

### »» Features

- Smallest and slim type PCB Automotive relay.
- High rating 20A with maximum switching current up to 30A.
- High Temperature withstand up to 125°C.
- Single or twin relays are both available.
- Comply with RoHS-Directive 2002/95/EC, and ELV-Directive 2000/53/EC.

### »» Type List

Terminal style	Contact form	Designation (provided with)		
		Flux tight	Sealed type	Sealed type washable
PCB terminal	1A (SPNO)	103-1AH-C	103-1AH-V	103-1AH-S
		103T-1AH-C	103T-1AH-V	103T-1AH-S
	1C (SPDT)	103-1CH-C	103-1CH-V	103-1CH-S
		103T-1CH-C	103T-1CH-V	103T-1CH-S

### »» Ordering Information

103      T      -      1A      H      -      C  
 1          2          3          4          5

- |                                    |                                |
|------------------------------------|--------------------------------|
| 1. 103 -- Basic series designation | 4. H -- Contact material AgSnO |
| 2. Blank -- Single relay           | 5. C -- Flux tight             |
| T -- Twin relay                    | V -- Sealed type               |
| 3. 1A -- Single pole normally open | S -- Sealed type washable      |
| 1C -- Single pole double throw     |                                |

### »» Contact Rating

Resistive load	NO/NC 20A/10A 14VDC
Motor load	Inrush 30A Steady state 10A 14VDC,750K ops.
	Motor Lock : 20A 14VDC 200K ops.

### »» Coil Rating (DC)

Rated voltage (V)	Rated current ±10 % at 23 °C (mA)	Coil resistance ±10 % at 23 °C (Ω)	Max. continuous voltage at 85 °C	Pick up voltage(Max) at 23 °C	Drop out voltage(Min) at 23 °C	Power consumption at rated voltage
6	107	56	125 % of rated voltage	60 % of rated voltage	5 % of rated voltage	approx. 0.64W
9	70.8	127				
12	53.3	225				
24	26.7	900				

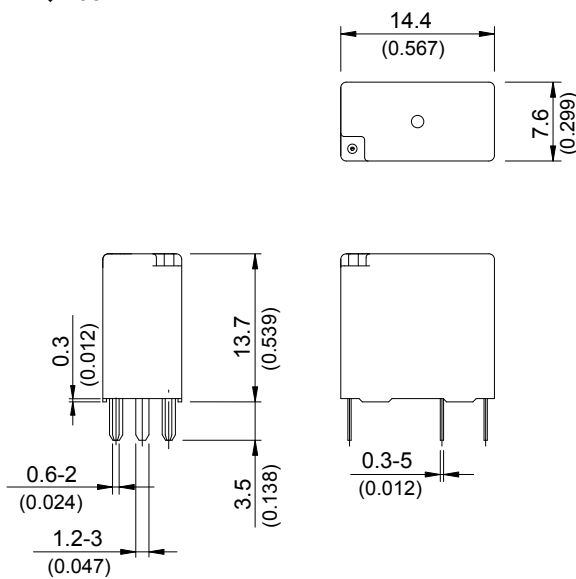
## »» Specification

Contact material	AgSnO alloy	
Contact voltage drop <sup>(1)</sup>	Typ. 50mV at 10A	
Operate time <sup>(1)</sup>	10 ms Max.	
Release time <sup>(1)</sup>	5 ms Max.	
Insulation resistance <sup>(1)</sup>	100 MΩ 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	10~50Hz , amplitude 1.0 mm
	Damage limits	10~50Hz , amplitude 1.0 mm
Shock resistance	Operating extremes	10G
	Damage limits	100G
Life expectancy	Mechanical	10,000,000 operations (frequency 18,000 operations/hr)
	Electrical	100,000 operations (frequency 360 operations/hr)
Operating ambient temperature	-40~+125 °C (no freezing)	
Weight	Approx. 4 g	

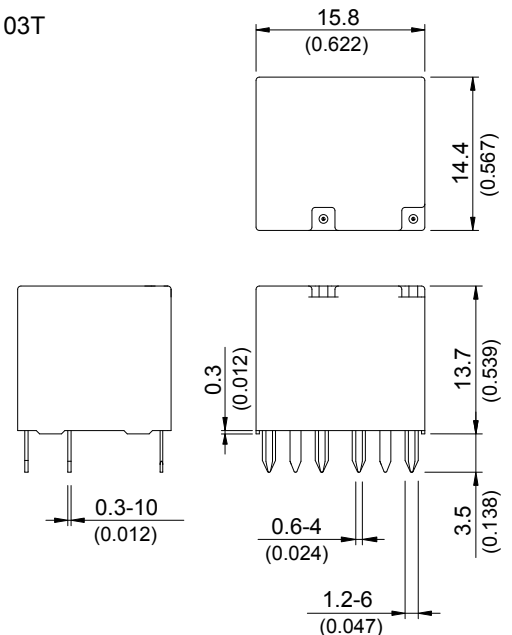
Note : (1) initial value

## »» Outline Dimensions

◆103



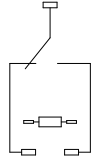
◆103T



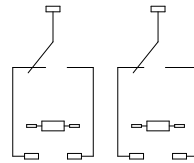
## Wiring Diagram

BOTTOM VIEW

◆ 103



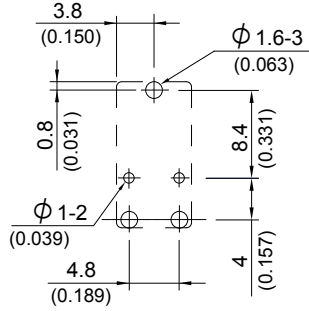
◆ 103T



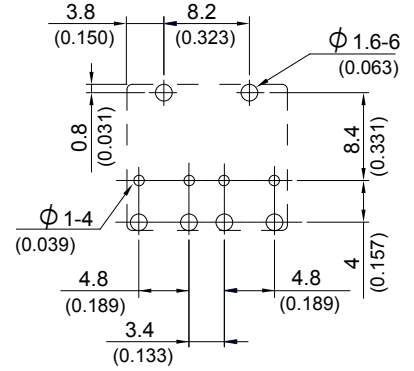
## PC Board Layout

BOTTOM VIEW

◆ 103

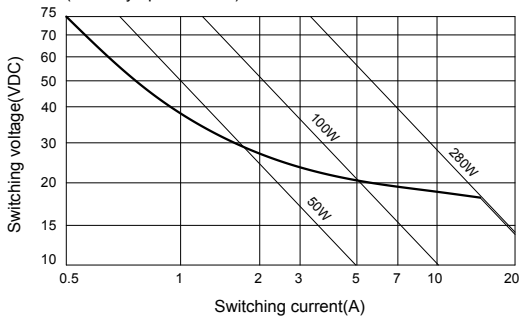


◆ 103T

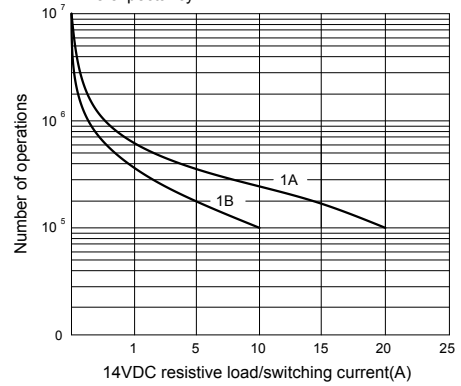


## Engineering Data

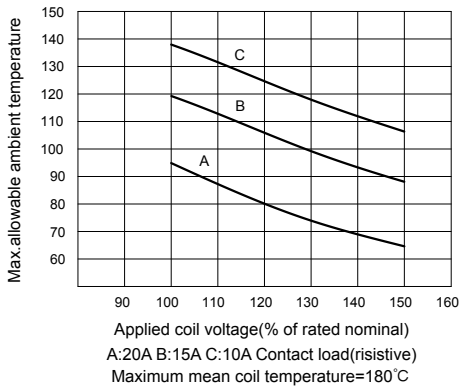
Safe breaking, arc extinguished  
(normally open contact) for resistive loads



Life expectancy



Ambient temperature vs. coil voltage for continuous duty



Operate time/Release time

