Solid State Relay
MSR-SJ Series Single Phase DC Output

MeK-Tronics

Product Data Sheet

- MOSFET or IGBT Output
- Low Impedance
- 4-32VDC Control Input
- Load Current: 7A-100A
- Dielectric Strength: 2500Vrms
- Internal Over-voltage Protection
- LED Indicator
- RoHS Compliant

MSR	–	SJ	50	D	40	W	-L
	Packing -: Bulk A-Z	MSR- SJ Series	Load Voltage 30: 0-24VDC 60: 0-48VDC 100:0-75VDC 200: 0-120VDC 600: 3-500VDC 1200:3-700VDC	Control Voltage D:DC Control	Load Current 7: 7 Amp 10: 10 Amp 20: 20 Amp 25: 25 Amp 40: 40 Amp 50: 50 Amp 80: 80 Amp 100:100 Amp	Control Voltage W: 4-32VDC	LED Indication Blank: Without LED L: With LED

NOTE: AVAILABLE PART NUMBERS ARE AS FOLLOWS						
	0-24VDC	0-48VDC	0-75VDC	0-120VDC	3-500VDC	3-700VDC
7A		MSR-SJ60D7W-L				
10A				MSR-SJ200D10W-L		
20A			MSR-SJ100D20W-L	MSR-SJ200D20W-L		
25A					MSR-SJ600D25W-L	MSR-SJ1200D25W-L
40A		MSR-SJ50D40W-L	MSR-SJ100D40W-L	MSR-SJ200D40W-L		
50A	MSR-SJ30D50W-L				MSR-SJ600D50W-L	MSR-SJ1200D50W-L
80A		MSR-SJ50D80W-L	MSR-SJ100D80W-L			
100A	MSR-SJ30D100W-L					

Technical Specification

INPUT CIRCUIT (TA=25˚C)		
Control Voltage Range		4-32VDC
Must Turn-On Voltage		4VDC
Must Turn-Off Voltage		1VDC
Maximum Input Current		25mA@32VDC
Maximum Transient Overvoltage		32VDC
OUTPUT CIRCUIT (TA=25˚C)		
Load Voltage Range	MSR-SJ30	0-24VDC
	MSR-SJ60	0-48VDC
	MSR-SJ100	0-75VDC
	MSR-SJ200	0-120VDC
	MSR-SJ600	0-500VDC
	MSR-SJ1200	0-650VDC
Maximum Load Current (A)	MSR-SJ30	50/100A
	MSR-SJ60	7/50A
	MSR-SJ100	20/40/80/100A
	MSR-SJ200	10/20/40A
	MSR-SJ600	25/50A
	MSR-SJ1200	25/50A

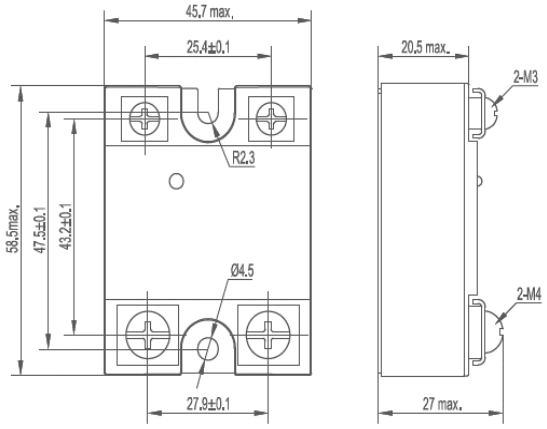
Maximum Surge Current (Apk@10ms)	MSR-SJ30	150@50Amps
		250@100Amps
	MSR-SJ60	30@7Amps
		150@50Amps
	MSR-SJ100	60@20Amps
		20@40Amps
		200@80Amps
		250@100Amps
	MSR-SJ200	30@10Amps
		60@20Amps
		120@40Amps
	MSR-SJ600	2150@25Amps
		300@50Amps
	MSR-SJ1200	150@25Amps
		300@50Amps
	MSR-SJ30	4.7@50Amps
		2.1@100Amps
	MSR-SJ60	14@7Amps
		7@50Amps
	MSR-SJ100	13@20Amps
		13@40Amps
		6.5@80Amps
		6.5@100Amps
	MSR-SJ200	60@10Amps
		30@20Amps
		30@40Amps

Maximum On State Voltage Drop @ Rated Current (V)	MSR-SJ600/1200	1.75V
Maximum On State Leakage Current @ Load Voltage (mA)	MSR-SJ100/200	0.1mA
	MSR-SJ600/1200	0.5mA
Minimum Load Current (mA)		2mA
Maximum Turn-On Time (ms)	MSR-SJ100/200	0.1ms
	MSR-SJ600/1200	1ms
Maximum Turn-Off Time (ms)	MSR-SJ100/200	0.1ms
	MSR-SJ600/1200	1ms
OUTPUT CIRCUIT (TA=25˚C)		
Dielectric Strength, Input/Output (50/60Hz)		2500Vrms
Minimum Insulation Resistance(@500VDC)		1000MΩ
Ambient Temperature Range		-30˚C +80˚C
Storage Temperature Range		-30˚C +100˚C
Weight (typical)		100g

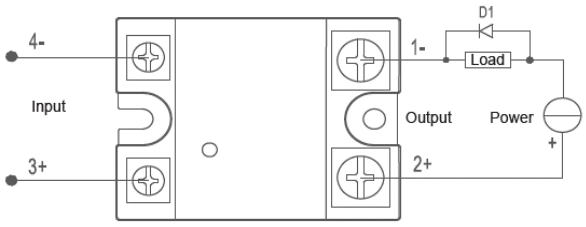
Application Note:

Control heating, DC power supplies, electromechanical valves, motors, medical equipment, etc.

Outline Dimensions/ Wiring Diagram



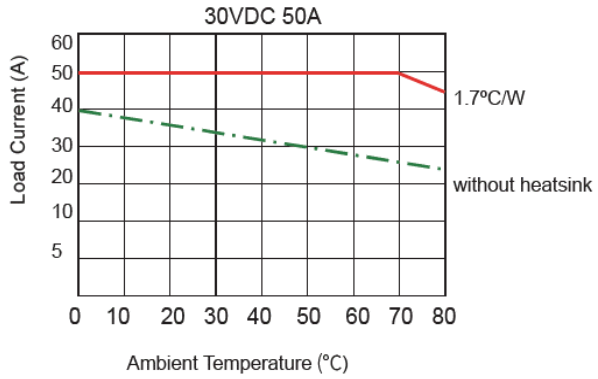
Outline Dimensions

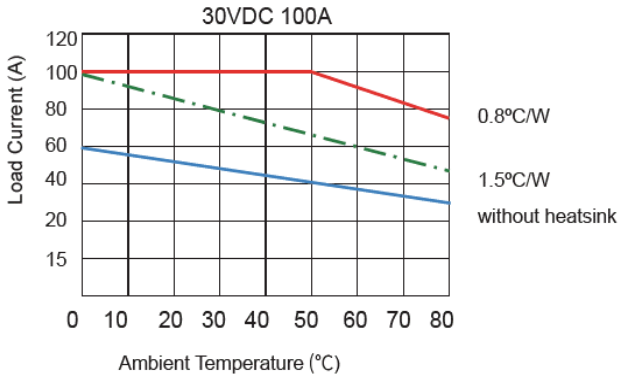


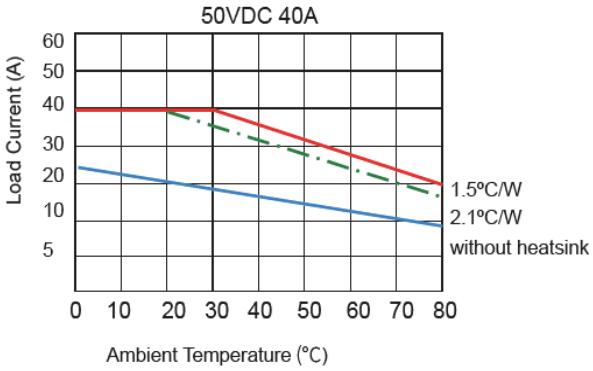
When the relay is used for inductive load control, please be sure to use a suppression circuit, just like the drawing above. Both load terminals are inverse parallelled with a fly-wheel diode D1.
D1: Fast Recovery Diode

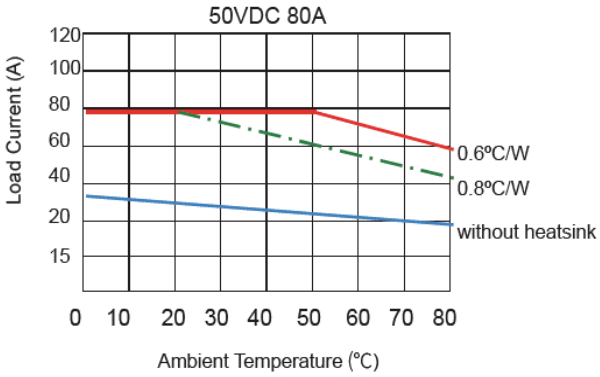
Wiring Diagram

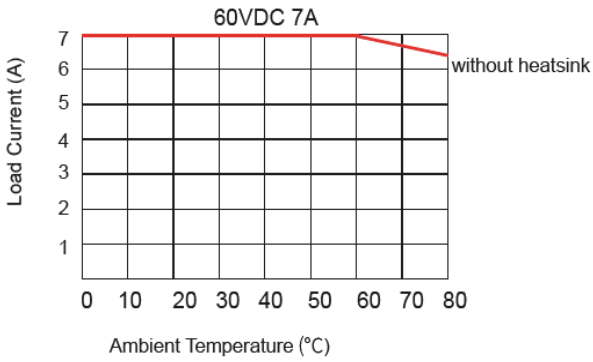
Thermal Curve

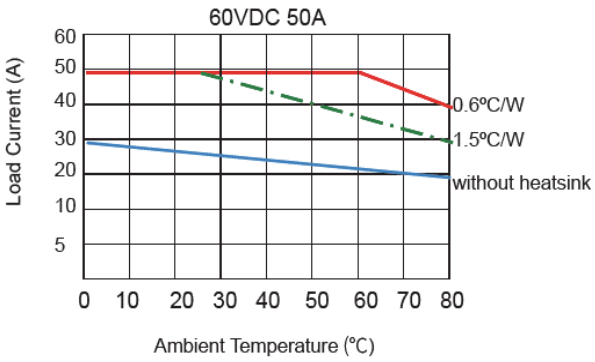


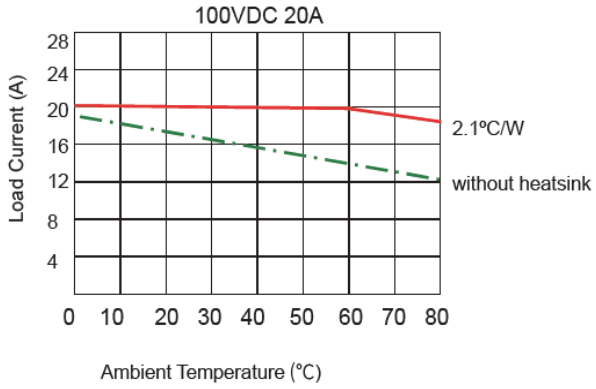


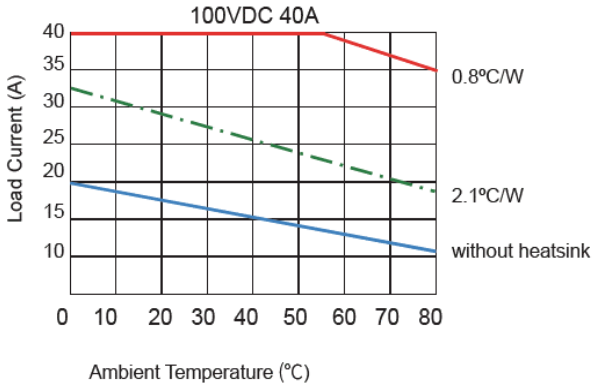


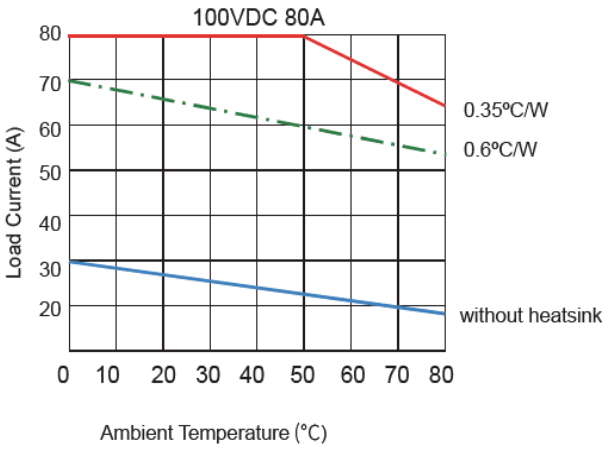


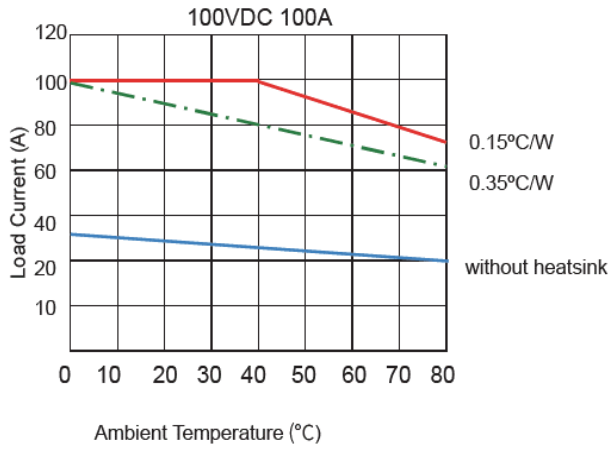


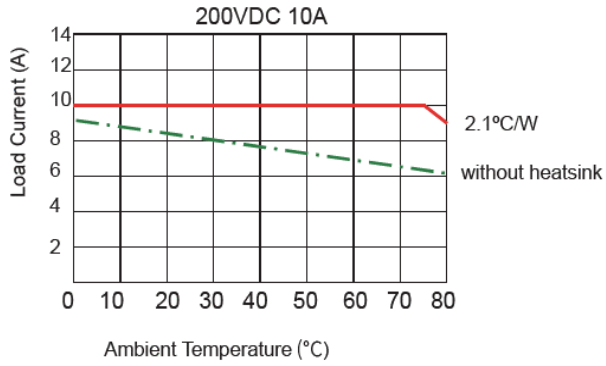


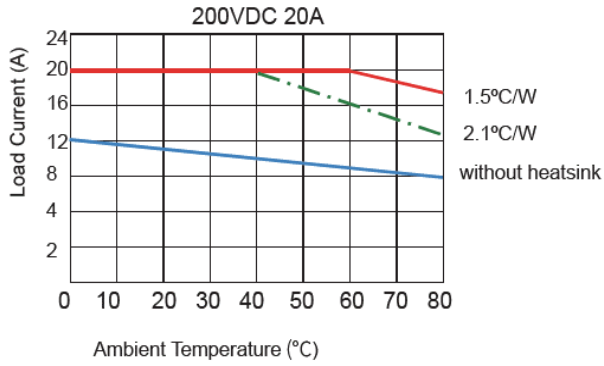

100VDC 20A
Load Current (A)
28
24
20
16
12
8
4
0 10 20 30 40 50 60 70 80
Ambient Temperature (°C)
2.1°C/W
without heatsink

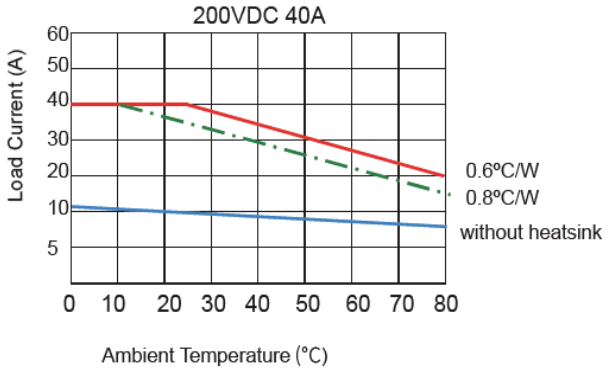

100VDC 40A
Load Current (A)
40
35
30
25
20
15
10
0 10 20 30 40 50 60 70 80
Ambient Temperature (°C)
0.8°C/W
2.1°C/W
without heatsink

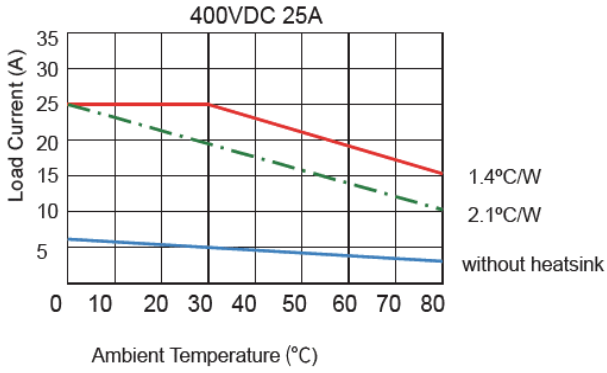

100VDC 80A
Load Current (A)
80
70
60
50
40
30
20
0 10 20 30 40 50 60 70 80
Ambient Temperature (°C)
0.35°C/W
0.6°C/W
without heatsink

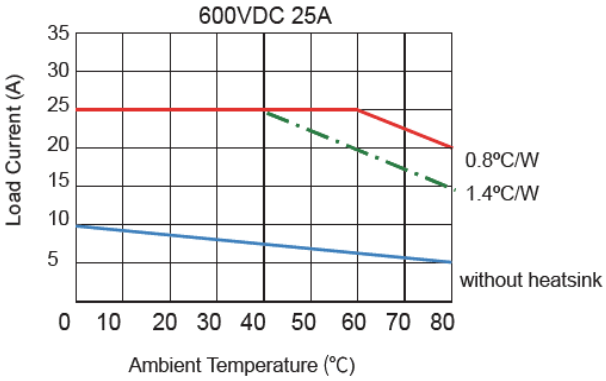

100VDC 100A
Load Current (A)
120
100
80
60
40
20
10
0 10 20 30 40 50 60 70 80
Ambient Temperature (°C)
0.15°C/W
0.35°C/W
without heatsink

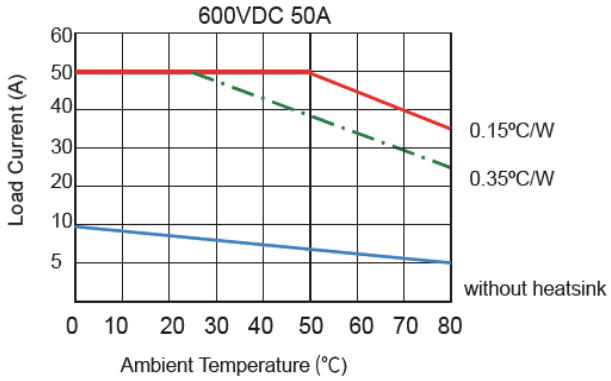

200VDC 10A
Load Current (A)
14
12
10
8
6
4
2
0 10 20 30 40 50 60 70 80
Ambient Temperature (°C)
2.1°C/W
without heatsink

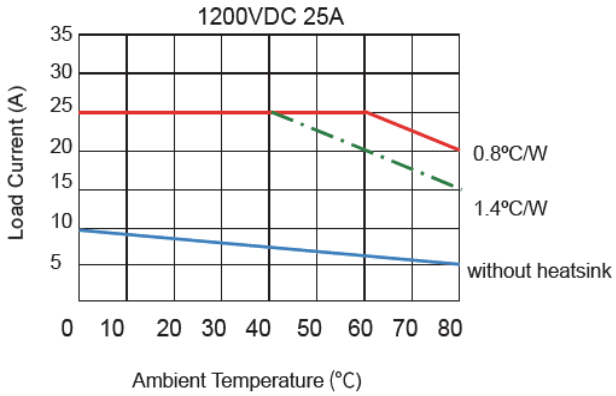

200VDC 20A
Load Current (A)
24
20
16
12
8
4
2
0 10 20 30 40 50 60 70 80
Ambient Temperature (°C)
1.5°C/W
2.1°C/W
without heatsink

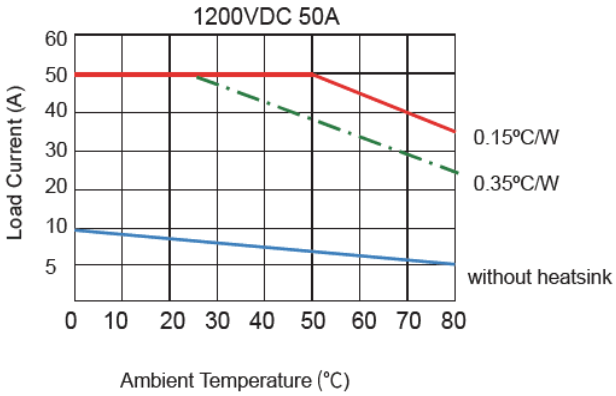












Important Notice

1. Relay must be mounted to proper sized heat sink based on thermal curves. Thermal grease or a thermal pad must be used between relay and heat sink and be torqued down to 18-20/2.0-2.2in-ln/Nm.
2. When connection wiring to SSR please ensure screws are torqued down properly (input 13-15/1.5in/lb/Nm, output 18-20/2.0-2.2in-ln/Nm.)
3. When Ambient temperature is above 25°C see thermal derating curve.

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