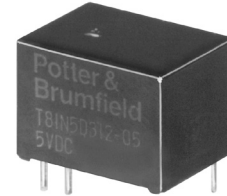


**T81 Series Signal PCB Relay**

- Au clad contacts in a 1 Form C (CO) arrangement
- Standard 0.1" (2.54mm) grid spacing in a DIP configuration
- Standard or sensitive DC coils through 24 volts
- High dielectric strength
- Wash tight case
- Quiet operation for security applications



**Typical applications**

Audio communications circuits, logic and process control, vending machines, thermostats, office automation

**Approvals**

UL E29244, CSA LR48471

Technical data of approved types on request

**Contact Data**

|                               |   |
|-------------------------------|---|
| Contact arrangement           | 1 form C (CO)   |
| Rated voltage                 | 24VDC, 120VAC   |
| Max. switching voltage        | 60VDC, 125VAC   |
| Rated current                 | 1A  |
| Limiting continuous current   | 2A  |
| Switching power               | 120VA, 30W  |
| Contact material              | Au overlay AgPd alloy   |
| Contact style                 | single contact  |
| Min. recommended contact load | 1mA at 1VDC   |
| Initial contact resistance    | 50mΩ at 100mA, 6VDC   |
| Frequency of operation        | 72000 ops/h   |
| Operate/release time max.     |   |
| standard coil                 | 5/7ms   |
| sensitive coil                | 10/7ms  |
| Electrical endurance          |   |
| 1A, 120VAC, resistive         | 100x10 <sup>3</sup> ops.  |
| 1A, 24VDC, resistive          | 100x10 <sup>3</sup> ops.  |
| Contact ratings               | 1A, 120VAC/24VDC, resistive<br>2A, 125VAC/30VDC, resistive (NO) |
| Mechanical endurance          | 10x10 <sup>6</sup> ops.   |

**Coil Data**

|                       |            |
|-----------------------|------------|
| Magnetic system       | neutral    |
| Coil voltage range    | 5 to 24VDC |
| Max. coil temperature | 105°C      |

**Coil Data (continued)**

**Coil versions, DC coil**

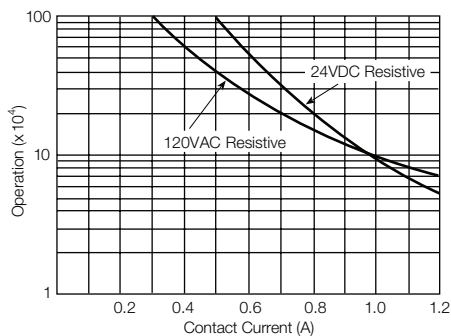
| Coil code                    | Rated voltage VDC | Operate voltage VDC | Release voltage VDC | Coil resistance Ω±10% | Rated coil power mW |
|------------------------------|-------------------|---------------------|---------------------|-----------------------|---------------------|
| <b>Standard coil, 450mW</b>  |                   |                     |                     |                       |                     |
| 05                           | 5                 | 3.5                 | 0.25                | 55                    | 450                 |
| 06                           | 6                 | 4.2                 | 0.3                 | 80                    | 450                 |
| 09                           | 9                 | 6.3                 | 0.45                | 180                   | 450                 |
| 12                           | 12                | 8.4                 | 0.6                 | 320                   | 450                 |
| 24                           | 24                | 16.8                | 1.2                 | 1280                  | 450                 |
| <b>Sensitive coil, 200mW</b> |                   |                     |                     |                       |                     |
| 05                           | 5                 | 3.75                | 0.5                 | 125                   | 200                 |
| 06                           | 6                 | 4.5                 | 0.6                 | 180                   | 200                 |
| 09                           | 9                 | 6.75                | 0.9                 | 400                   | 200                 |
| 12                           | 12                | 9.0                 | 1.2                 | 700                   | 200                 |
| 24                           | 24                | 18.0                | 2.4                 | 2800                  | 200                 |

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

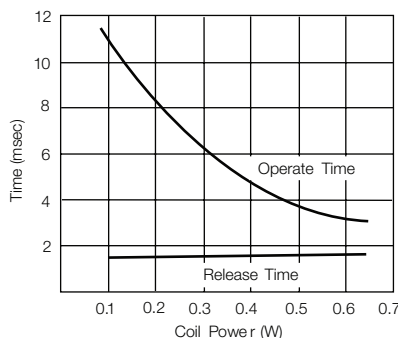
**Insulation Data**

|                                 |                                 |
|---------------------------------|---------------------------------|
| Initial dielectric strength     |                                 |
| between open contacts           | 500V <sub>rms</sub>             |
| between contact and coil        | 1000V <sub>rms</sub>            |
| Initial surge withstand voltage | 1500V <sub>rms</sub> (10/160μs) |
| Initial insulation resistance   |                                 |
| between insulated elements      | 10 <sup>9</sup> Ω               |
| Clearance/creepage              |                                 |
| between contact and coil        | 1.5/1.76mm                      |

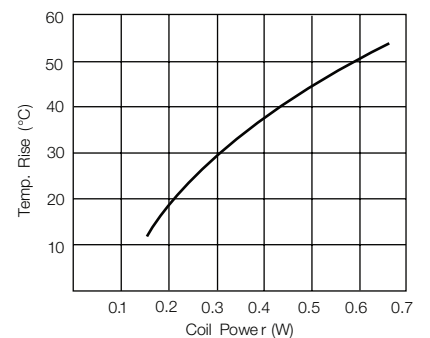
**Electrical endurance**



**Operate time**



**Coil temperature rise**



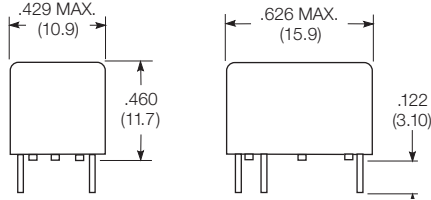
**T81 Series Signal PCB Relay** (Continued)

**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](http://www.te.com/customersupport/rohssupportcenter)

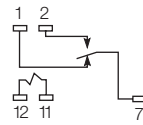
|                                      |                                 |
|--------------------------------------|---------------------------------|
| Ambient temperature                  |                                 |
| standard coil                        | -30°C to 60°C                   |
| sensitive coil                       | -30°C to 70°C                   |
| Category of environmental protection |                                 |
| IEC 61810                            | RTIII - wash tight              |
| Vibration resistance (functional)    | 10-50Hz, 1.5mm double amplitude |
| Shock resistance (functional)        |                                 |
| IEC 60068-2-27 (half sine)           |                                 |
| standard coil                        | 98m/s <sup>2</sup> , 11ms       |
| sensitive coil                       | 65m/s <sup>2</sup> , 11ms       |
| Terminal type                        | PCB-THT                         |
| Weight                               | 3.5g                            |
| Resistance to soldering heat THT     |                                 |
| IEC 60068-2-20                       | 260°C/5s                        |
| Packaging/unit                       | tube/25 pcs., box/2000pcs.      |

**Dimensions**



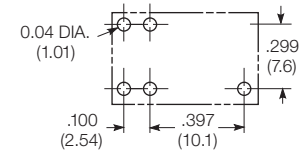
**Terminal assignment**

Bottom view on solder pins



**PCB layout**

Bottom view on solder pins



**Product code structure**

Typical product code **T81 H 5 D 3 1 2**

**Type**

**T81** Signal PCB Relay T81

**Coil sensitivity**

**N** Standard coil (450mw)      **H** Sensitive coil (200mw)

**Contact arrangement**

**5** 1 Form C (CO)

**Coil input**

**D** DC voltage

**Dielectric strength**

**3** High dielectric strength

**Contact rating**

**1** 1A, 24VDC; 1A, 120VAC

**Contact material**

**2** Au overlay AgPd alloy

**Coil voltage**

Coil code: please refer to coil versions table

| Product code | Contact material      | Coil power       | Coil voltage | Part number |
|--------------|-----------------------|------------------|--------------|-------------|
| T81H5D312-05 | Au overlay AgPd Alloy | Sensitive, 200mW | 5VDC         | 5-1393779-5 |
| T81H5D312-06 |                       |                  | 6VDC         | 5-1393779-6 |
| T81H5D312-09 |                       |                  | 9VDC         | 5-1393779-7 |
| T81H5D312-12 |                       |                  | 12VDC        | 5-1393779-8 |
| T81H5D312-24 |                       |                  | 24VDC        | 5-1393779-9 |
| T81N5D312-05 |                       | Standard, 450mW  | 5VDC         | 6-1393779-9 |
| T81N5D312-09 |                       |                  | 9VDC         | 7-1393779-0 |
| T81N5D312-12 |                       |                  | 12VDC        | 7-1393779-1 |
| T81N5D312-24 |                       |                  | 24VDC        | 7-1393779-2 |