

# SCHRACK MINIATURE POWER PCB RYII & RYII REFLOW SOLDERABLE

## GENERAL PURPOSE RELAYS

### PCB RELAYS

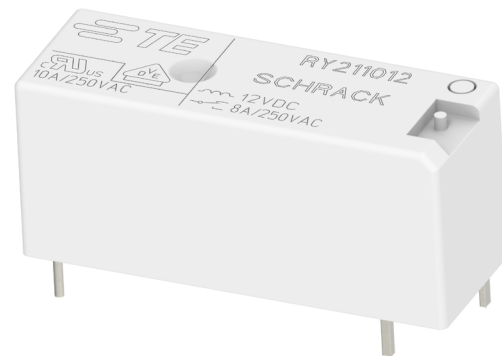
## INTRODUCTION

TE Connectivity (TE)'s Miniature Power PCB Relays RYII & RYII reflow is general purpose relay designed for various types of loads (e.g., resistive, inductive) with low component height. The relay is designed as 1 pole 8A with different contact variants: 1 form C (CO) or 1 form A (NO) or 1 form B (NC) contact.

Other advantages include: high initial dielectric strength, reinforced insulation (protection class II) and the possibility of the relay to use for the reflow-solderable process.

## FEATURES

- 1 pole 8A, 1 form C (CO) or 1 form A (NO) or 1 form B (NC) contact
- Low component height 12.3mm
- 5kV/8mm coil-contact
- Reinforced insulation (protection class II)
- Pinnings: 3.2mm and 5mm
- Reflow-solderable version
- Especially suitable for resistive and inductive loads on form A (NO) and form B (NC) contacts
- Plastic materials according to IEC 60335-1 (domestic appliances)



## APPLICATIONS

- Heating control
- Interface technology
- Domestic appliances
- Timers
- Temperature control

## APPROVALS

- VDE Cert. No. 40009639
- UL E214025

Technical data of approved types on request



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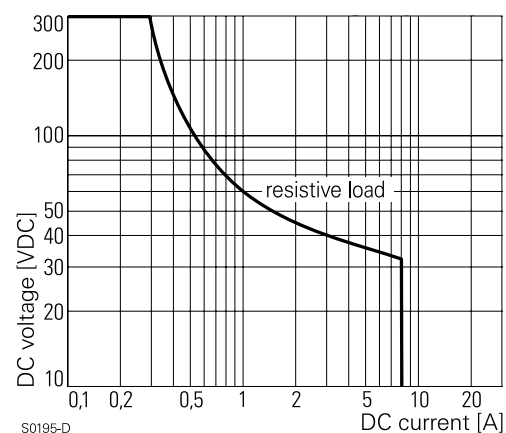
## CONTACT DATA

|                                              |                                                       |
|----------------------------------------------|-------------------------------------------------------|
| Contact arrangement                          | 1 form C (CO) or<br>1 form A (NO) or<br>1 form B (NC) |
| Rated voltage                                | 250VAC                                                |
| Max. switching voltage                       | 400VAC                                                |
| Rated current                                | 8A                                                    |
| Breaking capacity max.                       | 2000VA                                                |
| Contact material                             | AgNi0.15, AgSnO <sub>2</sub>                          |
| Frequency of operation,<br>with/without load | 6/1200min-1                                           |
| Operate/release time max.                    | 9/5ms                                                 |
| Bounce time max., form A/form B              | 6/10ms                                                |

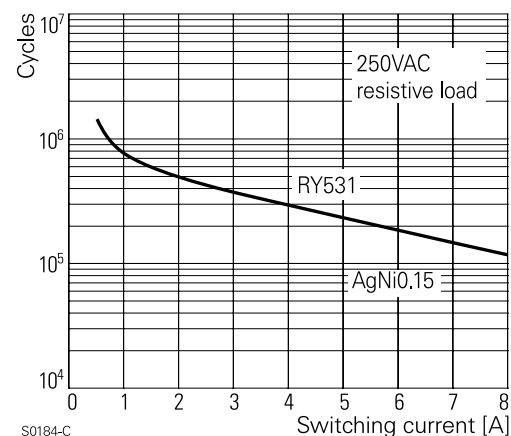
## CONTACT RATINGS

| Type                             | Contact        | Load                                  | Cycles              |
|----------------------------------|----------------|---------------------------------------|---------------------|
| <b>IEC61810</b>                  |                |                                       |                     |
| RY531                            | A (NO)         | 8A, 250VAC, 70°C                      | 100x10 <sup>3</sup> |
| RY211                            | A (NO)         | 8A, 250VAC, 75°C                      | 100x10 <sup>3</sup> |
| RY211                            | A (NO)         | 8A, 250VAC, 85°C                      | 50x10 <sup>3</sup>  |
| RY211                            | B (NC)         | 8A, 250VAC, 70°C                      | 50x10 <sup>3</sup>  |
| <b>UL61810-1 (UL508)</b>         |                |                                       |                     |
| RY211                            | A/B<br>(NO/NC) | 10A, 250VAC, general<br>purpose, 70°C | 30x10 <sup>3</sup>  |
| RY211                            | A (NO)         | 1/2hp, 240VAC, 85°C                   | 30x10 <sup>3</sup>  |
| RY211                            | B (NC)         | B300, 70°C                            | 6x10 <sup>3</sup>   |
| RY211                            | A (NO)         | 8A, 250VAC, 85°C                      | 100x10 <sup>3</sup> |
| RY211                            | A (NO)         | 8A, 24VDC, 85°C                       | 30x10 <sup>3</sup>  |
| RY211                            | A (NO)         | B300, 85°C                            | 30x10 <sup>3</sup>  |
| RY211                            | A (NO)         | C300, 105°C                           | 30x10 <sup>3</sup>  |
| RY211                            | A (NO)         | 1/3 hp, 250VAC, 85°C                  | 30x10 <sup>3</sup>  |
| RY211                            | A (NO)         | 1/4 hp, 120VAC, 70°C                  | 30x10 <sup>3</sup>  |
| <b>EN60730-1</b>                 |                |                                       |                     |
| RY211                            | A/B<br>(NO/NC) | 6(4)A, 250VAC, 85°C                   | 100x10 <sup>3</sup> |
| RY211                            | A (NO)         | 8(4)A, 250VAC, 75°C                   | 50x10 <sup>3</sup>  |
| RY211                            | A (NO)         | 8(4)A, 250VAC, 85°C                   | 30x10 <sup>3</sup>  |
| RY211                            | A (NO)         | 2(2)A, 250VAC,<br>-40 / +105°C        | 100x10 <sup>3</sup> |
| RY211                            | C (CO)         | 2(2)A, 250VAC,<br>-40 / +105°C        | 30x10 <sup>3</sup>  |
| Mechanical endurance,<br>DC coil |                | 30x10 <sup>6</sup> operations         |                     |

## MAX. DC LOAD BREAKING CAPACITY



## ELECTRICAL ENDURANCE



# SCHRACK Miniature Power PCB RYII & RYII Reflow Solderable

## General Purpose Relays

### COIL DATA

|                            |            |
|----------------------------|------------|
| Coil voltage range         | 5 to 60VDC |
| Operative range, IEC 61810 | 2          |

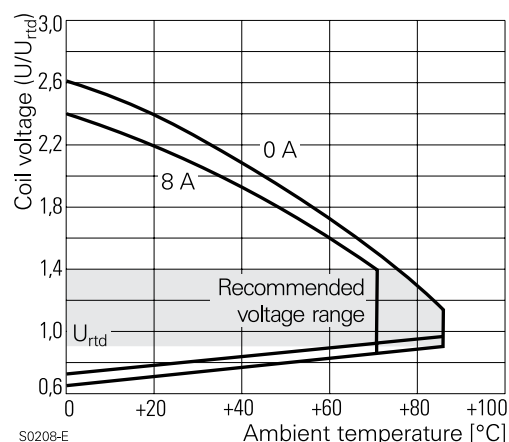
### COIL VERSIONS, DC COIL

| Coil code | Rated voltage VDC | Operate voltage VDC | Release voltage VDC | Coil resistance $\Omega \pm 10\%$ | Rated coil power mW |
|-----------|-------------------|---------------------|---------------------|-----------------------------------|---------------------|
| 005       | 5                 | 3.5                 | 0.5                 | 112                               | 223                 |
| 006       | 6                 | 4.2                 | 0.6                 | 162                               | 222                 |
| 009       | 9                 | 6.3                 | 0.9                 | 320                               | 253                 |
| 012       | 12                | 8.4                 | 1.2                 | 627                               | 230                 |
| 024       | 24                | 16.8                | 2.4                 | 2350                              | 245                 |
| 048       | 48                | 33.6                | 4.8                 | 9391                              | 245                 |
| 060       | 60                | 42.0                | 6.0                 | 14000                             | 257                 |

All figures are given for coil without pre energization, at ambient temperature +23°C.

Other coil voltages on request.

### COIL OPERATING RANGE DC



### INSULATION DATA

|                                    |                      |
|------------------------------------|----------------------|
| Initial dielectric strength        |                      |
| Between open contacts              | 1000V <sub>rms</sub> |
| Between contact and coil           | 5000V <sub>rms</sub> |
| Clearance/creepage                 |                      |
| Between contact and coil           | ≥8/8mm               |
| Material group of insulation parts | IIIa                 |
| Tracking index of relay base       | PTI250               |
| Reflow-solderable version          | PTI175               |

### OTHER DATA

|                                      |                                                                                                                                                                                                                    |
|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Material compliance                  | EU RoHS/ELV, China RoHS, REACH, Halogen content refer to the Product Compliance Support Center at <a href="http://www.te.com/customer-support/rohssupportcenter">www.te.com/customer-support/rohssupportcenter</a> |
| Ambient temperature                  | -40 to +70°C<br>+85°C at 6A                                                                                                                                                                                        |
| Category of environmental protection |                                                                                                                                                                                                                    |
| IEC 61810                            | RTII - flux proof<br>RTIII - wash tight <sup>1)</sup>                                                                                                                                                              |
| Vibration resistance (functional)    |                                                                                                                                                                                                                    |
| Form A (NO) / form B (NC)            | 20/5g                                                                                                                                                                                                              |

### OTHER DATA CONTINUED

|                                  |                                          |
|----------------------------------|------------------------------------------|
| Shock resistance (functional)    |                                          |
| Form A (NO) / form B (NC)        | 20/5g                                    |
| Shock resistance (destructive)   | 100g                                     |
| Terminal type                    | PCB-THT, PCB-THR                         |
| Weight                           | 8 g                                      |
| Resistance to soldering heat THT |                                          |
| IEC 60068-2-20                   | RTII: 270°C/10s<br>RTIII: 260°C/5s       |
| Resistance to soldering heat THR |                                          |
| IEC 60068-2-58                   | 250°C, no infrared heating allowed       |
| Packaging/unit                   |                                          |
| standard version                 | tube/20 pcs., box/500 pcs.               |
| reflow version                   | reel/280 pcs.<br>box/1120 pcs. (4 reels) |

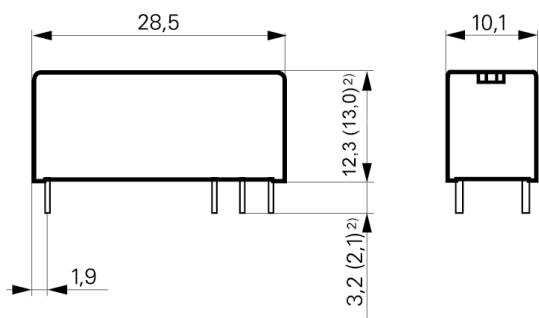
1) not available as reflow-solderable version

# SCHRACK Miniature Power PCB RYII & RYII Reflow Solderable

General Purpose Relays

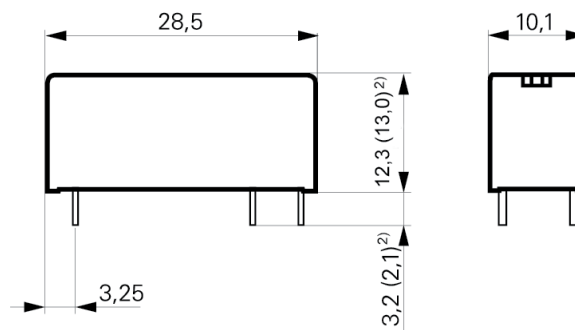
## DIMENSIONS

Pinning 3.2 mm



2) Values in brackets are valid for reflow-solderable version

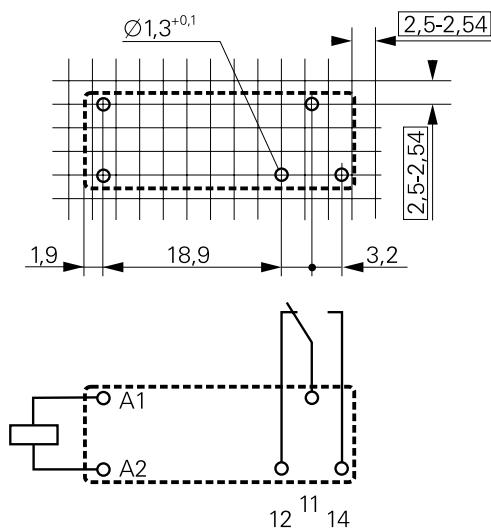
Pinning 5 mm



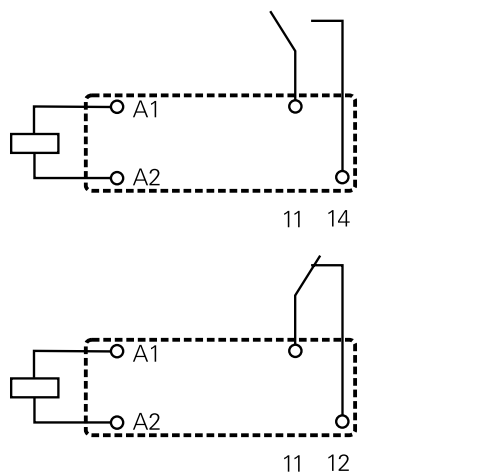
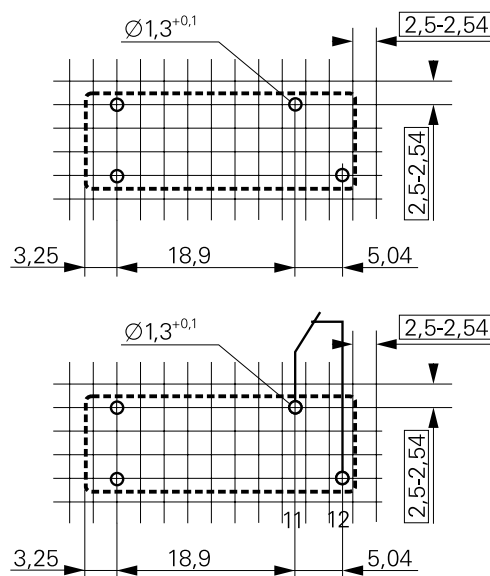
## PCB LAYOUT / TERMINAL ASSIGNMENT

Bottom view on solder pins

1 form C (CO) contact, 3.2 mm



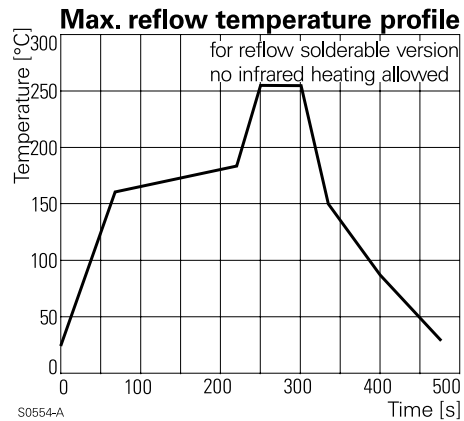
1 form A (NO), 1 form B (NC) contact 5 mm



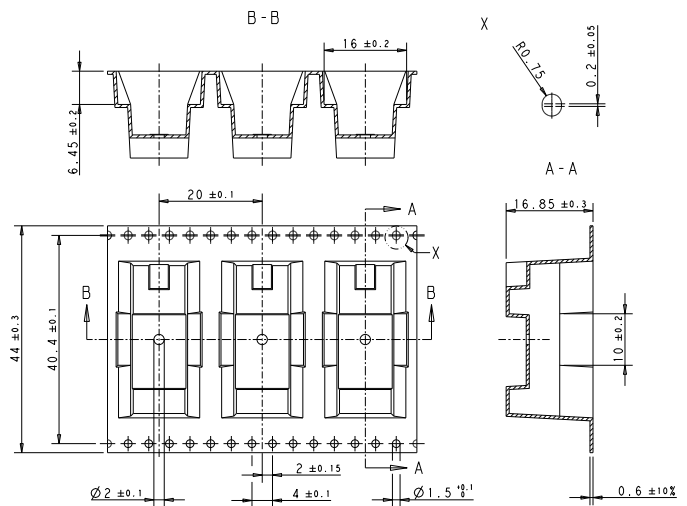
# SCHRACK Miniature Power PCB RYII & RYII Reflow Solderable

General Purpose Relays

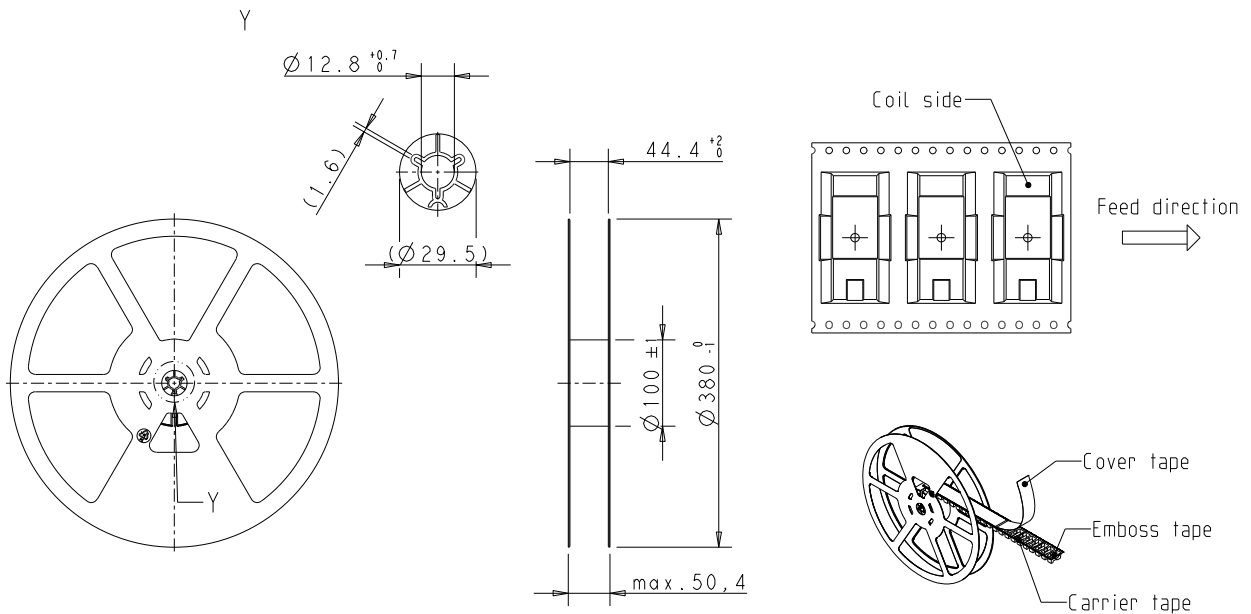
## SOLDERING PROFILE FOR REFLOW-SOLDERABLE VERSION



## TAPE DIMENSIONS



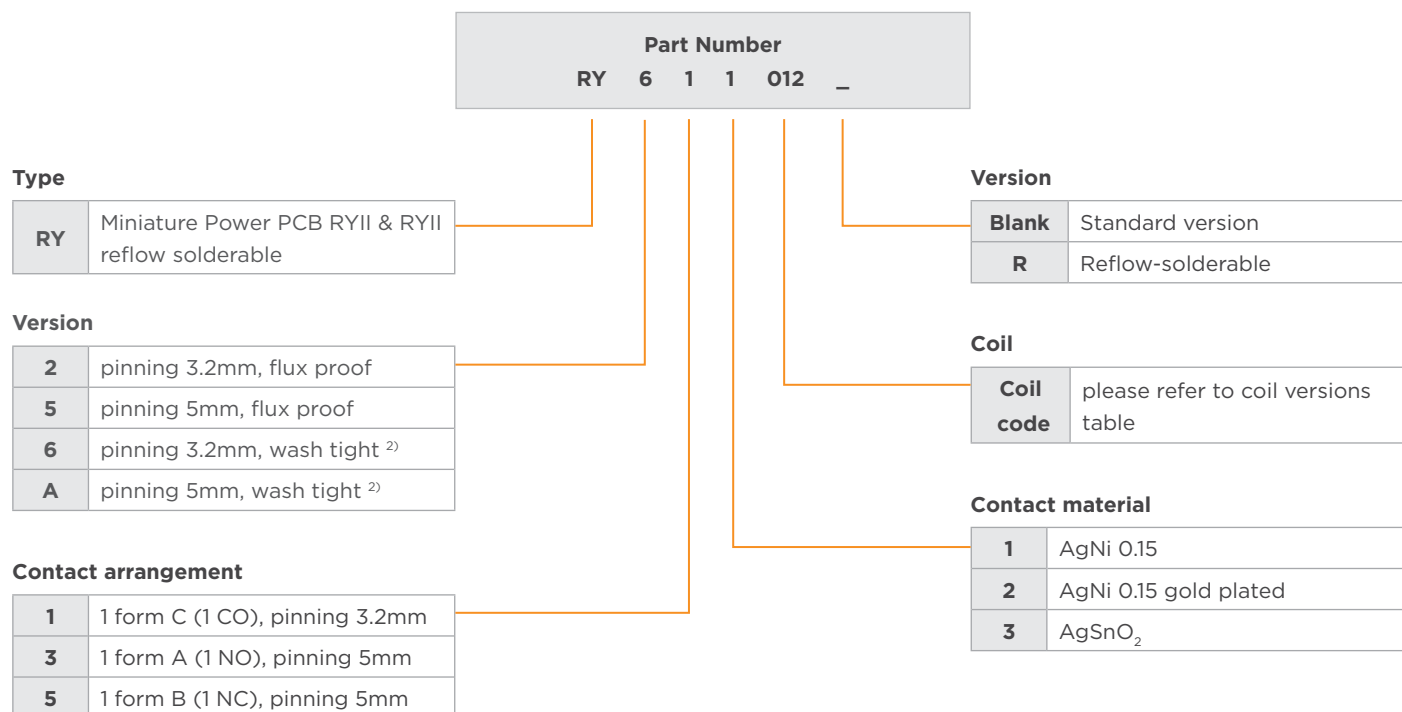
## REEL DIMENSIONS



# SCHRACK Miniature Power PCB RYII & RYII Reflow Solderable

General Purpose Relays

## PRODUCT CODE STRUCTURE



## PRODUCT INFORMATION

| Product code | Version                      | Contacts                  | Contact material         | Coil  | TE Part Number              |
|--------------|------------------------------|---------------------------|--------------------------|-------|-----------------------------|
| RY211005     | Pinning 3.2 mm<br>flux proof | 1 form C,<br>1 CO contact | AgNi 0.15                | 5VDC  | <a href="#">4-1393224-2</a> |
| RY211006     |                              |                           |                          | 6VDC  | <a href="#">4-1393224-3</a> |
| RY211012     |                              |                           |                          | 12VDC | <a href="#">4-1393224-6</a> |
| RY211024     |                              |                           |                          | 24VDC | <a href="#">4-1393224-9</a> |
| RY211048     |                              |                           |                          | 48VDC | <a href="#">5-1393224-1</a> |
| RY212005     |                              |                           | AgNi 0.15<br>gold plated | 5VDC  | <a href="#">5-1393224-2</a> |
| RY212006     |                              |                           |                          | 6VDC  | <a href="#">5-1393224-3</a> |
| RY212012     |                              |                           |                          | 12VDC | <a href="#">5-1393224-5</a> |
| RY212024     |                              |                           |                          | 24VDC | <a href="#">5-1393224-8</a> |
| RY212048     |                              |                           |                          | 48VDC | <a href="#">5-1393224-9</a> |
| RY213005     |                              |                           | AgSnO <sub>2</sub>       | 5VDC  | <a href="#">6-1393224-0</a> |
| RY213006     |                              |                           |                          | 6VDC  | <a href="#">9-1393224-0</a> |
| RY213012     |                              |                           |                          | 12VDC | <a href="#">6-1393224-1</a> |
| RY213024     |                              |                           |                          | 24VDC | <a href="#">6-1393224-2</a> |
| RY213048     |                              |                           |                          | 48VDC | <a href="#">6-1393224-3</a> |

## SCHRACK Miniature Power PCB RYII & RYII Reflow Solderable

### General Purpose Relays

| Product code | Version                      | Contacts                  | Contact material         | Coil  | TE Part Number              |
|--------------|------------------------------|---------------------------|--------------------------|-------|-----------------------------|
| RY531005     | Pinning 5 mm<br>flux proof   | 1 form A,<br>1 NO contact | AgNi 0.15                | 5VDC  | <a href="#">7-1393224-6</a> |
| RY531006     |                              |                           |                          | 6VDC  | <a href="#">7-1393224-7</a> |
| RY531012     |                              |                           |                          | 12VDC | <a href="#">7-1393224-9</a> |
| RY531024     |                              |                           |                          | 24VDC | <a href="#">8-1393224-2</a> |
| RY531048     |                              |                           |                          | 48VDC | <a href="#">8-1393224-3</a> |
| RY532012     |                              |                           | AgNi 0.15<br>gold plated | 12VDC | <a href="#">8-1393224-4</a> |
| RY532024     |                              |                           |                          | 24VDC | <a href="#">8-1393224-5</a> |
| RY533006     |                              |                           | AgSnO <sub>2</sub>       | 6VDC  | <a href="#">8-1393224-6</a> |
| RY533012     |                              |                           |                          | 12VDC | <a href="#">8-1393224-8</a> |
| RY533024     |                              |                           |                          | 24VDC | <a href="#">8-1393224-9</a> |
| RY533048     |                              |                           |                          | 48VDC | <a href="#">9-1393224-0</a> |
| RY611005     | Pinning 3.2 mm<br>wash tight | 1 form C,<br>1 CO contact | AgNi 0.15                | 5VDC  | <a href="#">1-1393225-7</a> |
| RY611006     |                              |                           |                          | 6VDC  | <a href="#">1-1393225-8</a> |
| RY611012     |                              |                           |                          | 12VDC | <a href="#">1-1393225-9</a> |
| RY611024     |                              |                           |                          | 24VDC | <a href="#">2-1393225-1</a> |
| RY611048     |                              |                           |                          | 48VDC | <a href="#">2-1393225-2</a> |
| RY612005     |                              |                           | AgNi 0.15<br>gold plated | 5VDC  | <a href="#">2-1393225-3</a> |
| RY612006     |                              |                           |                          | 6VDC  | <a href="#">2-1393225-4</a> |
| RY612012     |                              |                           |                          | 12VDC | <a href="#">2-1393225-6</a> |
| RY612024     |                              |                           |                          | 24VDC | <a href="#">2-1393225-9</a> |
| RY612048     |                              |                           |                          | 48VDC | <a href="#">3-1393225-0</a> |
| RY613005     |                              |                           | AgSnO <sub>2</sub>       | 5VDC  | <a href="#">5-1419136-2</a> |
| RY613012     |                              |                           |                          | 12VDC | <a href="#">3-1393225-1</a> |
| RY613024     |                              |                           |                          | 24VDC | <a href="#">3-1393225-3</a> |
| RY613048     |                              |                           |                          | 48VDC | <a href="#">3-1393225-4</a> |
| RY631024     |                              |                           | AgNi 0.15                | 24VDC | <a href="#">4-1415400-1</a> |
| RYA31005     |                              |                           |                          | 5VDC  | <a href="#">1393224-7</a>   |
| RYA31006     |                              |                           | AgNi 0.15                | 6VDC  | <a href="#">1393224-8</a>   |
| RYA31012     |                              |                           |                          | 12VDC | <a href="#">1393224-9</a>   |
| RYA31024     |                              |                           |                          | 24VDC | <a href="#">1-1393224-2</a> |
| RYA31048     |                              |                           |                          | 48VDC | <a href="#">1-1393224-3</a> |
| RYA32005     | Pinning 5 mm<br>wash tight   | 1 form A,<br>1 NO contact | AgNi 0.15<br>gold plated | 5VDC  | <a href="#">1-1393224-4</a> |
| RYA32006     |                              |                           |                          | 6VDC  | <a href="#">8-1393224-8</a> |
| RYA32012     |                              |                           |                          | 12VDC | <a href="#">1-1393224-6</a> |
| RYA32024     |                              |                           |                          | 24VDC | <a href="#">1-1393224-8</a> |
| RYA33005     |                              |                           | AgSnO <sub>2</sub>       | 5VDC  | <a href="#">1-1393224-9</a> |
| RYA33024     |                              |                           |                          | 24VDC | <a href="#">2-1393224-1</a> |

| Product code | Version                                          | Contacts               | Contact material | Coil  | Part Number                 |
|--------------|--------------------------------------------------|------------------------|------------------|-------|-----------------------------|
| RY211005R    | pinning 3.2mm<br>flux proof reflow<br>solderable | 1 form C, 1 CO contact | AgNi 0.15        | 5VDC  | <a href="#">1-1956170-2</a> |
| RY211012R    |                                                  |                        |                  | 12VDC | <a href="#">1-1956170-6</a> |
| RY211024R    |                                                  |                        |                  | 24VDC | <a href="#">1956164-1</a>   |
| RY531005R    | pinning 5.0mm<br>flux proof reflow<br>solderable | 1 form A, 1 NO contact |                  | 5VDC  | <a href="#">1-1956171-1</a> |
| RY531012R    |                                                  |                        |                  | 12VDC | <a href="#">1-1956171-4</a> |
| RY531024R    |                                                  |                        |                  | 24VDC | <a href="#">1-1956171-7</a> |

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