

**Miniature Relay PCF**

- Meet UL508 and TUV requirements
- 1 form A contact arrangement
- Quick connect terminal type and PC board type
- Meet 5000V dielectric voltage between coil and contacts
- Meet 10000V surge voltage between coil and contacts (1.2/50µs)

Typical applications  
Appliances, HVAC, office machines



**Approvals**

UL No. E58304/ TUV No. R50139097  
Technical data of approved types on request

**Contact Data**

|  |  |
|--|--|
| Contact arrangement                      | 1 form A, 1 NO   |
| Rated voltage                            | 250VAC, 277VAC, 24VDC  |
| Rated current                            | 25A  |
| Switching power                          | 6370VA   |
| Contact material                         | AgCdO, AgSnO   |
| Min. recommended contact load            | 100mA, 5VDC  |
| Initial contact resistance               | 100mΩ at 1A, 6VDC  |
| Frequency of operation with/without load | 30/300 ops./min  |
| Operate/release time max.                | 20/10ms  |
| Electrical endurance                     | 100x10 <sup>3</sup> operations at rated load   |
| Contact ratings                          | 25A, 250VAC resistive<br>23A, 277VAC resistive<br>20A, 250VAC resistive<br>20A, 250VAC inductive, cosφ=0.4 |
| Mechanical endurance                     | 10x10 <sup>6</sup> operations.   |

**Coil Data**

|                    |            |
|--------------------|------------|
| Coil voltage range | 6 to 24VDC |
|--------------------|------------|

**Coil versions, DC coil**

| Coil code | Rated voltage VDC | Operate voltage VDC | Release voltage VDC | Coil resistance Ω±10% | Rated coil power mW |
|-----------|-------------------|---------------------|---------------------|-----------------------|---------------------|
| 06        | 6                 | 4.50                | 0.30                | 40                    | 900                 |
| 09        | 9                 | 6.75                | 0.45                | 90                    | 900                 |
| 12        | 12                | 9.00                | 0.60                | 160                   | 900                 |
| 24        | 24                | 18.00               | 1.20                | 640                   | 900                 |

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

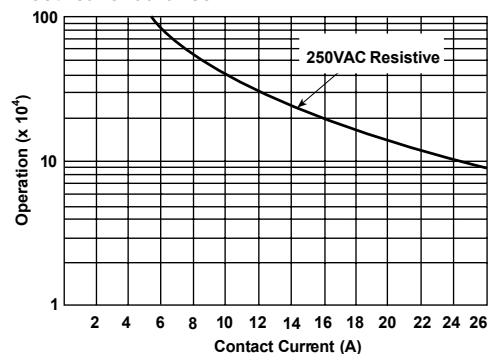
**Insulation Data**

|                                 |   |
|---------------------------------|---|
| Initial dielectric strength     | between open contacts<br>1000VAC, 50/60Hz, 1min<br>between contact and coil<br>5000VAC, 50/60Hz, 1min |
| Initial surge withstand voltage | between contact and coil<br>8000V (1.2/50µs)  |
| Initial insulation resistance   | between insulated elements<br>1000MΩ at 500VDC  |
| Clearance/creepage              | between contact and coil<br>6.7/8mm   |

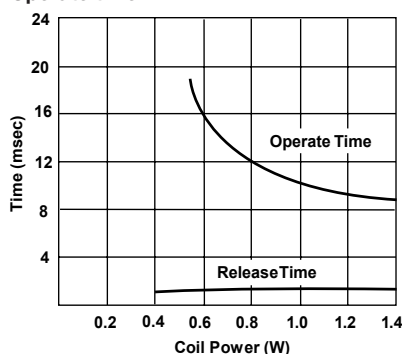
**Other Data**

|  |  |
|--|--|
| 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  | -30 to 55°C  |
| Category of environmental protection   | IEC 61810 RTII-flux proof  |
| Vibration resistance (functional), 10 to 50Hz.                                 | 1.5mm double amplitude   |
| Vibration resistance (destructive), 10 to 50Hz.                                | 1.5mm double amplitude   |
| Shock resistance (functional), half-sine wave of 6ms                           | 98m/s <sup>2</sup>   |
| Shock resistance (destructive), half-sine wave of 11ms, permitted duration 1ms | 980m/s <sup>2</sup>  |
| Weight   | 28g  |
| Resistance to soldering heat THT   | IEC 60068-2-20 260°C/10s   |
| Packaging/unit   | tube/20 pcs., box/500 pcs.   |

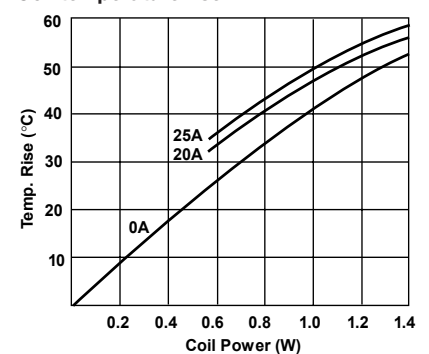
**Electrical endurance**



**Operate time**



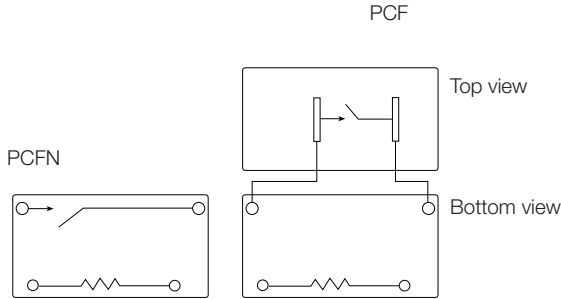
**Coil temperature rise**



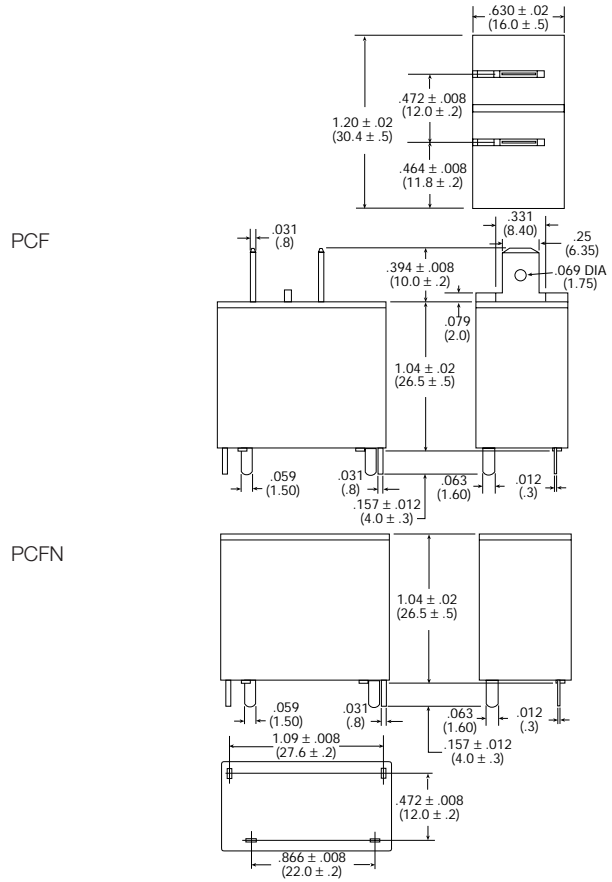
**Miniature Relay PCF** (Continued)

**Terminal assignment**

Bottom view on solder pins

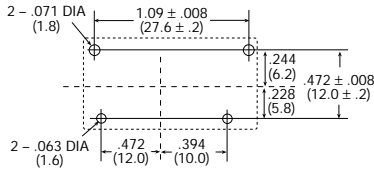


**Dimensions**



**PCB layout**

Bottom view on solder pins



**Product code structure**

Typical product code

**PCF -1 12 D 1 M ,000**

|                            |   |
|----------------------------|---|
| <b>Type</b>                | <b>PCF</b> Miniature Relay PCF  |
| <b>Terminals/mounting</b>  | <b>Blank</b> Quick connect terminals<br><b>N</b> PC board terminals<br><b>L</b> Low profile flange case |
| <b>Contact Form</b>        | <b>1</b> 1 pole   |
| <b>Coil Voltage</b>        | Coil code: please refer to coil version table (e.g. 12=12VDC)   |
| <b>Coil Input</b>          | <b>D</b> Standard   |
| <b>Contact Material</b>    | <b>1</b> AgCdO <b>2</b> AgSnO   |
| <b>Contact Arrangement</b> | <b>M</b> 1 form A, 1 NO contact   |
| <b>Suffix</b>              | <b>,000</b> Standard model  |

**Miniature Relay PCF** (Continued)

| Product code    | Terminals/mounting      | Coil  | Cont. material     | Arrangement              | Part number |
|-----------------|-------------------------|-------|--------------------|--------------------------|-------------|
| PCF-105D2M,000  | Quick connect terminals | 5VDC  | AgSnO <sub>2</sub> | 1 form A (NO)<br>contact | 5-1440002-4 |
| PCF-106D2M,000  |                         | 6VDC  |                    |                          | 5-1440002-5 |
| PCF-112D1M,000  |                         | 12VDC | AgCdO              |                          | 9-1419129-2 |
| PCF-112D2M,000  |                         |       |                    |                          | 3-1419153-4 |
| PCF-124D1M,000  |                         | 24VDC | AgCdO              |                          | 9-1419129-5 |
| PCF-124D2M,000  |                         |       |                    |                          | 5-1440002-8 |
| PCF-148D1M,000  |                         | 48VDC | AgCdO              |                          | 2-1419146-4 |
| PCF-148D2M,000  |                         |       |                    |                          | 5-1440002-9 |
| PCFL-112D2M,000 | Low profile flange case | 12VDC |                    |                          | 1649000-3   |
| PCFL-124D2M,000 |                         | 24VDC |                    |                          | 1649000-4   |
| PCFN-109D2M,000 | PC board terminals      | 09VDC |                    |                          | 1461193-7   |
| PCFN-118D2M,000 |                         | 18VDC |                    |                          | 1461193-8   |
| PCFN-124D2M,000 |                         | 24VDC |                    |                          | 1461193-9   |
| PCFN-148D2M,000 |                         | 48VDC |                    |                          | 1461193-5   |