

RSR25-...-B

single-phase solid state relays, miniature



- Zero-crossing or random-on switching • DC control input
- SCR output (thyristors) • Load current 5 A
- Max. load voltage 280, 530 V AC (single-phase)
- Dielectric strength 4 000 V_{rms} (opto-isolation)
- RC protection (built-in resistor, capacitor)
- Suitable for PCB mounted
- Recognitions, certifications, directives: RoHS, REACH,   

Applications

Lighting control, small motors control, vending machine control, medical device control, valve control, and etc.



Basic technical data

Load voltage: 24...280 V AC, 24...530 V AC

Control input: DC

Load current: 5 A

Type		zero-crossing	random-on
Load voltage	Control voltage	Load current 5 A	
24...280 V AC	4...15 V DC	RSR25-24D5-12S-B	
	15...32 V DC	RSR25-24D5-24-B	
	4...32 V DC	RSR25-24D5-24S-B	RSR25-24D5R-24S-B
24...530 V AC	4...15 V DC	RSR25-48D5-12S-B	
	15...32 V DC	RSR25-48D5-24-B	
	4...32 V DC	RSR25-48D5-24S-B	RSR25-48D5R-24S-B

Load voltage

	RSR25-24...	RSR25-48...
Rated load voltage	240 V AC	480 V AC
Rated range of load voltage	24...280 V AC	24...530 V AC
Blocking voltage	600 V _{pk}	1 200 V _{pk}
Rated frequency	47...63 Hz	47...63 Hz
Power factor	0,5	0,5

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Control input

	zero-crossing	zero-crossing	zero-crossing
	RSR25-..D.-12S	RSR25-..D.-24	RSR25-..D.-24S
Control voltage range	4...15 V DC	15...32 V DC	4...32 V DC
Must turn-on voltage	4 V DC	15 V DC	4 V DC
Must turn-off voltage	1 V DC	5 V DC	1 V DC
Zero voltage turn-on	≤ 30 V	≤ 30 V	≤ 30 V
Maximum input current	25 mA 32 V DC	25 mA 32 V DC	25 mA 32 V DC
Response time pick-up	≤ 1/2 cycle + 1 ms	≤ 1/2 cycle + 1 ms	≤ 1/2 cycle + 1 ms
Response time drop-out	≤ 1/2 cycle + 1 ms	≤ 1/2 cycle + 1 ms	≤ 1/2 cycle + 1 ms

Control input

	random-on
	RSR25-..D.R-24S
Control voltage range	4...32 V DC
Must turn-on voltage	4 V DC
Must turn-off voltage	1 V DC
Maximum input current	25 mA 32 V DC
Response time pick-up	≤ 1 ms
Response time drop-out	≤ 1/2 cycle + 1 ms

Output circuit

	RSR25-...5...
Rated load current	5 A
Rated load range	0,1...5 A
Maximum surge current	250 A 10 ms
I ² t for fusing	312 A ² s 10 ms
Max. operational current AC-51 rating	5 A
Max. operational current AC-53 rating	3 A
Min. operational current	0,1 mA
Maximum off-state leakage current (at rated load voltage)	5 mA
Maximum on-state voltage drop (at rated current)	1,5 V _{rms}
Minimum off-state dV/dt (at max. rated voltage)	500 V/μs

General data

	RSR25-...
Dielectric strength	input - output: 4 000 V _{rms} 50/60 Hz
Minimum insulation resistance	input - output: 1 000 MΩ 500 V DC
Ambient temperature (non-condensation and/or icing)	storage: -30...+100 °C operating: -30...+80 °C

❶ Data given for ambient temperature ≤ 25 °C. Above 25 °C the maximum current decreases - see "Thermal derating curve", page 3.

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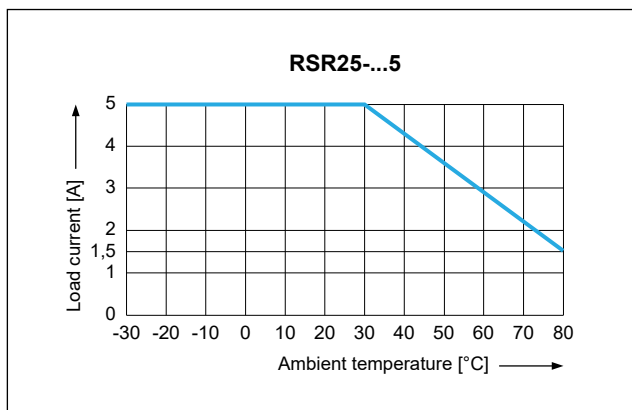
Mechanical data

	RSR25-...
Dimensions (L x W x H)	44,5 x 10,5 x 26 mm
Weight (typical)	20 g
Application	PCB

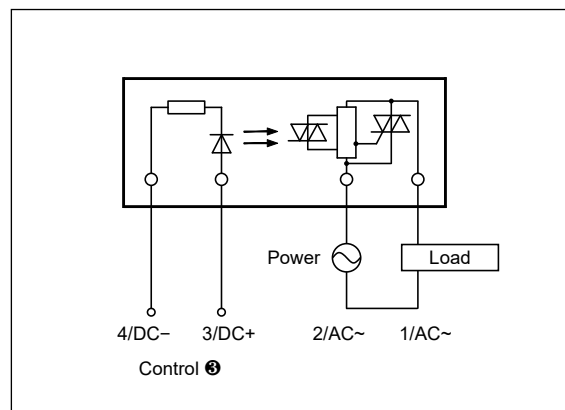
Mounting

Relays **RSR25-...-B** are designed for direct PCB mounting ②.

Thermal derating curve

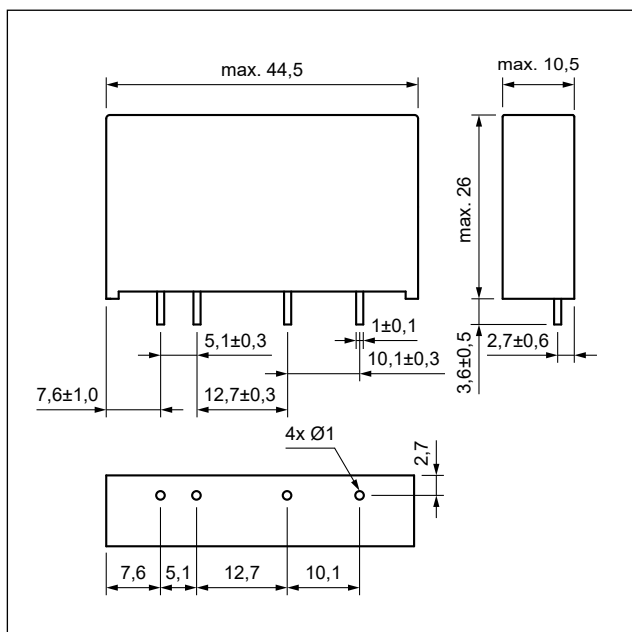


Connection diagram



② Soldering must be finished within 10 seconds at 260 °C or within 5 seconds at 350 °C (otherwise it may cause damage to the relay).
 ③ Terminal polarity must be observed (otherwise it may cause damage to the relay).

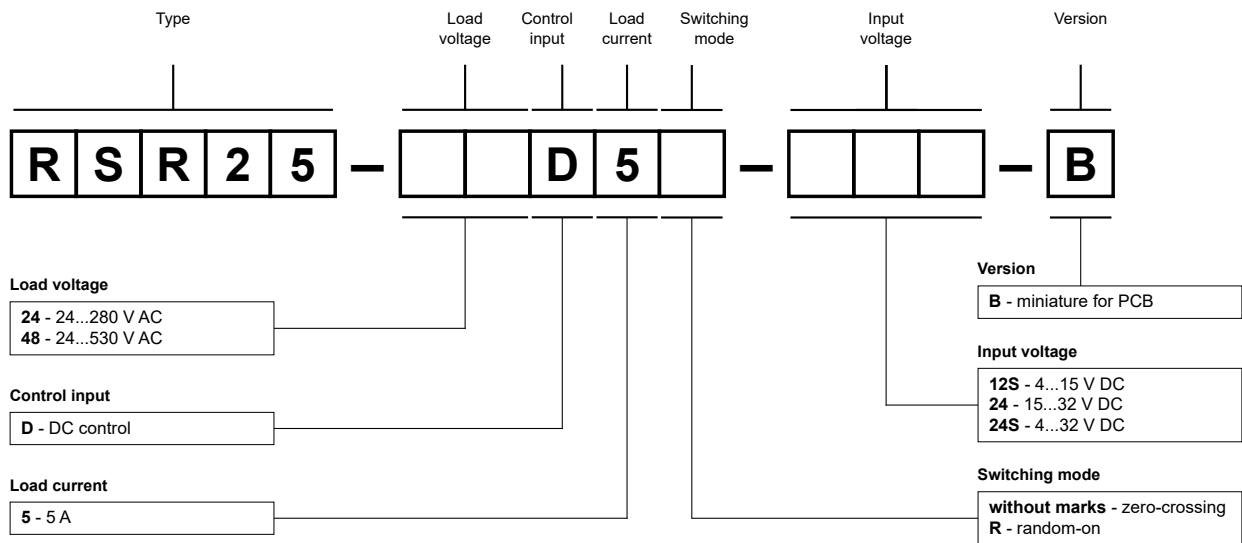
Dimensions



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Ordering codes



Examples of ordering codes ④:

- RSR25-24D5-24-B** relay **RSR25-...-B**, miniature for PCB, zero-crossing switching, DC control, input voltage 15...32 V DC, load voltage 24...280 V AC (single-phase), load current 5 A
- RSR25-48D5-12S-B** relay **RSR25-...-B**, miniature for PCB, zero-crossing switching, DC control, input voltage 4...15 V DC, load voltage 24...530 V AC (single-phase), load current 5 A
- RSR25-24D5R-24S-B** relay **RSR25-...-B**, miniature for PCB, random-on switching, DC control, input voltage 4...32 V DC, load voltage 24...280 V AC (single-phase), load current 5 A

④ Ordering codes **RSR25-...-B** are specified in table "Type" on page 1.