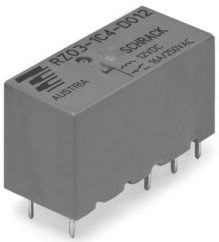
Power PCB Relay RZ

- **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

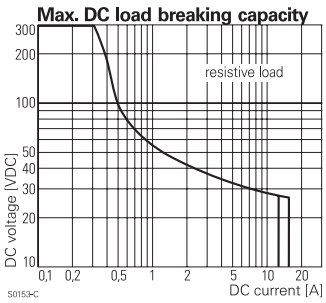
Approvals

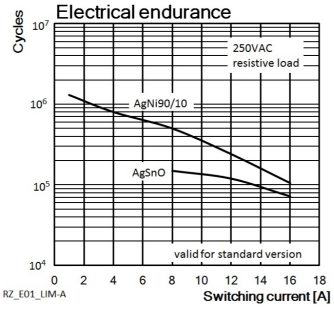
VDE Cert. No. 40023970, UL E214025, CQC 12002066685
Technical data of approved types on request

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	$20x10^3$
IEC 60947-5-1			
RZ03-1.4	A (NO)	250VAC/6A AC-15	6.050
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	$100x10^3$

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Power PCB Relay RZ (Continued)

Mechanical endurance	>10x10^6 operations

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 Ω±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	≥10/10mm
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/customersupport/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	≥0mm
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.

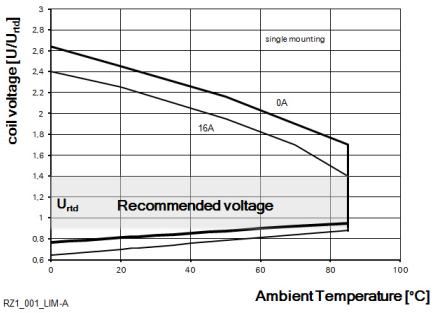
2) The use of foaming flux is not permitted.
3) Infrared heating not allowed
4) Recommended fluid LS-230
5) only for reflow version 2,5mm
6) only for reflow version 15,7 +0,3/-0mm

Accessories

For details see datasheet Accessories Industrial Power Relay RT

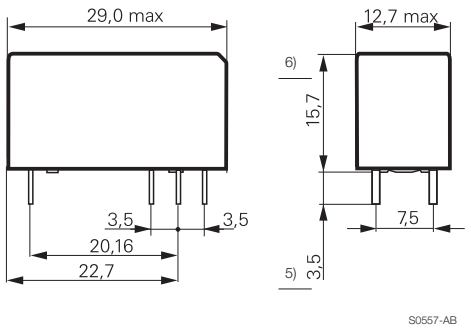
NOTE: indicated contact ratings and electrical endurance data for direct wiring of relays (according IEC 61810-1); for relays mounted on sockets deratings may apply.

Coil operating range RZ 1pol DC-coil



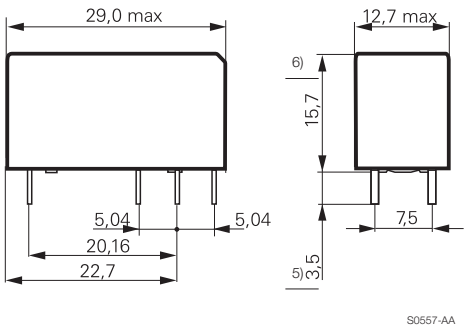
Dimensions

12A, pinning 3.5mm



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

12A, 16A, pinning 5mm



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

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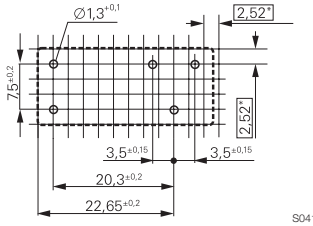
Power PCB Relay RZ (Continued)

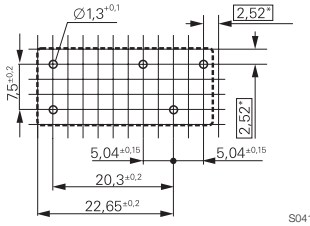
PCB layout / terminal assignment
Bottom view on solder pins

12A, pinning 3.5mm



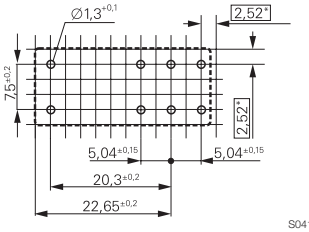
S0418-CB

12A, pinning 5mm



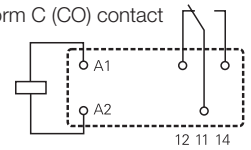
S0418-CN

16A, pinning 5mm



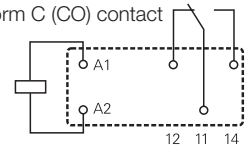
S0418-CA

1 form C (CO) contact



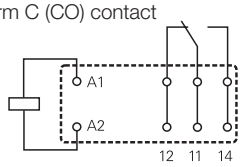
S0163-BG

1 form C (CO) contact



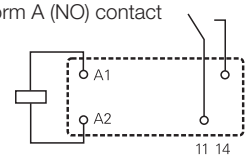
S0163-BC

1 form C (CO) contact



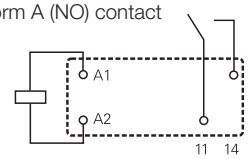
S0163-BE

1 form A (NO) contact



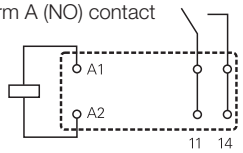
S0163-BH

1 form A (NO) contact



S0163-BD

1 form A (NO) contact



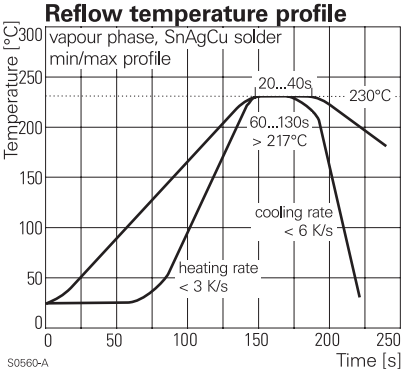
S0163-BF

Process conditions for Reflow soldering
according to EN61760-1

Recommended pcb hole for manual mounting: Ø1.3mm

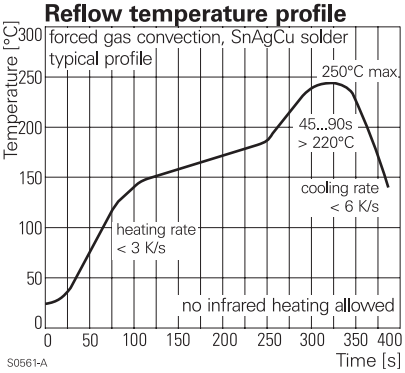
For automated mounting please ask for detailed drawing.

Reflow temperature profile



S0560-A

Reflow temperature profile



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
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)

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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
RZ03-1A4-D012-R	16A, pinning 5mm	1 form A (NO)	AgNi 90/10	12VDC	7-1415899-5
RZ03-1A4-D024-R	reinforced flux proof			24VDC	9-1415899-1
RZ03-1C4-D005-R		1 form C (CO)		5VDC	7-1415899-6
RZ03-1C4-D012-R				12VDC	7-1415899-7
RZ03-1C4-D024-R				24VDC	7-1415899-9
RZ03-1A3-D012-R		1 form A (NO)	$AgSnO_2$	12VDC	4-2158000-2
RZ0H-1A4-D012	16A, pinning 5mm, High Performance	1 form A (NO)	AgNi 90/10	12VDC	9-1415899-4
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

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