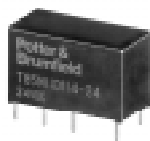


For new designs refer to V23105.



## T85 series

High Sensitivity, DIP  
PC Board Relay

File E45026

File LR35579

## Features

- Ultra sensitive DC coils through 48 volts.
- Switches up to 2 amps.
- Standard DIP configuration mates with 16-pin socket.
- Bifurcated contacts in a 2 Form C arrangement.
- 1,500 volt surge strength – meets FCC Part 68.
- Well suited for application in telecommunications equipment, audio equipment and business machines.
- Immersion cleanable, plastic sealed case.
- Ultrasonic cleaning is not advised.

## Contact Data @ 20°C

| Contact Style                          | Series 4                                                                             | Series 5                                                                 |
|----------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| <b>Arrangement:</b>                    | Bifurcated<br>2 Form C (DPDT)                                                        | Bifurcated<br>2 Form C (DPDT)                                            |
| <b>Material: Stationary:</b>           | Gold overlay silver-palladium alloy                                                  | Gold overlay silver-nickel alloy                                         |
| <b>Movable:</b>                        | Silver-palladium alloy                                                               | Gold overlay silver-nickel alloy                                         |
| <b>Initial Contact Resistance:</b>     | 100 milliohms, max.<br>@ 100mA, 6VDC                                                 | 100 milliohms, max.<br>@ 100mA, 6VDC                                     |
| <b>Ratings: Max. Switched Current:</b> | 1.25A, AC or DC                                                                      | 2A, AC or DC                                                             |
| <b>Max. Switched Voltage:</b>          | 60VDC, 120VAC                                                                        | 150VDC, 125VAC                                                           |
| <b>Max. Switched Power:</b>            | 24W or 60VA                                                                          | 30W or 62.5VA                                                            |
| <b>Max. Carry Current:</b>             | 2A, AC or DC                                                                         | 2A, AC or DC                                                             |
| <b>Min. Switched Current:</b>          | 10µA, AC or DC                                                                       | 10µA, AC or DC                                                           |
| <b>Min. Switched Voltage:</b>          | 50µV, AC or DC                                                                       | 50µV, AC or DC                                                           |
| <b>Min. Switched Power:</b>            | 25µW, AC or DC                                                                       | 25µW, AC or DC                                                           |
| <b>Expected Mechanical Life:</b>       | 20 million ops.                                                                      | 10 million ops.                                                          |
| <b>Expected Electrical Life:</b>       | 500,000 operations<br>@ 1A, 24VDC, res.<br>200,000 operations<br>@ .5A, 120VAC, res. | 100,000 operations<br>@ 2A, 30VDC<br>200,000 operations<br>@ .4A, 120VAC |

## Initial Dielectric Strength

**Between Open Contacts:** 500V rms, 50/60 Hz., for 1 minute.  
**Between Poles:** 1,000V rms, 50/60 Hz., for 1 minute.  
 1,500V rms surge per FCC Part 68.  
**Between Coil and Contacts:** 1,000V rms, 50/60 Hz., for 1 minute.  
 1,500V rms surge per FCC Part 68.

## Initial Insulation Resistance

**Between Mutually Insulated Conductors:** 10<sup>9</sup> ohms @ 500VDC.

## Coil Data @ 20°C

**Voltage:** 4.5 through 48VDC.  
**Nominal Power:** See Coil Data table.

**Maximum Coil Power:** 725 milliwatts, for contact style series 4.  
 800 milliwatts, for contact style series 5.

**Temperature Rise:** 110°C per watt, typical.

**Duty Cycle:** Continuous.

## Coil Data @ 20°C - For Contact Style Series 4

| Nominal Voltage (VDC) | Resistance ±10% (Ohms) | Nominal Coil Power (mW) |
|-----------------------|------------------------|-------------------------|
| 4.5                   | 135                    | 150                     |
| 5                     | 167                    | 150                     |
| 6                     | 240                    | 150                     |
| 9                     | 540                    | 150                     |
| 12                    | 960                    | 150                     |
| 24                    | 2,880                  | 200                     |
| 48                    | 7,680                  | 300                     |

## Coil Data @ 20°C - For Contact Style Series 5

| Nominal Voltage (VDC) | Resistance ±10% (Ohms) | Nominal Coil Power (mW) |
|-----------------------|------------------------|-------------------------|
| 4.5                   | 36                     | 560                     |
| 5                     | 45                     | 560                     |
| 6                     | 66                     | 550                     |
| 9                     | 140                    | 580                     |
| 12                    | 280                    | 510                     |
| 24                    | 1,070                  | 540                     |
| 48                    | 4,000                  | 580                     |

## Operate Data @ 20°C

**Must Operate Voltage:** 70% of nominal voltage or less.  
**Must Release Voltage:** 5% of nominal voltage or more.  
**Operate Time (Excluding Bounce)†:** 6 ms, max.  
**Release Time (Excluding Bounce)†:** 3 ms, max.  
**Operate Bounce:** 3 ms, max.  
**Release Bounce:** 4 ms, max.

† At or from Nominal Coil Voltage.

## Environmental Data

**Temperature Range:** -30°C to +80°C, for contact style series 4.  
 -40°C to +60°C, for contact style series 5.

**Vibration, Operational:** 10g, 10-55 Hz.

**Shock, Operational:** 10g for 11 ms, 1/2 sine wave.

**Shock, Non-destructive:** 100g for 6 ms, 1/2 sine wave.

## Mechanical Data

**Termination:** DIP compatible, printed circuit terminals.

**Enclosure:** Sealed PBT plastic case.

**Weight:** 0.16 oz. (4.5g) approximately.

Ordering Information

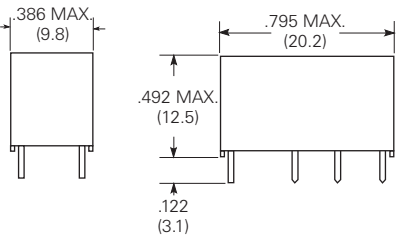
| Typical Part Number ►                                                                                                                                                                                  |  | T85       | N          | 11         | D | 11 | 4 | -12 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------|------------|------------|---|----|---|-----|
| <b>1. Basic Series:</b><br>T85 = Ultra sensitive, DIP PC board relay.                                                                                                                                  |  |           |            |            |   |    |   |     |
| <b>2. Enclosure:</b><br>N = Sealed plastic case.                                                                                                                                                       |  |           |            |            |   |    |   |     |
| <b>3. Contact Arrangement:</b><br>11 = 2 Form C (DPDT)                                                                                                                                                 |  |           |            |            |   |    |   |     |
| <b>4. Coil Input:</b><br>D = DC voltage.                                                                                                                                                               |  |           |            |            |   |    |   |     |
| <b>5. Terminals:</b><br>11 = Printed circuit terminals.                                                                                                                                                |  |           |            |            |   |    |   |     |
| <b>6. Contact Style and Material:</b><br>4 = Bifurcated, silver-palladium (gold overlay on stationary), 1.25A max.<br>5 = Bifurcated, silver-nickel (gold overlay on stationary and moveable), 2A max. |  |           |            |            |   |    |   |     |
| <b>7. Coil Voltage:</b>                                                                                                                                                                                |  |           |            |            |   |    |   |     |
| 04 = 4.5VDC                                                                                                                                                                                            |  | 06 = 6VDC | 12 = 12VDC | 48 = 48VDC |   |    |   |     |
| 05 = 5VDC                                                                                                                                                                                              |  | 09 = 9VDC | 24 = 24VDC |            |   |    |   |     |

For new designs refer to V23105.

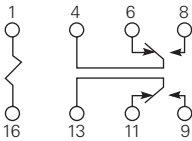
Stock Items – The following items are normally maintained in stock for immediate delivery.

|               |               |               |
|---------------|---------------|---------------|
| T85N11D114-05 | T85N11D114-48 | T85N11D115-24 |
| T85N11D114-12 | T85N11D115-05 |               |
| T85N11D114-24 | T85N11D115-12 |               |

Outline Dimensions



Wiring Diagrams (Bottom Views)



PC Board Layout (Bottom View)

