

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 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 5A type: 5A 250VAC 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 |

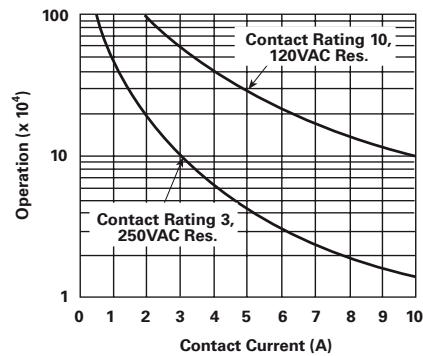
All figures are given for coil without pre-energization, at ambient temperature +23°C

Coil versions, DC coil, standard type, 450mW

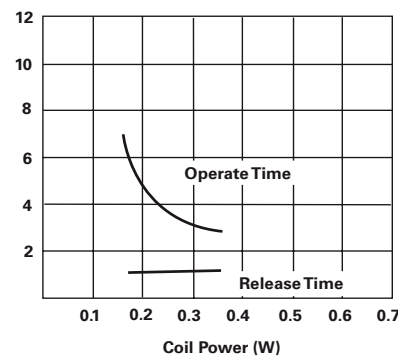
| Coil code | Rated voltage VDC | Operate voltage VDC | Release voltage VDC | Coil resistance Ω±10% | Rated coil power mW |
|-----------|-------------------|---------------------|---------------------|-----------------------|---------------------|
| 003 | 3 | 2.1 | 0.15 | 20 | 450 |
| 005 | 5 | 3.5 | 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

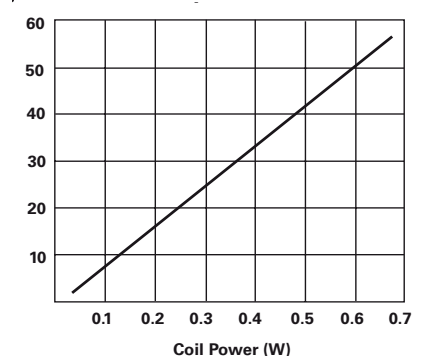
Electrical endurance



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
 5A and 10A type: -30°C to +85°C

Category of environmental protection
IEC 61810 RTII - dust protected
 RTIII - wash tight

Shock resistance (functional) 10g
Shock resistance (destructive) 100g

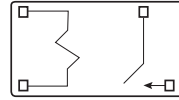
Weight 9g

Resistance to soldering heat THT
IEC 60068-2-20 RTII: 270°C/10s
 RTIII: 260°C/5s

Packaging/unit Tray/100, carton box/1000

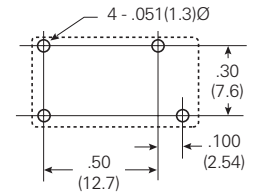
Terminal assignment

Bottom view on solder pins

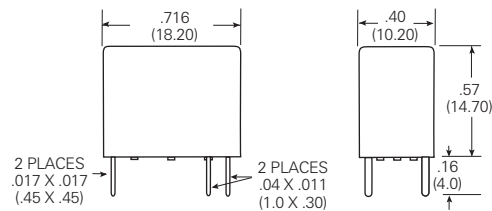


PCB layout

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

5 450 mW coil power **3** 200mW coil power
5A type, coil power 450mW 3A type, coil power 200mW
10 10A type, coil power 450mW

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 |