

## ● Features

- 6A switching capability
- 4kV dielectric strength (between coil and contacts)
- Surge voltage up to 6kV (between coil and contacts)
- Slim size (width 5mm)
- High sensitive: Approx. 170mW
- Sockets available
- UL insulation system: Class F available
- Environmental friendly product (RoHS compliant)
- Dimensions: 28.0 x 5.0 x 15.0 mm



## ● Application

- Smart Home Application / Home Appliance / Temperature Control / Security System / Anti-Theft System / Automation & Industrial Control / Meter, etc.

## ● Contact Data

Contact Arrangement	1A	1C
Contact Material	Ag Alloy	
Contact Rating	6A 250VAC, 6A 30VDC	
Max. Switching Power	1500VA / 180W	
Max. Switching Voltage	250VAC / 30VDC	
Max. Switching Current	6A	
Contact Resistance	$\leq 100\text{m}\Omega$ (6VDC 1A)	
Electrical Endurance	$6 \times 10^4$	$3 \times 10^4$ (NO) $1 \times 10^4$ (NC)
Mechanical Endurance	$1 \times 10^7$	

Note: Electrical endurance test under 6A 250VAC, 6A 30VDC, Resistive load, at 85°C, 1s on 9s off

- Coil Parameter (at 23°C)

Coil Voltage (VDC)		Coil Resistance ( $\Omega \pm 10\%$ )	Pickup Voltage(max) (VDC)	Release Voltage(min) (VDC)	Coil Power Consumption (W)
Rated	Max.				
5	7.5	147	3.75	0.25	0.17
6	9.0	212	4.50	0.30	
9	13.5	476	6.75	0.45	
12	18.0	848	9.00	0.60	
18	27.0	1906	13.5	0.90	
24	36.0	3390(1 $\pm$ 15%)	18.0	1.20	
48	72.0	10600(1 $\pm$ 15%)	36.0	2.40	0.21

- Operation Condition

Insulation Resistance		1000M $\Omega$ min (at 500VDC)
Dielectric Strength	Between Contacts	1000VAC 1min
	Between Contact and Coil	4000VAC 1min
Shock Resistance	Functional	98m/s <sup>2</sup>
	Endurance	980m/s <sup>2</sup>
Vibration Resistance		10~55Hz double amplitude 1.5mm
Ambient Temperature		-40 ~ +85°C
Operate Time		$\leq$ 8ms
Release Time		$\leq$ 4ms
Relative Humidity		5%~85%
Weight		Approx. 5g

## ● Ordering Information

	SB	-12D	-A	F	1	-S	(XXX)
<b>Model</b>	SB: Standard vertical version SBS: Horizontal version						
<b>Coil Voltage</b>	5, 6, 9, 12, 18, 24, 48 VDC						
<b>Contact Arrangement</b>	A: 1 Form A    C: 1 Form C						
<b>Contact Material</b>	Nil: AgSnO2    F: AgNi						
<b>Contact Plating</b>	1: Gold plated    Nil: No gold plated						
<b>Construction</b>	Nil: Flux tight    S: Sealed						
<b>Special Code</b>	Nil: Standard    XXX: Customer special requirement						

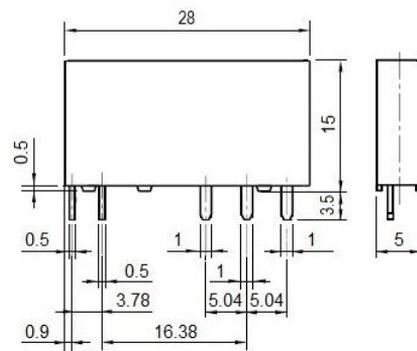
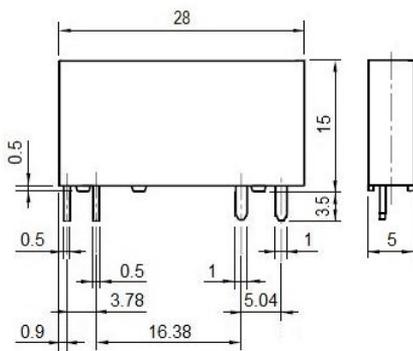
## ● Dimensions (UNIT: mm)

Outline Dimensions

1 Form A

1 Form C

SB type



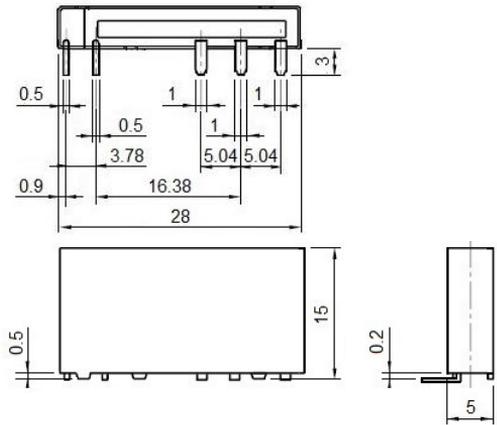
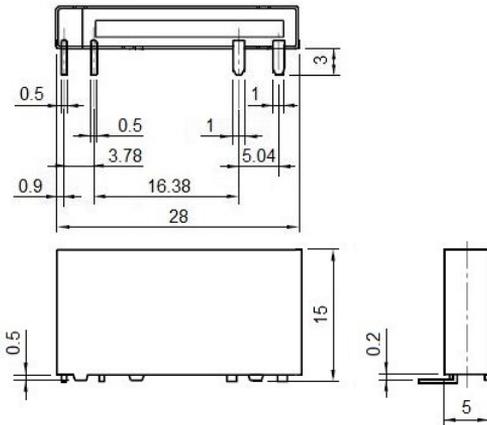
● Dimensions (UNIT: mm)

Outline Dimensions

1 Form A

1 Form C

SBS type

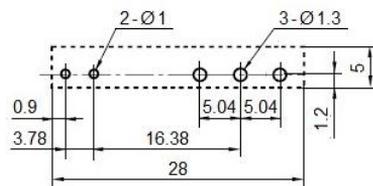
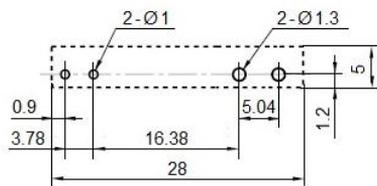


Mounting (Bottom views)

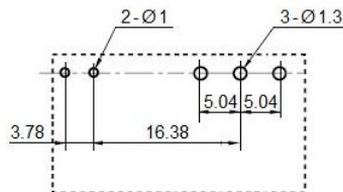
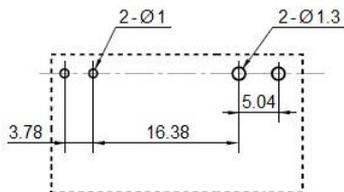
1 Form A

1 Form C

SB type



SBS type



● **Dimensions (UNIT: mm)**

Wiring Diagram (Bottom views)

1 Form A

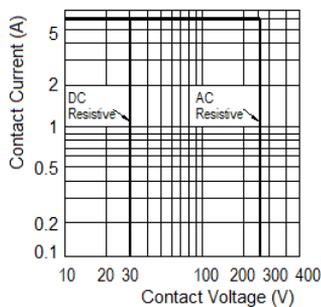


1 Form C

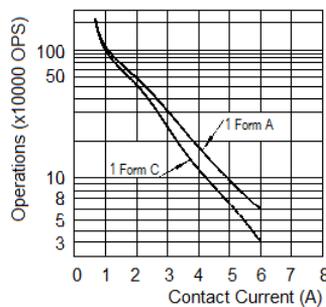


● **Engineering Data**

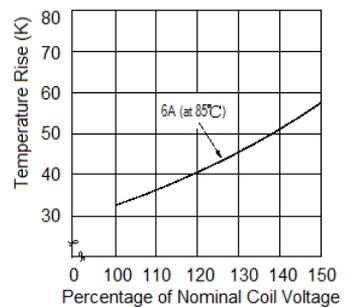
**Max. Switching Power**



**Endurance Curve**



**Coil Temperature Rise**



Test conditions:  
NO, AgNi, Resistive load, 250VAC,  
Flux tight, Room temp., 1s on 9s off.

Test conditions:  
6A 85°C (Typical curve of  
24VDC standard type)

- Remark: 1) In case of no tolerance shown in outline dimension: outline dimension  $\leq 1\text{mm}$ , tolerance should be  $\pm 0.2\text{mm}$ ; outline dimension  $>1\text{mm}$  and  $\leq 5\text{mm}$ , tolerance should be  $\pm 0.3\text{mm}$ ; outline dimension  $>5\text{mm}$ , tolerance should be  $\pm 0.5\text{mm}$ .
- 2) The tolerance without indicating for PCB layout is always  $\pm 0.1\text{mm}$ .

**Disclaimer**

The specification is for reference only. See to "Terminology and Guidelines" for more information. Specifications subject to change without notice. We could not evaluate all the performance and all the parameters for every possible application. Thus the user should be in a right position to choose the suitable product for their own application. If there is any query, please contact IOEC for the technical service. However, it is the user's responsibility to determine which product should be used only.

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