



# RSR32

## single-phase solid state relays, miniature



- Zero-crossing or random-on switching
- DC control input
- TTL drive compatible
- Load current 2 A
- Max. load voltage 280 V AC (single-phase)
- Dielectric strength 2 500 Vrms (opto-isolation)
- Suitable for PCB mounted
- Recognitions, certifications, directives: RoHS, REACH,  

### Applications

Electric heaters, motors, incandescent and fluorescent lighting.



### Basic technical data

Load voltage: 48...280 V AC

Control input: DC

Load current: 2 A

Type		zero-crossing	random-on
Load voltage	Control voltage	Load current	
		2 A	
48...280 V AC	5 V DC	<b>RSR32-24D2-5M</b>	<b>RSR32-24D2R-5M</b>
	12 V DC	<b>RSR32-24D2-12M</b>	<b>RSR32-24D2R-12M</b>
	24 V DC	<b>RSR32-24D2-24M</b>	<b>RSR32-24D2R-24M</b>

### Load voltage

	<b>RSR32-24...</b>
Rated load voltage	240 V AC
Rated range of load voltage	48...280 V AC
Blocking voltage	600 V <sub>pk</sub>
Rated frequency	47...63 Hz
Power factor	0,5

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### Control input

zero-crossing

	<b>RSR32-..D.-5.</b>	<b>RSR32-..D.-12.</b>	<b>RSR32-..D.-24.</b>
Control voltage range	4...6 V DC	9,6...14,4 V DC	19,2...28,8 V DC
Must turn-on voltage	4 V DC	9,6 V DC	19,2 V DC
Must turn-off voltage	1 V DC	1 V DC	1 V DC
Zero voltage turn-on	≤ 30 V	≤ 30 V	≤ 30 V
Maximum input current	25 mA 6 V DC	25 mA 14,4 V DC	25 mA 28,8 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

	<b>RSR32-..D.R-5.</b>	<b>RSR32-..D.R-12.</b>	<b>RSR32-..D.R-24.</b>
Control voltage range	4...6 V DC	9,6...14,4 V DC	19,2...28,8 V DC
Must turn-on voltage	4 V DC	9,6 V DC	19,2 V DC
Must turn-off voltage	1 V DC	1 V DC	1 V DC
Maximum input current	25 mA 6 V DC	25 mA 14,4 V DC	25 mA 28,8 V DC
Response time pick-up	≤ 1 ms	≤ 1 ms	≤ 1 ms
Response time drop-out	≤ 1/2 cycle + 1 ms	≤ 1/2 cycle + 1 ms	≤ 1/2 cycle + 1 ms

### Output circuit

	<b>RSR32-...2...</b>
Rated load current	2 A
Rated load range	0,1...2 A
Maximum surge current	40 A 10 ms
I <sup>2</sup> t for fusing	8 A <sup>2</sup> s 10 ms
Max. operational current AC-51 rating	2 A
Max. operational current AC-53 rating	0,4 A
Min. operational current	100 mA
Maximum off-state leakage current (at rated load voltage)	1,5 mA
Maximum on-state voltage drop (at rated current)	1,5 V <sub>rms</sub>
Minimum off-state dV/dt (at max. rated voltage)	200 V/μs

### General data

	<b>RSR32-...</b>
Dielectric strength	input - output: 2 500 V <sub>rms</sub> 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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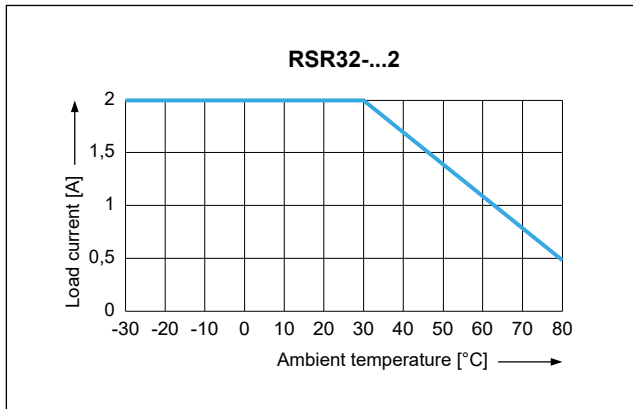
## Mechanical data

	RSR32-...
Dimensions (L x W x H)	28 x 5,2 x 15 mm
Weight (typical)	4 g
Protection category EN 60529	IP 00
Application	PCB
Solder bath temperature	max. 260 °C max. 10 s max. 350 °C max. 5 s

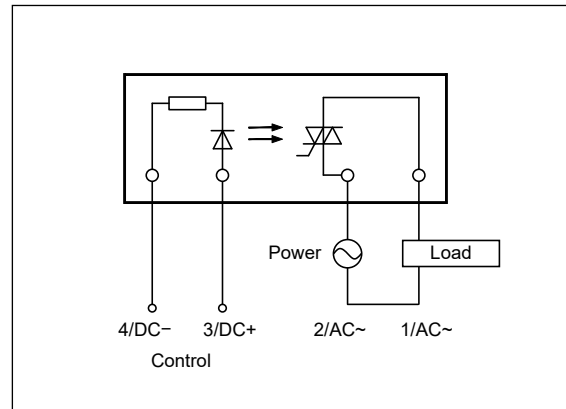
## Mounting

Relays **RSR32** are designed for direct PCB mounting.

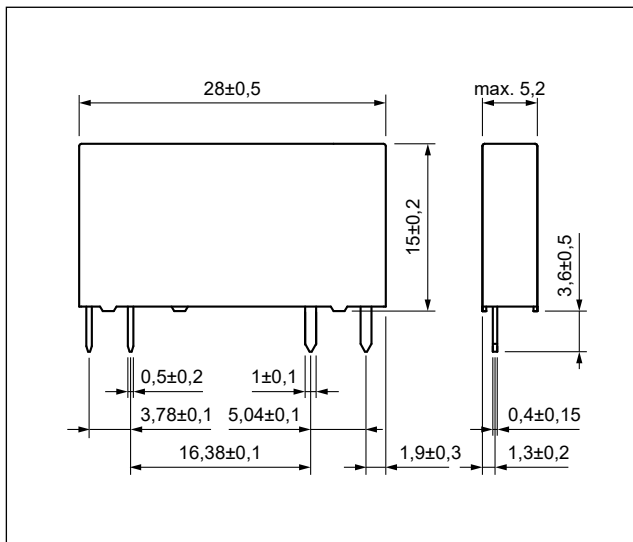
## Thermal derating curve



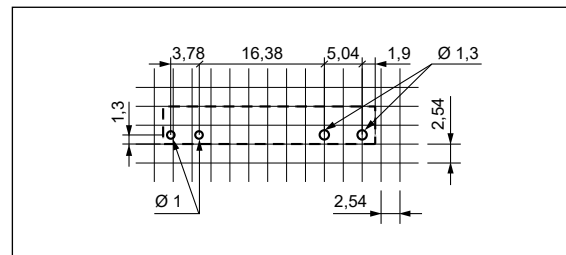
## Connection diagram



## Dimensions



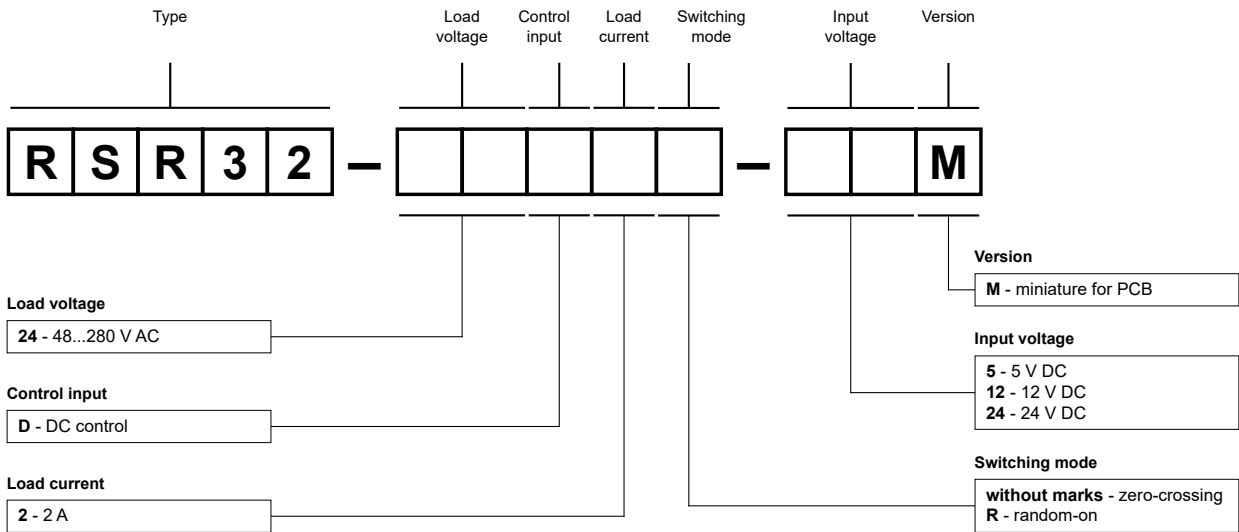
## Pinout (solder side view)



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## Ordering codes



Examples of ordering codes ☺:

**RSR32-24D2-5M**

relay **RSR32**, miniature for PCB, zero-crossing switching, DC control, input voltage 5 V DC, load voltage 48...280 V AC (single-phase), load current 2 A

**RSR32-24D2R-24M**

relay **RSR32**, miniature for PCB, random-on switching, DC control, input voltage 24 V DC, load voltage 48...280 V AC (single-phase), load current 2 A

☺ Ordering codes **RSR32** are specified in table "Type" on page 1.