

Low-cost DC Relay SSRD



- ◆ For DC loads
- ◆ Up to 300 VDC operating voltage
- ◆ Up to 40 A switching DC current
- ◆ 4 input ranges
- ◆ 4000 V input/output insulation
- ◆ Heatsinks available

The SSRD solid state relay is an electronic module designed to switch active or active/inductive DC power loads from 5 to 40 A at power voltage up to 300 VDC. Thanks to its higher switching frequency and practically complete absence of electromagnetic interference, the SSR module is a non-contact and convenient substitute of power contact relays. The life and reliability of the SSR module, compared to these of the contact relays, are much higher because there are no moving parts, noise, shocks, and vibration during the operation. The control input is optically isolated from the output and accepts AC or DC voltage signals. An operating LED indicates ON/OFF device status. Heatsinks are available as accessory.

Technical specifications

Input

Control voltage	4...36 VDC	6...26 VAC/DC	115 VAC	230 VAC
Input current	5...12 mA	6...12 mA	6 mA	12 mA
Turn-on / off voltage	3 VDC	4 VAC / 5 VDC	90 VAC	180 VAC
Reverse voltage protection	-32 VDC	-32 VDC	-	-

Output (no connection with the input types!)

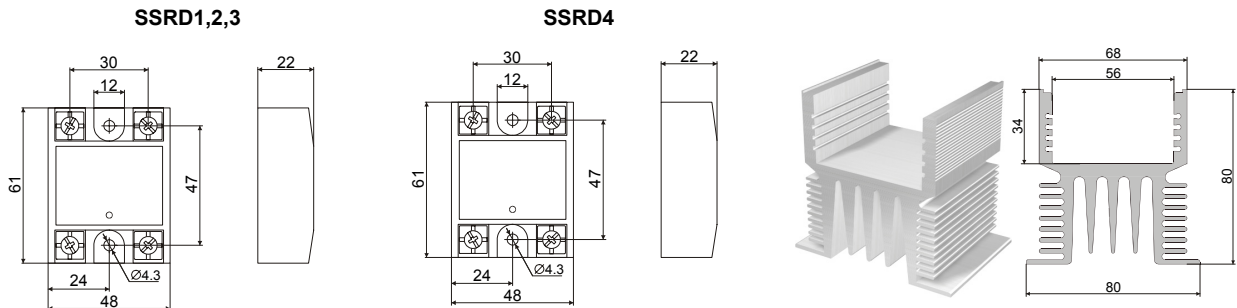
Operating DC voltage	3...40 VDC	15...60 VDC	15...300 VDC	5...220 VDC
On-state current at proper heatsink ⁽¹⁾	≤ 5 A	≤ 40 A	≤ 20 A	≤ 40 A
Non-repetitive pulse current	≤ 15 A	≤ 160 A	≤ 130 A	≤ 130 A
Maximum leakage current	100 μA	10 μA	100 μA	100 μA
On-state voltage at rated current	2 V	0.5 V	1.3 V	1.3 V
Critical off-state voltage rise dV/dt	400 V/μs	7 V/ns	15 V/ns	15 V/ns
Thermal resistance (junction-case)	1.6 °C/W	2.7 °C/W	0.5 °C/W	0.5 °C/W
Power factor	> 0.6	> 0.6	> 0.7	> 0.7

General specifications

Operating temperature	-20...65 °C
Storage temperature	-40...85 °C
Case material	glass-filled plastic
Base plate (heatsink) material	aluminum
Input / output insulation	4000 VAC _{rms}
Output / case insulation	2500 VAC _{rms}
Protection class	IP00
Wiring	4 x M4 screws
Mounting	2 x M4 screws
Rail mounting	MAC2 rail clamp ⁽²⁾
ON-indicating LED	ø3, red
Weight	≈ 100 g

⁽¹⁾ We highly recommend using SSR at no more than 80% of maximum on-state current!

⁽²⁾ Ordered separately (see 'Accessories')



Heatsink specifications Heatsink length [mm] (at 85 °C heatsink temperature)

Output:SSRD variant	1		2		3		
Current →	5 A	20 A	30 A	40 A	10 A	16 A	20 A
Ambient temperature ↓							
20 °C	62	62	62	62	62	62	62
40 °C	62	62	62	120	62	62	120
60 °C	62	62	120	250	62	120	250

Ordering code SSRD* - G1

Code	Feature or option	Code values
*	Output: SSRD variant	1 - 3...40 VDC/5A, 2 - 15...60 VDC/40A, 3 - 15...300 VDC/20A, 4 - 5...220 VDC/40A ⁽¹⁾
G1	Input	A - 230 VAC, B - 115 VAC, D - 4...36 VDC, E - 6...26 VAC/DC

⁽¹⁾ Available for input 4...36 VDC!

Applicable accessories

Code	Description
HS__	Heatsink (specify the length [mm] using the table above) w/ or w/o rail-mounting clamp ⁽²⁾