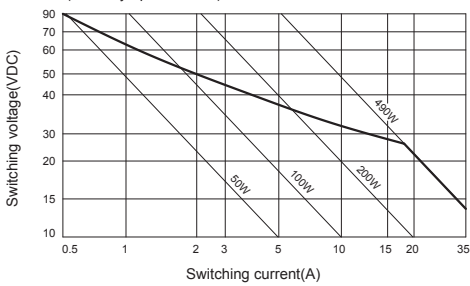


D1

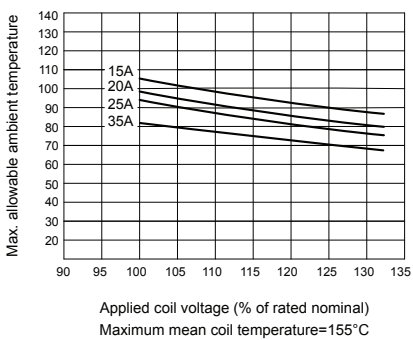


### »» Engineering Data

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



Ambient temperature vs coil voltage for continuous contact load



Operate time/Release time

