

Power PCB Relay RZ

- 1 pole 12/16 A, 1 form C (CO) or 1 form A (NO) contact
- DC coil 400 mW
- 5kV/10mm coil-contact, reinforced insulation
- Ambient temperature 85°C
- Product in accordance to IEC 60335-1
- Reflow version for THR mounting process



Typical applications
Household appliances, boiler control, timers, garage door control, POS automation



F0305-A

Approvals

VDE Cert. No. 40023970, UL E214025, CQC 12002066685
Technical data of approved types on request

| Contact Data | 12A | 16A |
|---|----------------------------------|--------|
| Contact arrangement | 1 form C (CO) or 1 form A (NO) | |
| Rated voltage | 250VAC | |
| Max. switching voltage | 400VAC | |
| Rated current | 12A | 16A |
| Limiting making current (form A contact) | | |
| max. 4s, duty factor 10% | 30A | |
| max. 20ms (incandescent lamp); AgSnO ₂ | 80A | |
| Breaking capacity max. | 3000VA | 4000VA |
| Contact material | AgNi 90/10 or AgSnO ₂ | |
| Frequency of operation, with/without load | 360/72000h ⁻¹ | |
| Operate/release time max. | 8/6ms | |
| Bounce time max., form A/form B | 4/10ms | |

Contact ratings for standard version

| Type | Contact | Load | Cycles |
|------------------|---------|---------------------|---------------------|
| IEC 61810 | | | |
| RZ03-1A4 | A (NO) | 16A, 250VAC, 85°C | 50x10 ³ |
| RZ03-1C4 | C (CO) | 16A, 250VAC, 85°C | 10x10 ³ |
| RZ01-1A3 | A (NO) | 12A, 250VAC, 85°C | 100x10 ³ |
| RZ01-1A4 | A (NO) | 12A, 250VAC, 85°C | 50x10 ³ |
| RZ01-1C4 | C (CO) | 12A, 250VAC, 85°C | 30x10 ³ |
| RZ01/3-1A4 | A (NO) | 10A, 250VAC, 85°C | 150x10 ³ |
| RZ0H-1A4 | A (NO) | 12A, 250VAC, 85°C | 150x10 ³ |
| RZ0H-1A4 | A (NO) | 16A, 250VAC, 85°C | 50x10 ³ |
| RZ0H-1A4 | A (NO) | 18A, 250VAC, 85°C | 30x10 ³ |
| UL 508 | | | |
| RZ03-1A. | A (NO) | 16A, 250VAC, 85°C | 50x10 ³ |
| RZ03-1A4 | A (NO) | 12A, 250VAC, 85°C | 150x10 ³ |
| RZ01-1A3 | A (NO) | 12A, 250VAC, 85°C | 50x10 ³ |
| RZ03-1.4 | A (NO) | B300, R300, 85°C | 6x10 ³ |
| RZ03-1.4 | A (NO) | 12A, 250VAC, 85°C | 100x10 ³ |
| RZ03-1.4 | A (NO) | 1/2HP, 125VAC, 85°C | 6x10 ³ |
| RZ03-1A. | A (NO) | 1HP, 277VAC, 85°C | 30x10 ³ |

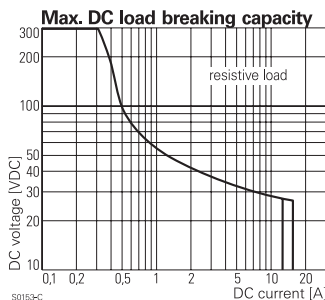
Contact ratings for RZ reinforced flux proof version

| Type | Contact | Load | Cycles |
|-------------------|---------|-------------------|--------------------|
| IEC 61810 | | | |
| RZ03-1C3-D...-R | A (NO) | 16A, 250VAC, 85°C | 30x10 ³ |
| RZ03-1C3-D...-R | C (CO) | 16A, 250VAC, 85°C | 6x10 ³ |
| RZ01-1C3-D...-R | A (NO) | 12A, 250VAC, 85°C | 30x10 ³ |
| RZ01-1C3-D...-R | C (CO) | 12A, 250VAC, 85°C | 6x10 ³ |
| RZ03-1C4-D...-R | A (NO) | 16A, 250VAC, 85°C | 30x10 ³ |
| RZ03-1C4-D...-R | C (CO) | 16A, 250VAC, 85°C | 6x10 ³ |
| RZ02/3-1C4-D...-R | A (NO) | 12A, 250VAC, 85°C | 50x10 ³ |
| RZ02/3-1C4-D...-R | C (CO) | 12A, 250VAC, 85°C | 20x10 ³ |
| UL 508 | | | |
| RZ03-1C3-D...-R | A (NO) | 16A, 277VAC, 85°C | 30x10 ³ |
| RZ03-1C3-D...-R | C (CO) | 16A, 277VAC, 85°C | 6x10 ³ |
| RZ01-1C3-D...-R | A (NO) | 12A, 277VAC, 85°C | 30x10 ³ |
| RZ01-1C3-D...-R | C (CO) | 12A, 277VAC, 85°C | 6x10 ³ |
| RZ03-1C4-D...-R | A (NO) | 16A, 277VAC, 85°C | 30x10 ³ |
| RZ03-1C4-D...-R | C (CO) | 16A, 277VAC, 85°C | 6x10 ³ |
| RZ02/3-1C4-D...-R | A (NO) | 12A, 277VAC, 85°C | 50x10 ³ |
| RZ02/3-1C4-D...-R | C (CO) | 12A, 277VAC, 85°C | 20x10 ³ |

Contact ratings for RZ reflow version

| Type | Contact | Load | Cycles |
|------------------|---------|----------------------|---------------------|
| IEC 61810 | | | |
| RZR3-1C4-D...-R | A (NO) | 16A, 250Vac, 85°C | 30x10 ³ |
| RZR1-1C4-D...-R | C (CO) | 12A, 250Vac, 85°C | 20x10 ³ |
| RZR1-1C4-D...-R | A (NO) | 12.5A, 400Vac, 85°C | 50x10 ³ |
| UL 508 | | | |
| RZR3-1C4-D...-R | A (NO) | 16A, 277Vac, 85°C | 30x10 ³ |
| RZR1-1C4-D...-R | C (CO) | 12A, 277Vac, 85°C | 30x10 ³ |
| RZR1-1C4-D...-R | A (NO) | 1HP, 277Vac, 85°C | 30x10 ³ |
| RZR3-1C4-D...-R | A (NO) | 1/8 HP, 120Vac, 85°C | 100x10 ³ |

Mechanical endurance >10x10⁶ operations



1) valid for standard cover version

Power PCB Relay RZ (Continued)

Coil Data

| | |
|---|------------|
| Coil voltage range | 3 to 48VDC |
| Operative range, IEC 61810 | 2 |
| Coil insulation system according UL1446 | class F |

Coil versions, DC coil

| Coil code | Rated voltage VDC | Operate voltage VDC | Release voltage VDC | Coil resistance $\Omega \pm 10\%$ | Rated coil power mW |
|-----------|-------------------|---------------------|---------------------|-----------------------------------|---------------------|
| D003 | 3 | 2.1 | 0.3 | 22 | 410 |
| D005 | 5 | 3.5 | 0.5 | 60 | 420 |
| D006 | 6 | 4.2 | 0.6 | 90 | 400 |
| D009 | 9 | 6.3 | 0.9 | 200 | 400 |
| D012 | 12 | 8.4 | 1.2 | 360 | 400 |
| D015 | 15 | 10.5 | 1.5 | 562 | 410 |
| D024 | 24 | 16.8 | 2.4 | 1440 | 400 |
| D048 | 48 | 33.6 | 4.8 | 5730 | 400 |

All figures are given for coil without pre-energization, at ambient temperature +23°C.
Other coil voltages on request.

Insulation Data

| | |
|------------------------------------|-----------------------|
| Initial dielectric strength | |
| between open contacts | 1000V _{rms} |
| between contact and coil | 5000V _{rms} |
| Clearance/creepage | |
| between contact and coil | $\geq 10/10\text{mm}$ |
| Material group of insulation parts | IIIa |
| Tracking index of relay base | PTI250V |

Other Data

Material compliance: EU RoHS/ELV, China RoHS, REACH, Halogen content refer to the Product Compliance Support Center at www.te.com/customer-support/rohssupportcenter

| | |
|--|------------------------------|
| Resistance to heat and fire | |
| standard and reflow cover version | according EN 60335-1, par.30 |
| Ambient temperature | |
| standard version | -40 to 85°C |
| Category of environmental protection | |
| IEC 61810 | RTII - flux proof |
| Vibration resistance (functional), 30 to 500Hz | |
| closing form A contact | >15g |
| opening form A contact | >20g |
| opening form B contact | >5g |
| Shock resistance (destructive) | 100g |

Other Data

| | |
|------------------------------|---|
| Terminal type | |
| standard version | PCB -THT ²⁾ |
| reinforced sealed version | PCB -THT, plug-in |
| reflow version | PCB -THR |
| Mounting distance | $\geq 0\text{mm}$ |
| Weight | 10g |
| Resistance to soldering heat | |
| THT, IEC 60068-2-20 | RTII 270°C/10s |
| THR: reflow version forced | gas convection ³⁾ or vapour phase ⁴⁾ |
| temperature profile | according EN61730 |
| Packaging/unit | tube/20 pcs., box/500 pcs. |

2) The use of foaming flux is not permitted.

3) Infrared heating not allowed

4) Recommended fluid LS-230

5) only for reflow version 2,5mm

6) only for reflow version 15,7 +0,3/-0mm

Accessories

For details see datasheet [Accessories Industrial Power Relay RT](#)

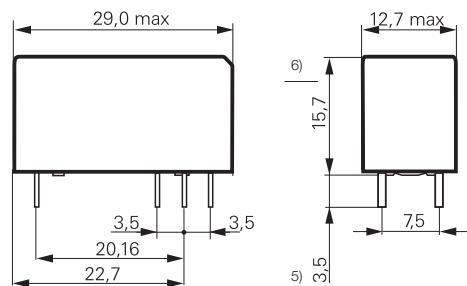
NOTE: indicated contact ratings and electrical endurance data for direct wiring of relays (according IEC 61810-1); for relays mounted on sockets deratings may apply.

Coil operating range RZ 1pol DC-coil



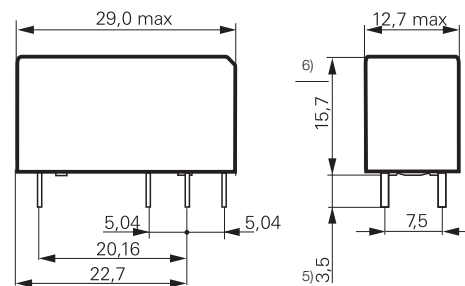
Dimensions

12A, pinning 3.5mm



S0557-AB

12A, 16A, pinning 5mm



S0557-AA

5) only for reflow version 2,5mm
6) only for reflow version 15,7 +0,3/-0mm

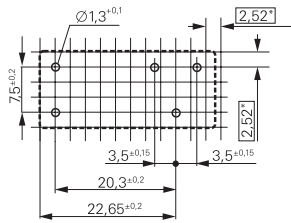
5) only for reflow version 2,5mm
6) only for reflow version 15,7 +0,3/-0mm

Power PCB Relay RZ (Continued)

PCB layout / terminal assignment

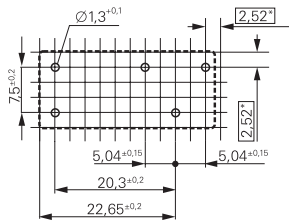
Bottom view on solder pins

12A, pinning 3.5mm



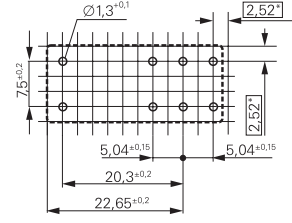
S0418-CB

12A, pinning 5mm



S0418-CN

16A, pinning 5mm



S0418-CA

1 form C (CO) contact



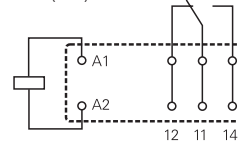
S0163-BG

1 form C (CO) contact



S0163-BC

1 form C (CO) contact



S0163-BE

1 form A (NO) contact



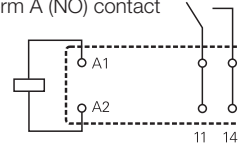
S0163-BH

1 form A (NO) contact



S0163-BD

1 form A (NO) contact

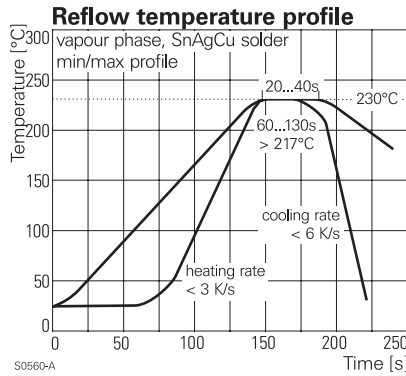


S0163-BF

Process conditions for Reflow soldering
according to EN61760-1

Recommended pcb hole for manual mounting:
Ø1.3mm

For automated mounting please ask for
detailed drawing.



S0560-A



S0561-A

Product code structure

Typical product code

RZ **0** **3** **-1C** **4** **-D012**

| | |
|---|---|
| Type RZ Power PCB Relay RZ | |
| Version 0 standard version | R reflow version (only with AgNi contacts and reinforced cover) |
| Version 1 3.5mm pinning, 12 A | 3 5mm double pinning, 16 A |
| Version 2 5mm pinning, 12 A | H High Performance 5mm double pinning, 16 A |
| Contact configuration | |
| 1A 1 form A (1 NO) contact | 1C 1 form C (1 CO) contact |
| Contact material | |
| 4 AgNi 90/10 | 3 AgSnO ₂ |
| Coil version Coil code: please refer to coil versions table | |
| Cover version | |
| blank standard (hot-stamped) | R reinforced flux proof (epoxy) and Plug-In capable (only AgNi contact versions) |

Power PCB Relay RZ (Continued)

| Product code | Version | Contacts | Contact material | Coil | Part number |
|-----------------|---|---------------|--------------------|-------|-------------|
| RZ01-1A3-D005 | 12A | 1 form A (NO) | AgSnO ₂ | 5VDC | 3-1415899-7 |
| RZ01-1A3-D006 | pinning 3.5mm | | | 6VDC | 3-1415899-8 |
| RZ01-1A3-D012 | | | | 12VDC | 3-1415899-9 |
| RZ01-1A3-D024 | | | | 24VDC | 4-1415899-0 |
| RZ01-1A3-D048 | | | | 48VDC | 4-1415899-1 |
| RZ01-1A4-D005 | | | AgNi 90/10 | 5VDC | 1415899-1 |
| RZ01-1A4-D006 | | | | 6VDC | 1415899-2 |
| RZ01-1A4-D009 | | | | 9VDC | 1415899-3 |
| RZ01-1A4-D012 | | | | 12VDC | 1415899-4 |
| RZ01-1A4-D024 | | | | 24VDC | 1415899-5 |
| RZ01-1A4-D048 | | | | 48VDC | 1415899-6 |
| RZ01-1C3-D005 | | 1 form C (CO) | AgSnO ₂ | 5VDC | 4-1415899-2 |
| RZ01-1C3-D006 | | | | 6VDC | 4-1415899-3 |
| RZ01-1C3-D012 | | | | 12VDC | 4-1415899-4 |
| RZ01-1C3-D024 | | | | 24VDC | 4-1415899-5 |
| RZ01-1C3-D048 | | | | 48VDC | 4-1415899-6 |
| RZ01-1C4-D005 | | | AgNi 90/10 | 5VDC | 1415899-7 |
| RZ01-1C4-D006 | | | | 6VDC | 1415899-8 |
| RZ01-1C4-D009 | | | | 9VDC | 1415899-9 |
| RZ01-1C4-D012 | | | | 12VDC | 1-1415899-0 |
| RZ01-1C4-D024 | | | | 24VDC | 1-1415899-1 |
| RZ01-1C4-D048 | | | | 48VDC | 1-1415899-2 |
| RZ03-1A3-D005 | 16A | 1 form A (NO) | AgSnO ₂ | 5VDC | 4-1415899-7 |
| RZ03-1A3-D006 | pinning 5mm | | | 6VDC | 4-1415899-8 |
| RZ03-1A3-D012 | | | | 12VDC | 4-1415899-9 |
| RZ03-1A3-D024 | | | | 24VDC | 5-1415899-0 |
| RZ03-1A3-D048 | | | | 48VDC | 5-1415899-1 |
| RZ03-1A4-D005 | | | AgNi 90/10 | 5VDC | 1-1415899-3 |
| RZ03-1A4-D006 | | | | 6VDC | 1-1415899-4 |
| RZ03-1A4-D009 | | | | 9VDC | 1-1415899-5 |
| RZ03-1A4-D012 | | | | 12VDC | 1-1415899-6 |
| RZ03-1A4-D024 | | | | 24VDC | 1-1415899-7 |
| RZ03-1A4-D048 | | | | 48VDC | 1-1415899-8 |
| RZ03-1C3-D005 | | 1 form C (CO) | AgSnO ₂ | 5VDC | 5-1415899-2 |
| RZ03-1C3-D006 | | | | 6VDC | 5-1415899-3 |
| RZ03-1C3-D012 | | | | 12VDC | 5-1415899-4 |
| RZ03-1C3-D024 | | | | 24VDC | 5-1415899-5 |
| RZ03-1C3-D048 | | | | 48VDC | 5-1415899-6 |
| RZ03-1C4-D005 | | | AgNi 90/10 | 5VDC | 1-1415899-9 |
| RZ03-1C4-D006 | | | | 6VDC | 2-1415899-0 |
| RZ03-1C4-D009 | | | | 9VDC | 2-1415899-1 |
| RZ03-1C4-D012 | | | | 12VDC | 2-1415899-2 |
| RZ03-1C4-D015 | | | | 15VDC | 8-1415899-2 |
| RZ03-1C4-D024 | | | | 24VDC | 2-1415899-3 |
| RZ03-1C4-D048 | | | | 48VDC | 2-1415899-4 |
| RZ03-1C4-D012-R | 16A, pinning 5mm | 1 form C (CO) | AgNi 90/10 | 12VDC | 7-1415899-7 |
| RZ03-1C4-D024-R | reinforced flux proof | | | 24VDC | 7-1415899-9 |
| RZ0H-1A4-D012 | 16A, pinning 5mm, High Performance | 1 form A (NO) | AgNi 90/10 | 12VDC | 9-1415899-4 |
| RZ03-1A3-D012-R | 16A, pinning 5mm, reinforced flux proof | 1 form A (NO) | AgSnO ₂ | 12VDC | 4-215800-2 |
| RZR3-1A4-D012 | 16A, pinning 5mm, reinforced flux proof and reflow solderable | 1 form A (NO) | AgNi90/10 | 12VDC | tbd |
| RZR3-1C4-D012 | 16A, pinning 5mm, reinforced flux proof and reflow solderable | 1 form C (CO) | AgNi90/10 | 12VDC | tbd |

This list represents the most common types and does not show all variants covered by this datasheet.
Other types on request