HX1 SERIES

<FEATURE>

- Large current capacity (35A fuse rating at 20°C)
- High heat resistance
- Flux tight housing
- Pb free
- Through-hole reflow soldering available

<APPLICATION>

- Motor control such as wiper and pumps, Heater control, CR circuit control, Lamp control

<PART NUMBER SYSTEM>

HX1 - 2 U 1 C S

Type			
Enclosure	Nil:	Unsealed
	S:	Sealed
Contact form	C:	1 form C
	A:	1 form A
Must operate voltage	1:	6.5V
Contact Material	U:	Silver oxide complex alloy (Standard)
	K:	Silver oxide complex alloy (High performance)
Coil Resistance	2:	225Ω

Contact Form	Contact Material	Coil Nominal Voltage	Coil Resistance	Sealed Type	Unsealed Type
1 form C	Standard	12VDC	225Ω	HX1-2U1CS	HX1-2U1C
1 form A	Standard	12VDC	225Ω	HX1-2U1AS	HX1-2U1A
1 form A	High performance	12VDC	225Ω	HX1-2K1AS	HX1-2K1A

<COIL RATING>

(Ambient temperature: 20°C)

Coil Nominal Voltage	Nominal Operating Power	Coil Resistance (±10%)	Must Operate Voltage (1)	Must Release Voltage (1)
12VDC	0.64W	225Ω	6.5VDC	0.9VDC

(1) Test by pulse voltage

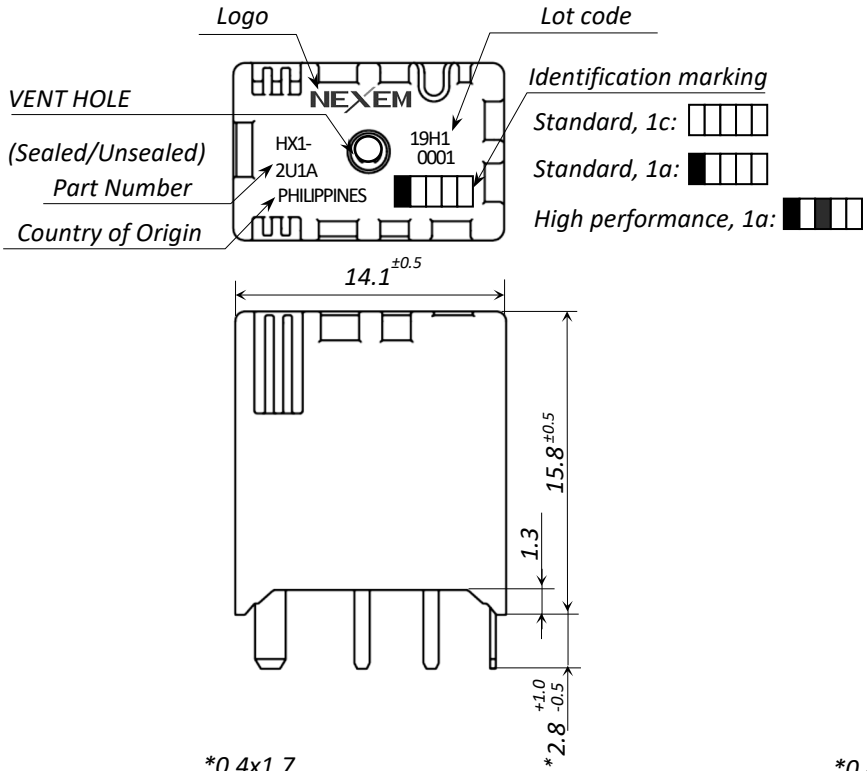
<SPECIFICATIONS>

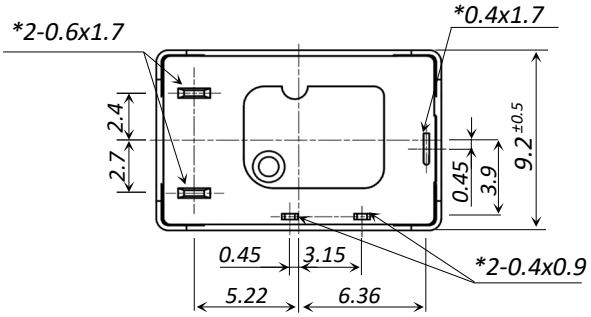
(Ambient temperature: 20°C)

Items		Specifications		
		Standard		High performance
Contact form		1 form C	1 form A	1 form A
Contact rating	Max. switching voltage	16Vdc		
	Min. switching current	1A at 5Vdc		
	Max. carrying current (3)	35A fuse rating at 20°C 30A fuse rating at 85°C		
	Contact resistance	3mΩ typical, 25mΩ max. (6Vdc–7A voltage drop method, initial)		
	Rated load	30A-16Vdc, Motor load	30A-16Vdc, Resistive load	Inrush 90A/ Steady 10A-16Vdc, Capacitive load
Contact material		Silver oxide complex alloy		
Operate time (4)		10ms max.		
Release time (4)		10ms max.		
Insulation resistance		100MΩ min. at 500Vdc		
Breakdown voltage	Between open contacts	500Vac min. for 1minute		
	Between coil and contact	500Vac min. for 1minute		
Shock resistance	Misoperation	100m/s^2		
	Destructive failure	1000m/s^2		
Vibration resistance	Misoperation	10 to 300Hz, 43m/s^2		
	Destructive failure	10 to 500Hz, 43m/s^2 for 200hours		
Ambient temperature		-40 to +125°C (no freezing and condensation)		
Life expectancy	Mechanical	1,000,000 cycles		
	Electrical	100,000 cycles (Rated load)		
Weight		5g typical		

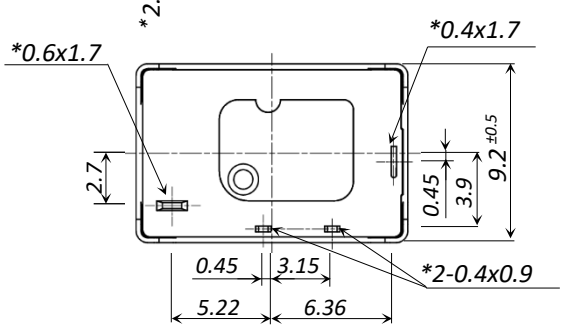
(2) Copper thickness: 105µm, width: 10mm, 110% 100hours min., 135% 30minutes, 200% 5seconds.
(3) Excluding contact bounce, nominal voltage applied, with flywheel coil diode

<DIMENSIONS>





[1 form C]

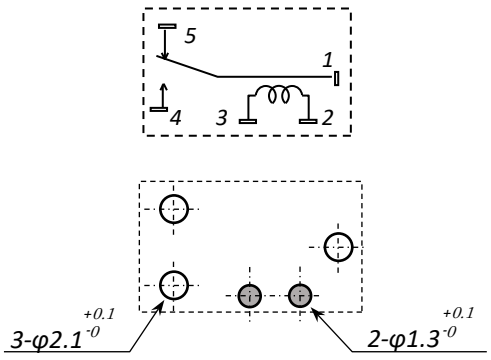


[1 form A]

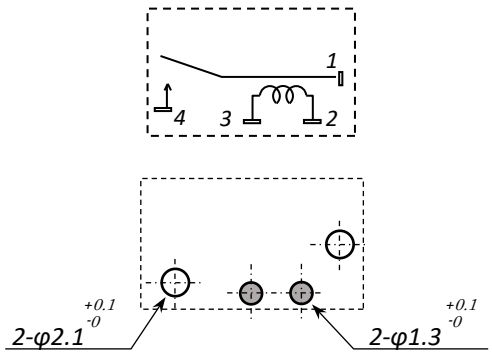
** AFTER SOLDER DIP*

<Unit: mm>

<SCHEMATIC AND PCB PAD LAYOUT (BOTTOM VIEW)>



[1 form C]

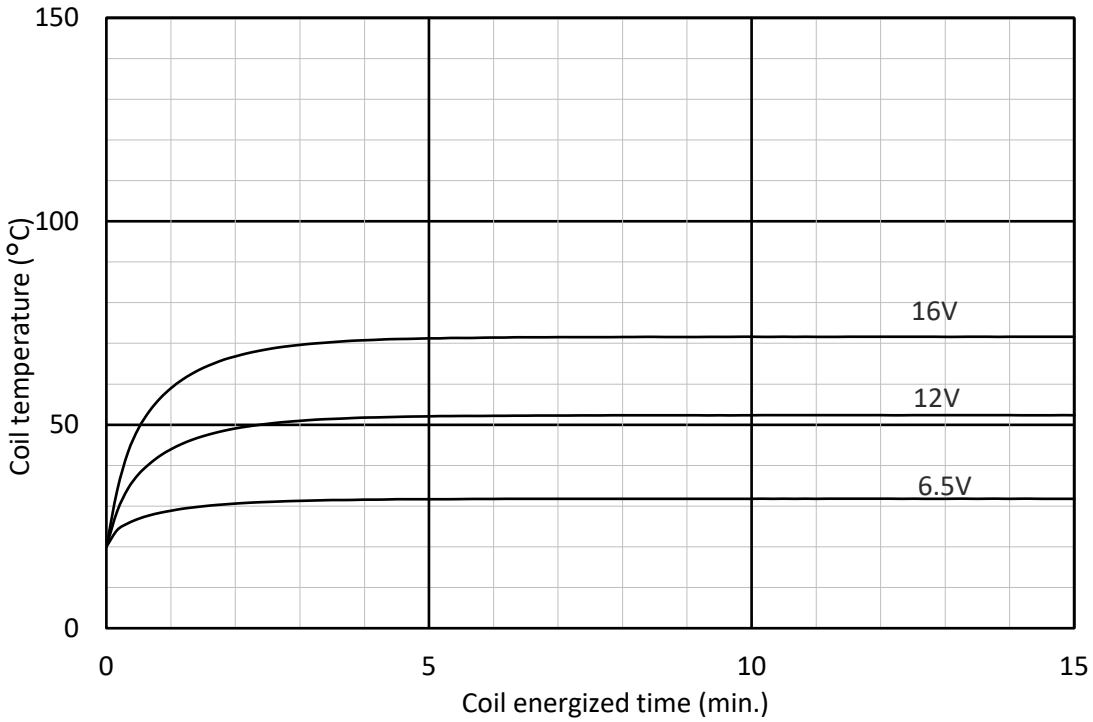


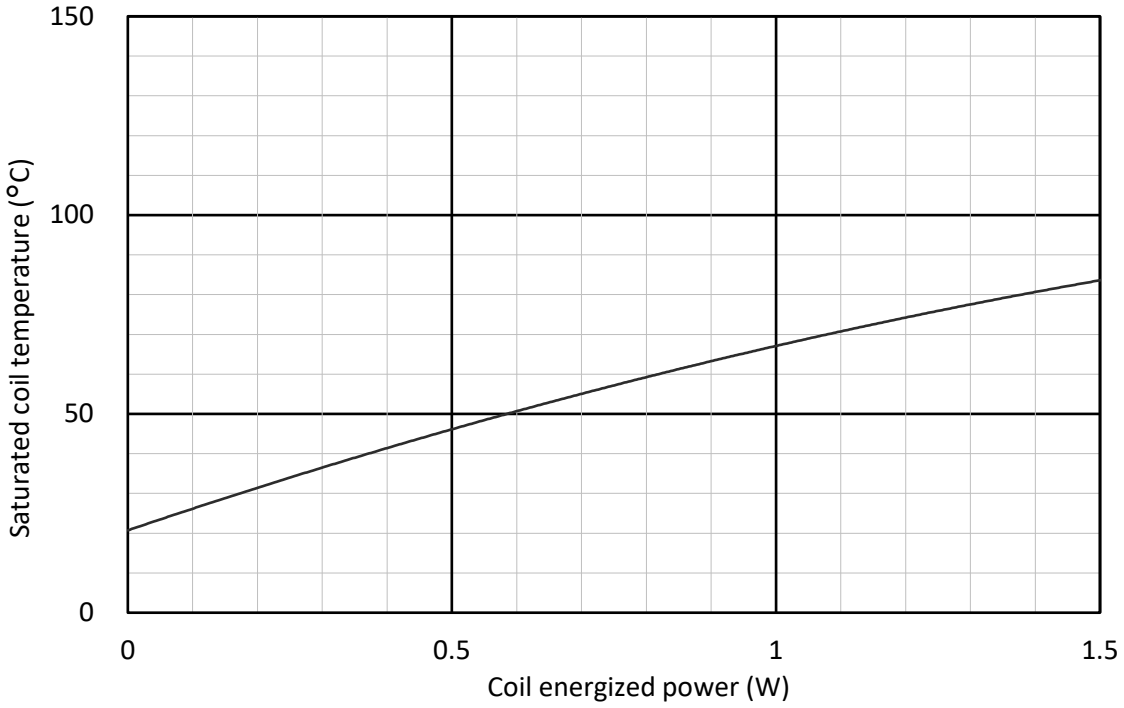
[1 form A]

<Unit: mm>

<TECHNICAL DATA>

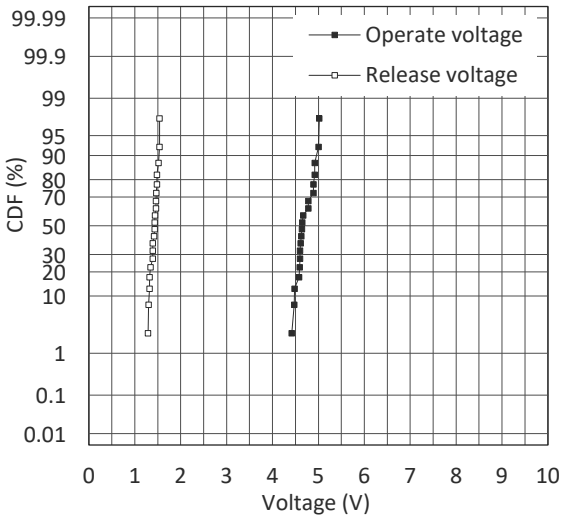
COIL TEMPERATURE DATA (Ambient temperature: 20°C)





RELAY CHARACTERISTICS DISTRIBUTION (INITIAL)

Operate / Release voltage

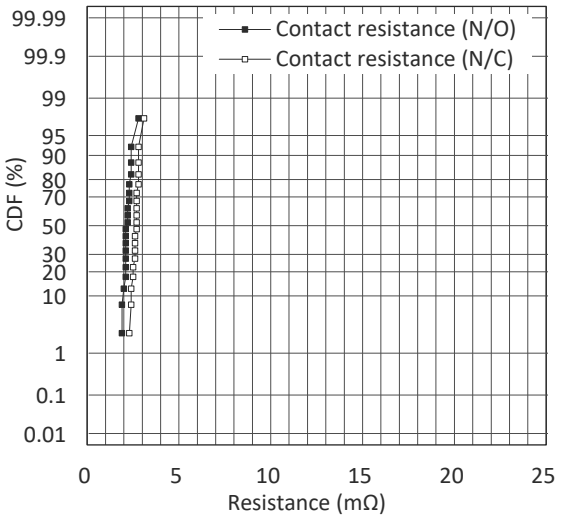


Specimen: HX1-2U1CS

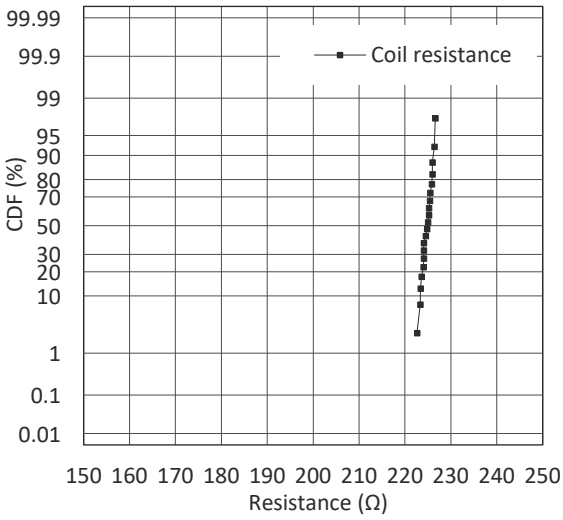
Ambient Temperature: 20°C

Quantity: 20pcs

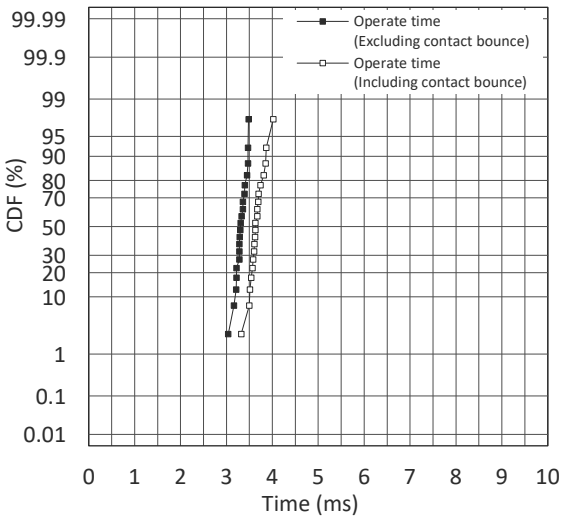
Contact resistance



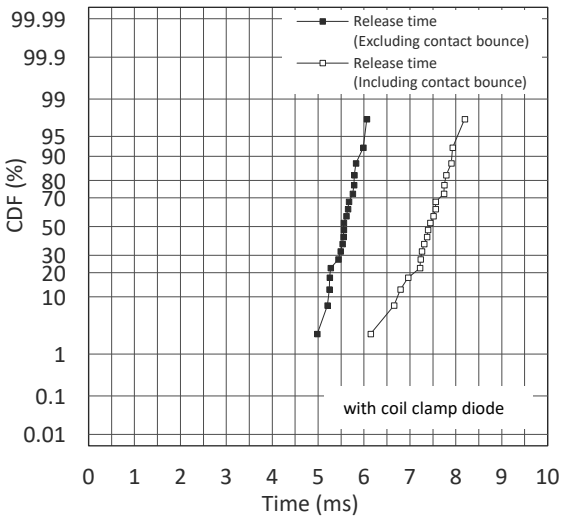
Coil resistance



Operate time



Release time



<NOTICE>

- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact EM Devices for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read “AUTOMOTIVE POWER RELAY USER’S MANUAL” in web site. (https://www.em-devices.com/en/)
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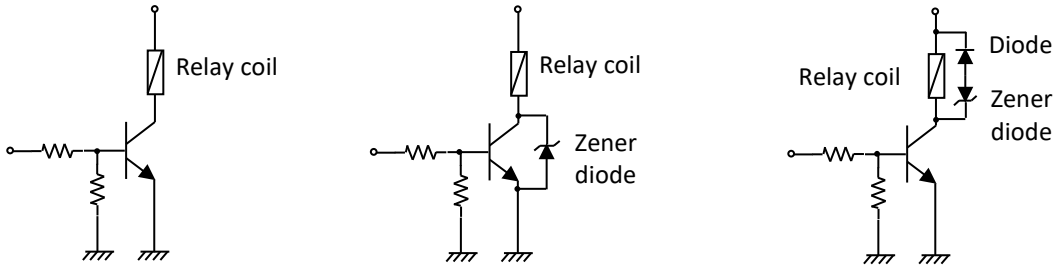
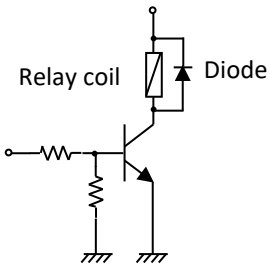
<COIL DRIVE CIRCUIT>

Recommended Circuit



(a) **(b)** **(c)**

Non-recommended Circuit



(d)

EM Devices recommends coil drive circuit (b) and (c) for coil fly back suppression, but does not recommend the circuit (d) because the performance of the HX1 relay does not appear enough.