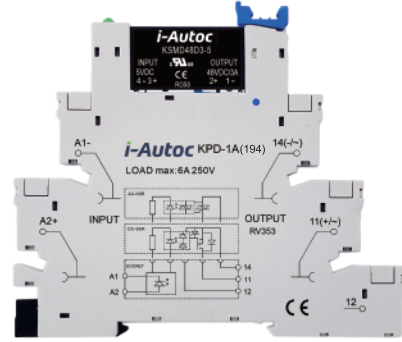


Product Description

- ◆ Transistor or MOSFET Output
- ◆ Optical Isolation
- ◆ Load Current : 0.1A, 2A, 3A, or 4A
- ◆ Load Voltage: 24VDC or 48VDC
- ◆ PCB or Socket Mounted
- ◆ Dielectric Strength: 2500Vrms
- ◆ RoHS Compliant



Ordering Information

KSM	D	48	D	3	-5	D
KSM Series ⁽¹⁾	Load Type D: DC Load	Load Voltage 24: 24VDC 48: 48VDC	DC Control	Load Current 0.1: 0.1Amp 2: 2Amp 3: 3Amp 4: 4Amp	Control Voltage 5: 5VDC 12: 12VDC 24: 24VDC 48: 48VDC 60: 60VDC	Blank: without Socket D: with Socket

(1) The part number selection is subject to the following list.

	0.1A	2A	3A	4A
5:4-6VDC	KSMD24D0.1-5	KSMD24D2-5	KSMD24D3-5	KSMD24D4-5
	KSMD24D0.1-5D	KSMD24D2-5D	KSMD24D3-5D	KSMD24D4-5D
	KSMD48D0.1-5	KSMD48D2-5	KSMD48D3-5	KSMD48D4-5
	KSMD48D0.1-5D	KSMD48D2-5D	KSMD48D3-5D	KSMD48D4-5D
12:9.6-14.4VDC	KSMD24D0.1-12	KSMD24D2-12	KSMD24D3-12	KSMD24D4-12
	KSMD24D0.1-12D	KSMD24D2-12D	KSMD24D3-12D	KSMD24D4-12D
	KSMD48D0.1-12	KSMD48D2-12	KSMD48D3-12	KSMD48D4-12
	KSMD48D0.1-12D	KSMD48D2-12D	KSMD48D3-12D	KSMD48D4-12D
24:19.2-28.8VDC	KSMD24D0.1-24	KSMD24D2-24	KSMD24D3-24	KSMD24D4-24
	KSMD24D0.1-24D	KSMD24D2-24D	KSMD24D3-24D	KSMD24D4-24D
	KSMD48D0.1-24	KSMD48D2-24	KSMD48D3-24	KSMD48D4-24
	KSMD48D0.1-24D	KSMD48D2-24D	KSMD48D3-24D	KSMD48D4-24D
48:38.4-57.6VDC	KSMD24D0.1-48	KSMD24D2-48	KSMD24D3-48	KSMD24D4-48
	KSMD24D0.1-48D	KSMD24D2-48D	KSMD24D3-48D	KSMD24D4-48D
	KSMD48D0.1-48	KSMD48D2-48	KSMD48D3-48	KSMD48D4-48
	KSMD48D0.1-48D	KSMD48D2-48D	KSMD48D3-48D	KSMD48D4-48D
60:48-72VDC	KSMD24D0.1-60	KSMD24D2-60	KSMD24D3-60	KSMD24D4-60
	KSMD24D0.1-60D	KSMD24D2-60D	KSMD24D3-60D	KSMD24D4-60D
	KSMD48D0.1-60	KSMD48D2-60	KSMD48D3-60	KSMD48D4-60
	KSMD48D0.1-60D	KSMD48D2-60D	KSMD48D3-60D	KSMD48D4-60D

General Specifications

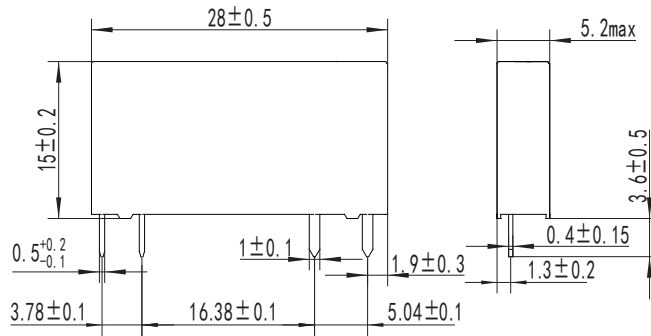
Input Specifications (Ta=25°C)		
Control Voltage Range	5	4-6VDC
	12	9.6-14.4VDC
	24	19.2-28.8VDC
	48	38.4-57.6VDC
	60	48-72VDC
Must Turn-on Voltage ⁽²⁾	5	4VDC
	12	9.6VDC
	24	19.2VDC
	48	38.4VDC
	60	48VDC
Must Turn-off Voltage	5	1VDC
	12	2.4VDC
	24	2.4VDC
	48	4.8VDC
	60	4.8VDC
Maximum Input Current	5	25mA (@6VDC)
	12	25mA (@14.4VDC)
	24	25mA (@28.8VDC)
	48	20mA (@57.6VDC)
	60	15mA (@72VDC)

Note: (2) For KSMD with control voltage at 12V, 24V, 48V, 60V that operating with the socket, the must control voltage should increase 1.4V, for example, for KSMD24D2-12D, please ensure that the control voltage is 9.6V+1.4V=11V Min

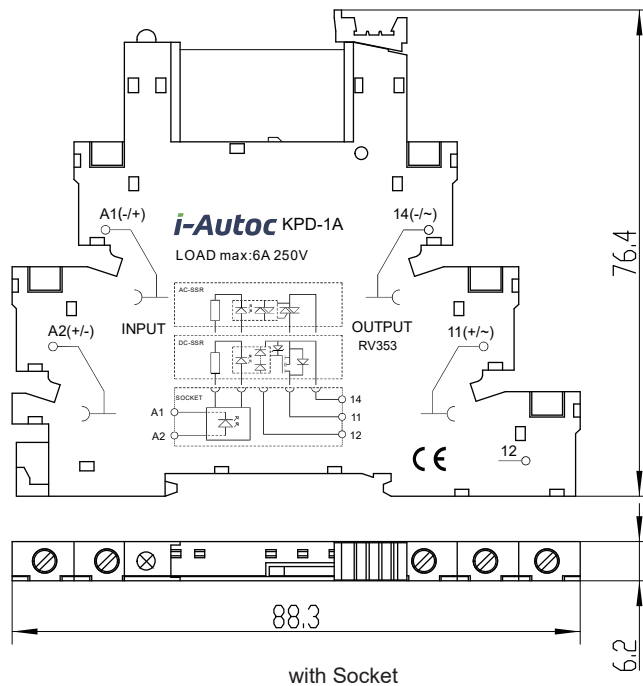
Output Specifications (Ta=25°C)		
Load Voltage Range	24V	3-28VDC
	48V	3-58VDC
Maximum Transient Overvoltage	24V	33VDC
	48V	58VDC
Load Current Range	0.1A	0.001 - 0.1A
	2A	0.002 - 2A
	3A	0.002 - 3A
	4A	0.002 - 4A
Maximum Turn-on Time	300µs	
Maximum Turn-off Time	300µs	
Maximum Surge Current (@10 ms)	0.1A	1A
	2A	20A
	3A	30A
	4A	48A
Maximum Off-State Leakage Current@Rated Load Voltage	0.1mA	
Maximum On-State Voltage Drop@Rated Current	0.1A	1.5VDC
Maximum On-State Resistance	2A/3A/4A	37mΩ

General Specifications (Ta=25°C)		
Dielectric Strength (50/60Hz)	2500Vrms	
Minimum Insulation Resistance (@500VDC)	1000MΩ	
Ambient Temperature Range	-30°C ~ +80°C	
Storage Temperature Range	-30°C ~ +100°C	
Weight (Typical)	without Socket	4g
	D: with Socket	30g

Outline Dimensions

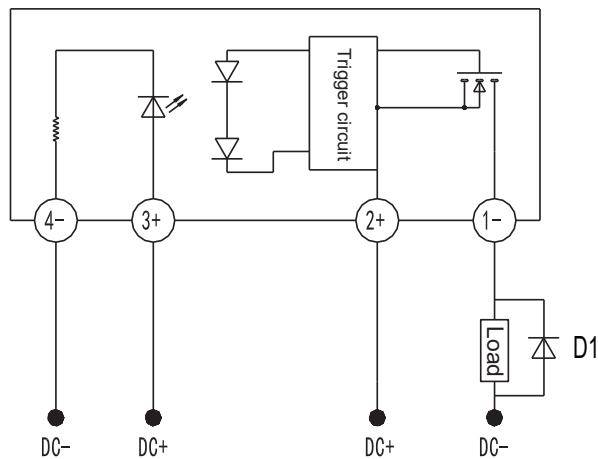


SSR



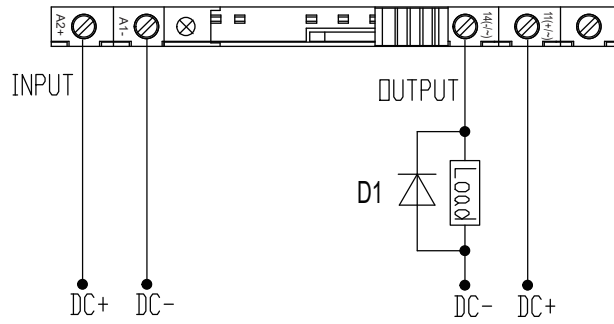
with Socket

Wiring Diagram

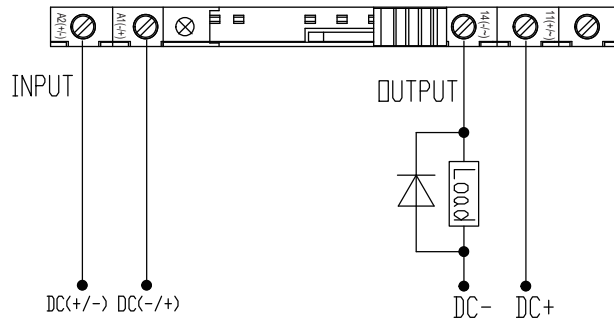


SSR

Wiring Diagram



KSMDXXX-5D



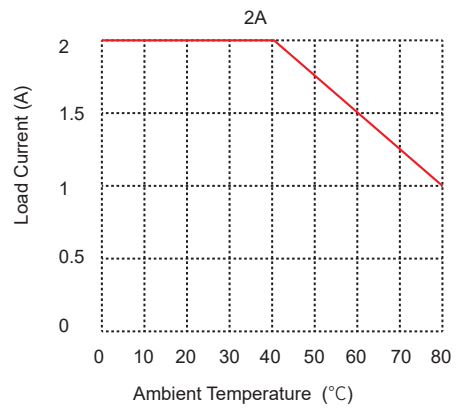
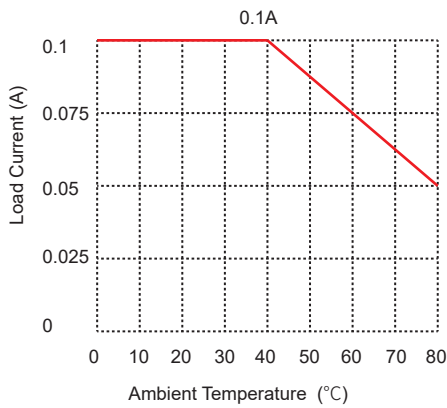
KSMDXXX-(12, 24, 48, 60)D

Note: When the relay is used for inductive load control, please be sure to use a suppression circuit, just like the drawing above. Both load terminals are inverse paralleled with a fly-wheel diode D1.
D1: Fast Recovery Diode

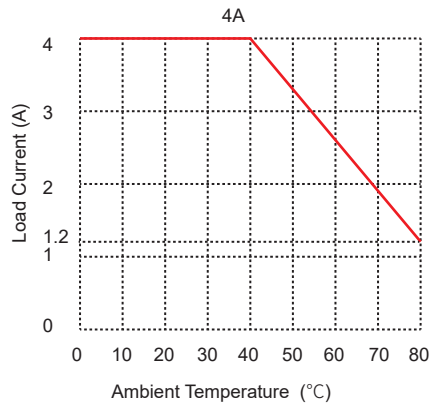
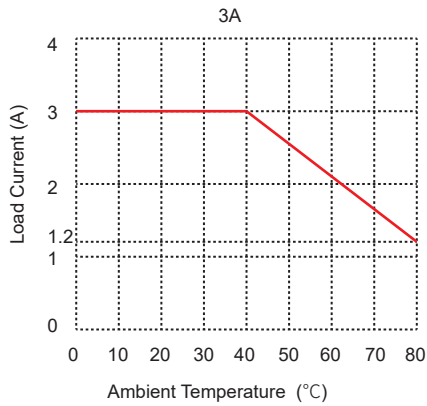
Applications

Suitable for high density PCB mounted, PLC control applications, and etc.

Thermal Derating Curve



Thermal Derating Curve



General Notes

1. Soldering must be finished within 10 seconds at 260 C , or finished within 5 seconds at 350 C . Otherwise, it may cause damage to the relay.
2. Terminal polarity must be observed. Otherwise, it may cause damage to the relay.
3. When ambient temperature is above 25 C , the maximum load current decreases. See thermal derating curve.
4. Capacitive load will produce very high surge current at the moment of conduction, which may lead to the damage of solid state relay due to the excessive surge current. Therefore, if the actual load is capacitive, or the load has paralleled large capacitance, it is strongly recommended that NTC should be connected in series in the load loop to suppress surge current in order to avoid damage to the product.

Warnings

1. The product's side panels may be hot, allow the product to cool before touching.
2. Disconnect all power before installing or working with this equipment.
3. Verify all connections and replace all covers before turning on power.

Certification Standards

Certification	Test Standard
UL	UL508
	C22.2 No. 14-13
CE	EN 60947-1:2007/A2:2014
	EN 60947-5-1:2017
TUV	EN 60947-1:2007/A2:2014
	EN 60947-5-1:2017