



DC SOLID STATE RELAYS

Type	Load current	Nominal Load Voltage	Load Voltage Range	Input Voltage Range	Temperature Range - C°
SSR25D/24V	25A	24 Vdc	18...32 Vdc	5...32 Vdc	0°...+55°
SSR25D/36V	25A	36 Vdc	28...46 Vdc	5...32 Vdc	0°...+55°
SSR25D/48V	25A	48 Vdc	38...55 Vdc	5...32 Vdc	0°...+55°



Function

The solid-state relay SSR25D is an electronic power DC switch. It is designed to commutate huge electrical loads (up to 25A), driven by constant voltage of 24/36/48Vdc.

The switching element is an OMNIFET transistor 35A/70V/0.028Ω. The input and output circuit are separated by an optocoupler.

SSR25D can be used together with suitable controllers for precision control of electrical loads.

Low (safe) d.c. voltage control allows direct connection to controllers or other devices without the need of additional relays and contactors.

SSR25D has three built-in types of safety protection:

- **current protection** when the load current exceeds a predefined value (I lim) the transistor goes into pulse mode, thus limiting the average load current. When the current falls below that value the normal operation of the relay is resumed.

- **overvoltage protection** when switching inductive loads the overvoltage peaks are limited to a certain value (V clamp).

- **thermal protection** when the temperature of the case of the built-in transistor goes over a certain value, the switch is turned off till the temperature falls below that value.

Operating indicator (red LED) on the front side shows if input voltage is applied.

The solid-state relays SSR25D are filled in with epoxy resin to protect them from atmospheric influence.

Specifications

Output circuit:

- Load voltage constant, filtered
Nominal value: 24 / 36 / 48 Vdc
Minimum value: 18 / 28 / 38 Vdc
Maximum value: 32 / 46 / 55 Vdc
- Load current
Minimum value: 2 mA
Maximum value: 25 A
- Current limitation Ilim - (production tolerance)
Minimum value: 25 A
Typical value: 35 A
Maximum value: 45 A
- Overvoltage protection - Vclamp
Minimum value: 60 V
Typical value: 70 V
Maximum value: 80 V
- Reverse current: 50 Amax
- Thermal protection (production tolerance)
Minimum value: 150 °C (temperature of the transistor case)

Input (control) circuit:

- Input voltage constant, filtered
Minimum value: 4,5 Vdc
Maximum value: 32 Vdc
- Input current
- 6mA @ Uy = 4,5 V
- 20mA @ Uy = 32 V

Maximum switching frequency: 2 kHz

Isolation 2500 V

- between the output circuit and the metal part of the case
- between the input circuit and the metal part of the case
- between the input and output circuits

Cooling surface of the heatsink:

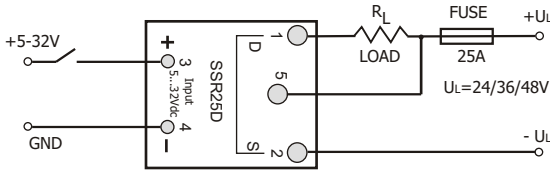
Up to 10A on a metal surface, no need for special heatsink;

For 25A cooling surface > 8 dm²

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Operating guide

· Circuit diagram



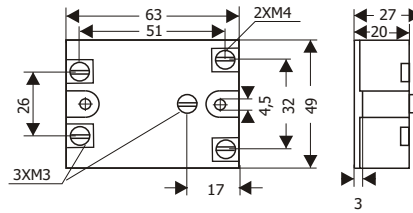
• Operating conditions:

Ambient temperature from 0 °C to +55 °C
Relative humidity from 40 to 80%

• Storage conditions:

Ambient temperature from -25 °C to +70 °C
Relative humidity not more than 85%

• Overall and mounting dimensions:

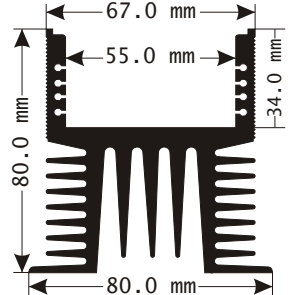


• Weight (net) < 0,12 kg

• Mounting instructions

The SSR is mounted on a heatsink by two M4x6 screws at a distance of 50mm.

Isomatic Complect offers heatsinks from shaped aluminium, type 500-2182:
- for 25A 80mm long



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ISOMATIC COMPLECT manufactures also: an eight-channel regulator Mc3, a universal programmable microcontroller with built-in regulators, and various digital periphery, temperature transmitters, passive galvanic separators 4-20/4-20mA, etc.