RoHS

EM Devices Corporation

AUTOMOTIVE RELAY / 25A TYPE

EX1K SERIES

<FEATURE>

- 25A switching capacity
- Capable of continuous current
- Single relay
- High heat resistance
- Flux tight housing
- Pb free
- Through-hole reflow soldering available



<APPLICATION>

- Power window, door lock, rear wiper, motor control such as pump, air conditioner clutch, interior light

<PART NUMBER SYSTEM>

EX1K - 2 M 1 C S J

Pin length	J:	Standard
Enclosure	Nil:	Unsealed
	S:	Sealed
Contact form	C:	1 form C
	A:	1 form A
Must operate voltage	1:	6.5V
	4:	7.0V
	5:	7.2V
Contact Specification	M:	Silver oxide complex alloy (Standard)
	P:	Silver oxide complex alloy (Lamp load)
Coil Resistance	2:	160Ω
	5:	180Ω
Type		

Contact Form	Contact Specification	Coil Nominal Voltage	Coil Resistance	Sealed Type	Unsealed Type
1 form C	Standard	12VDC	160Ω	EX1K-2M1CSJ	EX1K-2M1CJ
1 form A	Lamp load	12VDC	160Ω	EX1K-2P4ASJ	EX1K-2P4AJ
1 form C	Standard	12VDC	180Ω	EX1K-5M5CSJ	EX1K-5M5CJ
1 form A	Standard	12VDC	180Ω	EX1K-5M5ASJ	EX1K-5M5AJ

<COIL RATING>

(Ambient temperature: 20°C)

Coil Nominal Voltage	Nominal Operating Power	Coil Resistance (±10%)	Must Operate Voltage (1)	Must Release Voltage (1)
12VDC	0.9W	160Ω	6.5VDC	0.9VDC
12VDC	0.9W	160Ω	7.0VDC	1.1VDC
12VDC	0.8W	180Ω	7.2VDC	1.0VDC

(1) Test by pulse voltage

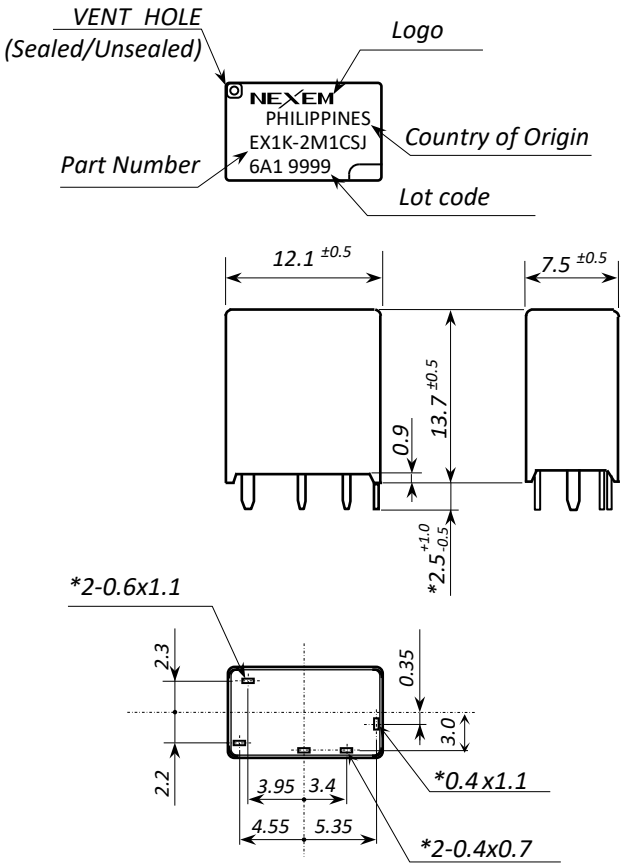
<SPECIFICATIONS>

(Ambient temperature: 20°C)

Items		Specifications		
		Standard	Standard	Lamp load
Contact form		1 form C	1 form A	
Contact rating	Max. switching voltage (2)	16Vdc		
	Max. switching current (2)	60A ON / 30A OFF		
	Min. switching current	1A at 5Vdc		
	Max. carrying current (3)	34A at 14Vdc for 1hour 5A at 14Vdc continuous (125°C)		
	Contact resistance	4mΩ typical, 25mΩ max. (6Vdc–7A voltage drop method, initial)		
	Rated load	25A-14Vdc, Motor load	25A-14Vdc, Resistive load	Inrush 60A/ Steady 10A-14Vdc, Lamp 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	98m/s^2		
	Destructive failure	980m/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		3.5g typical		

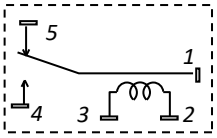
(2) Resistive, 10cycles
(3) Copper thickness: 140µm, width: 3.76mm, double layer
(4) Excluding contact bounce, nominal voltage applied, without flywheel coil diode

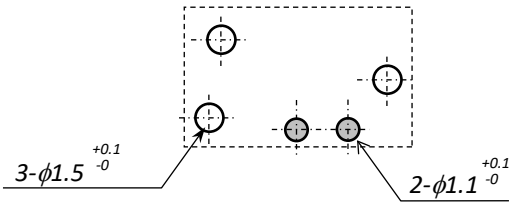
<DIMENSIONS>



* AFTER SOLDER DIP
<Unit: mm>

<SCHEMATIC AND PCB PAD LAYOUT (BOTTOM VIEW)>

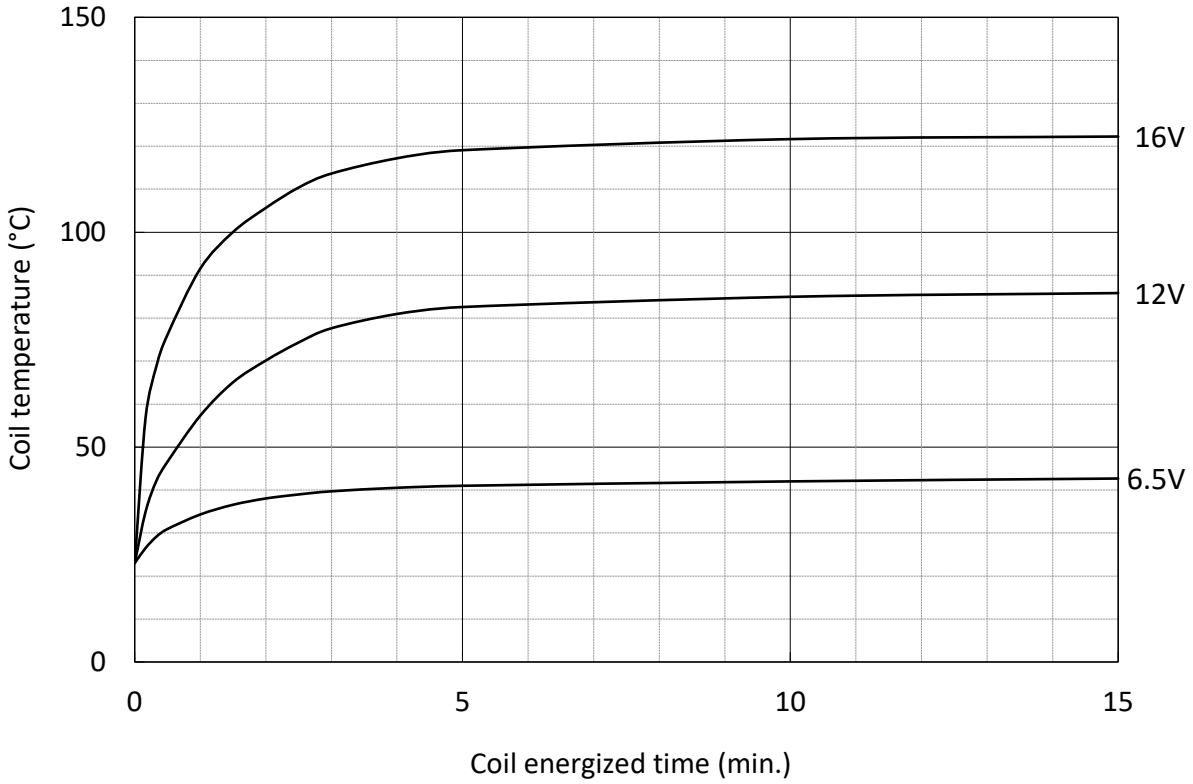


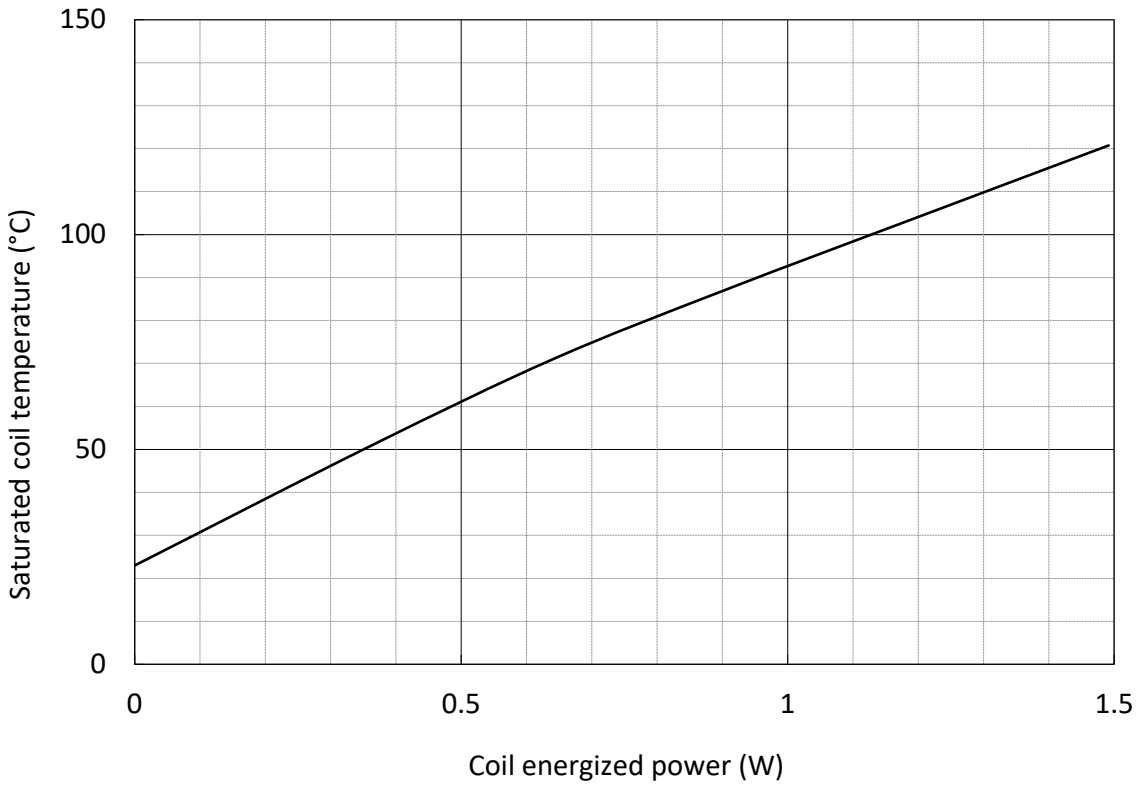


<Unit: mm>

<TECHNICAL DATA>

COIL TEMPERATURE DATA (Part name: EX1K-2M1CJ, ambient temperature: 20°C)



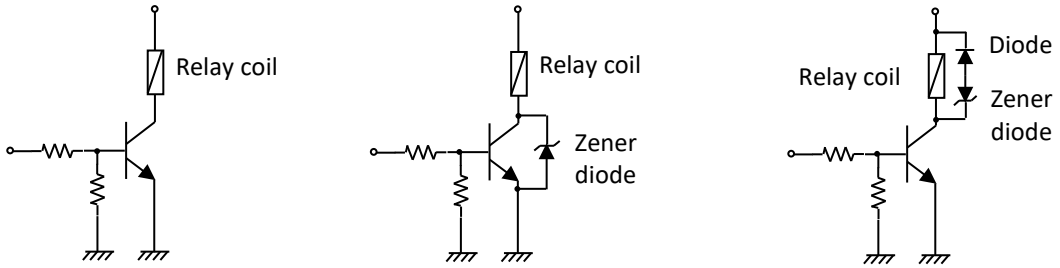


<NOTICE>

- 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 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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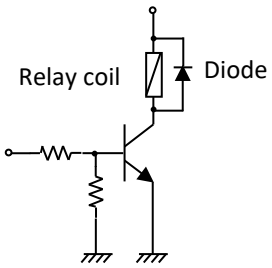
<COIL DRIVE CIRCUIT>

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 relays does not appear enough.