# Miniature PCB Relay T77

- **3 to 10A rating**
- **Small size**
- **Creepage spacings of 6.5mm between coil and contacts**
- **4,000Vrms coil to contact dielectric strength**
- **UL Class F approved insulation system**

Typical applications
Appliances, HVAC, industrial control

## Approvals

VDE 40010327, UL E29244
Technical data of approved types on request

## Contact Data

| | | |
|---|---|---|
| Contact arrangement | 1 form A, 1 NO | |
| Rated voltage | 30VDC, 250VAC | |
| Max. switching voltage | 30VDC, 277VAC | |
| Rated current | 3 to 10A | |
| Contact material | 3A type: Ag<br>10A type: AgCdO | |
| Min. recommended contact load | 100mA at 5VDC | |
| Frequency of operation | 360 ops./h | |
| Operate/release time max. | 10ms/4ms | |
| Electrical endurance | | |
| 3A type | 3A, 250VAC res., -30°C to +55°C | $100x10^3$ ops. |
| 5A type | 5A, 250VAC res., -30°C to +40°C | $100x10^3$ ops. |
| | 5A, 250VAC res, -30°C to +85°C | $10x10^3$ ops. |
| 10A type | 10A, 250VAC res., -30°C to +55°C | $100x10^3$ ops. |
| | 10A, 250VAC res., -30°C to +85°C | $10x10^3$ ops. |
| Contact ratings | 3A type: 3A 250VAC<br>5A type: 5A 250VAC<br>10A type: 10A 250VAC | |
| Mechanical endurance, DC coil | $10x10^6$ operations | |

## Coil Data

| | |
|---|---|
| Coil voltage range | 5 to 48VDC |
| Operative range, IEC 61810 | 2 |
| Coil insulation system according UL | Class E, F |

**Coil versions, DC coil, sensitive type, 200mW**

| Coil code | Rated voltage VDC | Operate voltage VDC | Release voltage VDC | Coil resistance Ω±10% | Rated coil power mW |
|---|---|---|---|---|---|
| 003 | 3 | 2.25 | 0.15 | 45 | 200 |
| 005 | 5 | 3.75 | 0.25 | 125 | 200 |
| 006 | 6 | 4.5 | 0.3 | 180 | 200 |
| 009 | 9 | 6.75 | 0.45 | 405 | 200 |
| 012 | 12 | 9 | 0.6 | 720 | 200 |
| 024 | 24 | 18 | 1.2 | 2880 | 200 |
| 048 | 48 | 36 | 2.4 | 11520 | 200 |

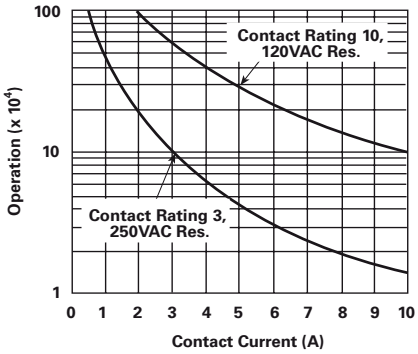
All figures are given for coil without pre-energization, at ambient temperature +23°C

**Coil versions, DC coil, standard type, 450mW**

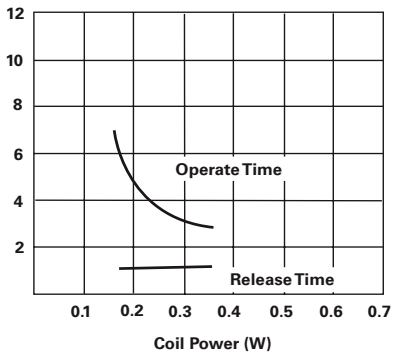
| Coil code | Rated voltage VDC | Operate voltage VDC | Release voltage VDC | Coil resistance Ω±10% | Rated coil power mW |
|---|---|---|---|---|---|
| 003 | 3 | 2.1 | 0.15 | 20 | 450 |
| 005 | 5 | 3.5 | 0.25 | 55.6 | 450 |
| 006 | 6 | 4.2 | 0.3 | 80 | 450 |
| 009 | 9 | 6.3 | 0.45 | 180 | 450 |
| 012 | 12 | 8.4 | 0.6 | 320 | 450 |
| 024 | 24 | 16.8 | 1.2 | 1280 | 450 |
| 048 | 48 | 33.6 | 2.4 | 5120 | 450 |

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

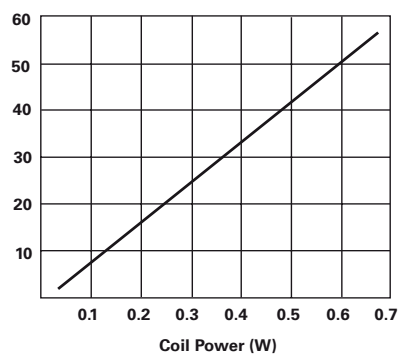
**Electrical endurance**




**Operate time**




**Coil temperature rise**



## Miniature PCB Relay T77 (Continued)

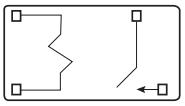
### Insulation Data

| | |
|---|---|
| Initial dielectric strength | |
| between open contacts | 750Vrms |
| between contact and coil | 4000Vrms |
| Clearance/creepage | |
| between contact and coil | >3.2/6.4mm |

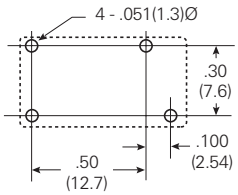
### Other Data

| | |
|---|---|
| Material compliance: EU RoHS/ELV, China RoHS, REACH, Halogen content refer to the Product Compliance Support Center at www.te.com/customersupport/rohssupportcenter | |
| Ambient temperature | 3A type: -30°C to +105°C<br>5A and 10A type: -30°C to +85°C |
| Category of environmental protection | |
| IEC 61810 | RTII - dust protected<br>RTIII - wash tight |
| Shock resistance (functional) | 10g |
| Shock resistance (destructive) | 100g |
| Weight | 9g |
| Resistance to soldering heat THT | |
| IEC 60068-2-20 | RTII: 270°C/10s<br>RTIII: 260°C/5s |
| Packaging/unit | Tray/100, carton box/1000 |

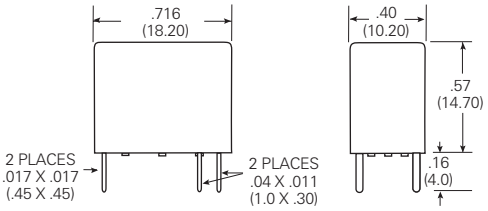
**Terminal assignment**
Bottom view on solder pins



**PCB layout**
Bottom view on solder pins




**Dimensions**




### Product code structure

Typical product code: **T77 V 1 D 10 -12**

**Type**
**T77** Miniature PCB Relay T77

**Category of protection**
**V** Flux proof
**S** Wash tight

**Contact arrangement**
**1** 1 Form A, 1NO

**Coil input**
**D** DC coil

**Contact rating and coil power**
450 mWcoil power
**5** 5A type, coil power 450mW
**10** 10A type, coil power 450mW
200mW coil power
**3** 3A type, coil power 200mW

**Coil voltage**
Coil code: please refer to coil versions table (e.g. 12 = 12VDC)

**Insulation system**
**Blank** UL Class 155 (F)
**A** UL Class 120 (E)

**Special types**
**Blank** Standard

| Product code | Enclosure | Contact rating | Cont.material | Coil voltage | Coil power | Part number |
|---|---|---|---|---|---|---|
| T77S1D3-05 | Wash tight | 3A | Ag | 5VDC | 200mW | 1-1393194-3 |
| T77V1D3-12 | Flux proof | 3A | Ag | 12VDC | 200mW | 2-1393194-6 |
| T77S1D3-12 | Wash tight | 3A | Ag | 12VDC | 200mW | 1-1393194-5 |
| T77V1D3-24 | Flux proof | 3A | Ag | 24VDC | 200mW | 2-1393194-7 |
| T77S1D3-24 | Wash tight | 3A | Ag | 24VDC | 200mW | 1-1393194-6 |
| T77V1D10-05 | Flux proof | 10A | AgCdO | 5VDC | 450mW | 1-1393194-8 |
| T77S1D10-05 | Wash tight | 10A | AgCdO | 5VDC | 450mW | 1393194-7 |
| T77V1D10-09 | Flux proof | 10A | AgCdO | 9VDC | 450mW | 1440005-1 |
| T77S1D10-03 | Wash tight | 10A | AgCdO | 3VDC | 450mW | 1393194-6 |
| T77V1D10-12 | Flux proof | 10A | AgCdO | 12VDC | 450mW | 1-1393194-9 |
| T77S1D10-12 | Wash tight | 10A | AgCdO | 12VDC | 450mW | 1393194-9 |
| T77V1D10-24 | Flux proof | 10A | AgCdO | 24VDC | 450mW | 2-1393194-1 |
| T77S1D10-24 | Wash tight | 10A | AgCdO | 24VDC | 450mW | 1-1393194-0 |



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