

Miniature Power PCB Relay PB

- 1pole 10 A, 1 CO or 1 NO contact
- Environmentally-friendly cadmium-free contacts
- Class F coil system standard
- Compact and simple design gives high process security
- Product in accordance to IEC60335-1
- RoHS compliant (Directive 2002/95/EC) as per product date code 0346



F0224-A

Applications

White goods, small home appliances, heating temperature controllers

Approvals

VDE REG.-Nr. 121560, cULus E214025
Technical data of approved types on request

Contact data

| | |
|--|--------------------------------|
| Contact configuration | 1 CO or 1 NO contact |
| Contact set | single contact |
| Type of interruption | micro-disconnection |
| Rated current | 10 A |
| Rated voltage / max.switching voltage AC | 250/400 VAC |
| Maximum breaking capacity AC | 2500 VA |
| Limiting making capacity, max 4 s, duty factor 10% | 15 A |
| Contact material | AgNi 90/10, AgSnO ₂ |
| Mechanical endurance | 5x10 ⁶ cycles |
| Rated frequency of operation with / without load | 6/600 min ⁻¹ |

Contact ratings

| Type | Load | Cycles |
|--------------|--|---------------------|
| PB114 | 10 A/3 A, 250 VAC, 85°C, resistive, 50Hz, EN61810-1 | 30x10 ³ |
| PB114 | (NO tested), 10 A, 250 VAC, 85°C, resistive, 50Hz, EN61810-1 | 30x10 ³ |
| PB114 | 10 A/10 A, 250 VAC, 85°C, resistive, 50Hz, EN61810-1 | 1x10 ³ |
| PB133, PB134 | 10 A, 250 VAC, 85°C, resistive, 50Hz, EN61810-1 | 20x10 ³ |
| PB134 | 6.5 A, 250 VAC, 85°C, resistive, 50Hz, EN61810-1 | 100x10 ³ |
| PB634 | 10 A, 250 VAC, 85°C, resistive, 50Hz, EN61810-1 | 100x10 ³ |

Coil data

| | PB1.. | PB5.., PB6.. |
|----------------------------------|-------------|--------------|
| Rated coil voltage range DC coil | 5...48 VDC | 5...24 VDC |
| Coil power DC coil | typ. 360 mW | typ. 500 mW |
| Operative range | 2 | |

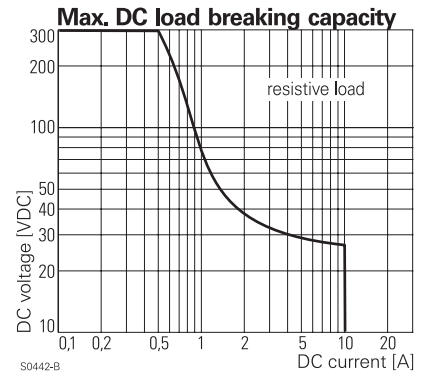
Coil versions, DC-coil

| Coil code | Rated voltage VDC | Operate voltage VDC | Release voltage VDC | Coil resistance Ohm | Rated coil power mW |
|--------------------------------------|-------------------|---------------------|---------------------|---------------------|---------------------|
| Coil versions, DC-coil, 360mW | | | | | |
| 005 | 5 | 3.75 | 0.5 | 70±10% | 357 |
| 006 | 6 | 4.5 | 0.6 | 100±10% | 360 |
| 009 | 9 | 6.75 | 0.9 | 225±10% | 360 |
| 012 | 12 | 9.0 | 1.2 | 400±10% | 360 |
| 018 | 18 | 13.5 | 1.8 | 900±10% | 360 |
| 022 | 22 | 16.5 | 2.2 | 1344±10% | 360 |
| 024 | 24 | 18.0 | 2.4 | 1600±10% | 360 |
| 048 | 48 | 36 | 4.8 | 6400±10% | 360 |
| Coil versions, DC-coil, 500mW | | | | | |
| 005 | 5 | 3.75 | 0.5 | 48±10% | 521 |
| 006 | 6 | 4.5 | 0.6 | 69±10% | 522 |
| 012 | 12 | 9 | 1.2 | 274±10% | 526 |
| 024 | 24 | 18 | 2.4 | 1097±10% | 525 |

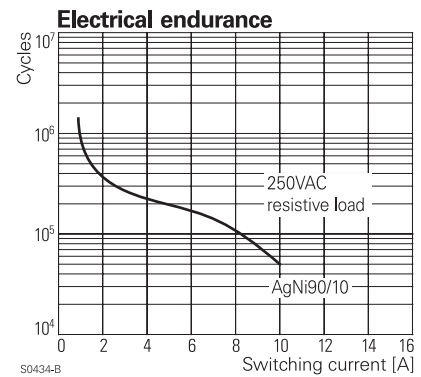
Coil versions, DC-coil, 500mW

| Coil code | Rated voltage VDC | Operate voltage VDC | Release voltage VDC | Coil resistance Ohm | Rated coil power mW |
|-----------|-------------------|---------------------|---------------------|---------------------|---------------------|
| 005 | 5 | 3.75 | 0.5 | 48±10% | 521 |
| 006 | 6 | 4.5 | 0.6 | 69±10% | 522 |
| 012 | 12 | 9 | 1.2 | 274±10% | 526 |
| 024 | 24 | 18 | 2.4 | 1097±10% | 525 |

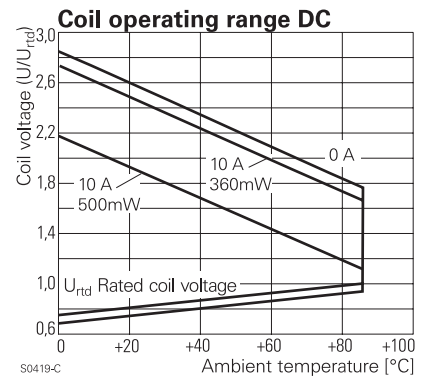
All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request



S0442-B



S0434-B



S0419-C

Miniature Power PCB Relay PB (Continued)

Insulation

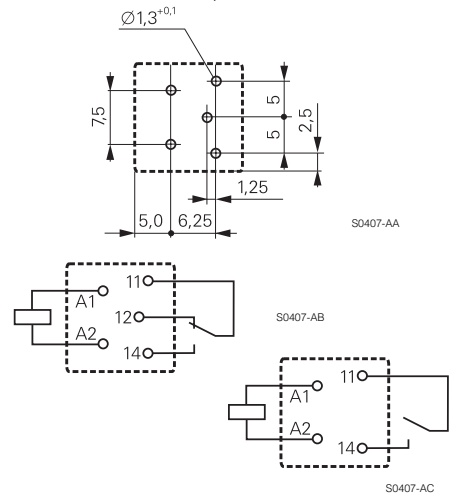
| | |
|--|-----------------------|
| Dielectric strength coil-contact circuit | 2500 V _{rms} |
| open contact circuit | 1000 V _{rms} |
| Clearance / creepage coil-contact circuit CO version | ≥ 3/4 mm |
| NO version | ≥ 4/5 mm |
| Material group of insulation parts | IIIa |
| Tracking index of relay base | CTI 250 |
| Insulation to IEC 60664-1 | |
| Type of insulation coil-contact circuit | basic |
| open contact circuit | functional |
| Rated insulation voltage | 250 V |
| Pollution degree | 3 |
| Rated voltage system | 230/400 V |
| Overvoltage category | III |

Other data

| | PB1., PB6.. | PB5.. |
|---|---|----------------------|
| RoHS - Directive 2002/95/EC | compliant as per product date code 0346 | |
| Flammability class according to UL94 | V-0 | |
| For version PB1, PB5: GWFI to IEC 60695-2-12 | ≥ 850°C | |
| GWIT to IEC 60695-2-13 | ≥ 775°C | |
| Ambient temperature range | -40...85°C | |
| Operate- / release time | < 20 ms | |
| Bounce time NO / NC contact | < 15 ms | |
| Vibration resistance (function) NO / NC contact | >10/4g 30...400Hz | >10/8g 30...400Hz |
| Shock resistance (destruction) | 100 g | |
| Category of protection | RTII - flux proof | |
| Mounting | pcb | |
| Resistance to soldering heat | 270°C / 10s | |
| Relay weight | 5.4 g | |
| Packaging unit | 35/1050 pcs | |

PCB layout ¹⁾ / terminal assignment

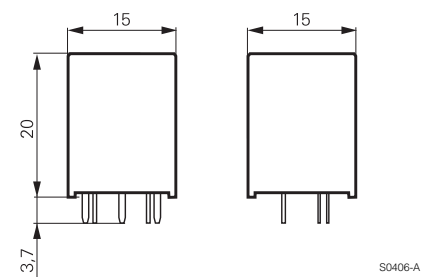
Bottom view on solder pins



¹⁾ Layout note:

No openings (e.g. holes, slots, cutouts, unused pins, open through connexions, etc.) allowed under the relay base. The relay base must be fully covered by the pcb, recommended minimum distance between the relay and the edge of the printed circuit board is 5 mm. For more information, please contact our application support.

Dimensions



Miniature Power PCB Relay PB (Continued)

Product key

| | | | | | | | |
|------------------------|--|--|--|--|--|--|--|
| Type | P B | | | | | | |
| Version | 1 standard version | | 6 high performance version (NO version only) | | | | |
| | 5 500 mW version | | | | | | |
| Contact configuration | 1 1 CO contact | | 3 1 NO contact | | | | |
| Contact material | 3 AgSnO ₂ | | 4 AgNi 90/10 | | | | |
| Coil | Coil code: please refer to coil versions table | | | | | | |
| Other types on request | | | | | | | |

| Product key | Version | Contacts | Contact material | Coil | Part number |
|-------------|-------------|--------------|------------------|--------|-------------|
| PB114005 | standard | 1 CO contact | AgNi 90/10 | 5 VDC | 6-1415029-1 |
| PB114006 | class F | | | 6 VDC | 7-1415029-1 |
| PB114012 | | | | 12 VDC | 8-1415029-1 |
| PB114024 | | | | 24 VDC | 9-1415029-1 |
| PB134005 | | 1 NO contact | | 5 VDC | 0-1415030-1 |
| PB134006 | | | | 6 VDC | 1-1415030-1 |
| PB134012 | | | | 12 VDC | 2-1415030-1 |
| PB134024 | | | | 24 VDC | 3-1415030-1 |
| PB514012 | 500 mW | 1 CO contact | | 12 VDC | 2-1415538-5 |
| PB514024 | version | | | 24 VDC | 5-1415535-6 |
| PB634005 | high | 1 NO contact | | 5 VDC | 3-1415541-8 |
| PB634006 | performance | | | 6 VDC | 3-1415541-9 |
| PB634012 | version | | | 12 VDC | 4-1415541-1 |
| PB634024 | | | | 24 VDC | 4-1415541-2 |