

# TSC series

## Miniature, Sealed PC Board Relay

Telecommunications, Appliances, Office Machines

UL File No. E82292

CSA File No. LR48471

Users should thoroughly review the technical data before selecting a product part number. It is recommended that user also seek out the pertinent approvals files of the agencies/laboratories and review them to ensure the product meets the requirements for a given application.

### Features

- Designed for thermostat, modem, computer peripherals, video recording and security applications.
- 1 Form C contact arrangement.
- Low coil power requirement for IC compatibility.
- Terminals arrangement on grid pattern.

### Contact Data @ 20°C

**Arrangements:** 1 Form C (SPDT).

**Material:** Gold overlay Silver Nickel Alloy.

**Max. Switching Rate:** 300ops./ min. (no load).  
30ops./ min. (rated load).

**Expected Mechanical Life:** 5 million ops (no load).

**Expected Electrical Life:** 100,000 ops (rated load).

**Minimum Load:** 1mA @ 1VDC.

**Initial Contact Resistance:** 50 milliohms @ 100mA, 6VDC.

### Contact Ratings

**Ratings:** 1A @ 24VDC resistive.

1A @ 120VAC resistive.

**Max. Switched Voltage:** AC: 120V.  
DC: 30V.

**Max. Switched Current:** 1A.

**Max. Switched Power:** 120VA, 24W.

### Initial Dielectric Strength

**Between Open Contacts:** 400VAC, 50/60 Hz. (1 min.).

**Between Contacts and Coil:** 1,000VAC, 50/60 Hz. (1 min.).

Note: Consult factory for higher dielectric version: 1,500VAC, 50/60 Hz. (1 min.).

**Surge Voltage Between Coil and Contacts:** 1,500V FCC Part 68  
(10/160μs).

### Initial Insulation Resistance

**Between Mutually Insulated Conductors:** 1,000Mohm @ 500VDCM.

### Coil Data

**Voltage:** 5 to 24VDC.

**Duty Cycle:** Continuous.

**Nominal Power:** TSC-L: 150mW.

TSC-D: 300mW.

**Max. Coil Power:** TSC-L: 140% of nominal at 70°C.

TSC-D: 115% of nominal at 70°C.

### Coil Data @ 20°C

| TSC-L Sensitive          |                      |                              |                            |                            |
|--------------------------|----------------------|------------------------------|----------------------------|----------------------------|
| Rated Coil Voltage (VDC) | Nominal Current (mA) | Coil Resistance (ohms) ± 10% | Must Operate Voltage (VDC) | Must Release Voltage (VDC) |
| 5                        | 30.0                 | 166                          | 3.75                       | 0.25                       |
| 6                        | 25.0                 | 240                          | 4.50                       | 0.30                       |
| 9                        | 16.7                 | 540                          | 6.75                       | 0.45                       |
| 12                       | 12.5                 | 960                          | 9.00                       | 0.60                       |
| 24                       | 6.3                  | 3,840                        | 18.00                      | 1.20                       |

| TSC-D Standard           |                      |                              |                            |                            |
|--------------------------|----------------------|------------------------------|----------------------------|----------------------------|
| Rated Coil Voltage (VDC) | Nominal Current (mA) | Coil Resistance (ohms) ± 10% | Must Operate Voltage (VDC) | Must Release Voltage (VDC) |
| 5                        | 60.0                 | 83                           | 3.75                       | 0.25                       |
| 6                        | 50.0                 | 120                          | 4.50                       | 0.30                       |
| 9                        | 33.4                 | 270                          | 6.75                       | 0.45                       |
| 12                       | 25.0                 | 480                          | 9.00                       | 0.60                       |
| 24                       | 12.5                 | 1,920                        | 18.00                      | 1.20                       |

### Operate Data @ 20°C

**Must Operate Voltage:** 75% of nominal voltage or less.

**Must Release Voltage:** 5% of nominal voltage or more.

**Operate Time:** 5ms max.

**Release Time:** 5ms max.

### Environmental Data

**Temperature Range:**

**Operating:** -40°C to +80°C.

**Vibration, Mechanical:** 10 to 55Hz., 1.5mm double amplitude.

**Operational:** 10 to 55Hz., 1.5mm double amplitude.

**Shock, Mechanical:** 500m/s<sup>2</sup> (50G approximately).

**Operational:** 100m/s<sup>2</sup> (10G approximately).

**Operating Humidity:** 45 to 85% RH. (Non-condensing)

### Mechanical Data

**Termination:** Printed circuit terminals.

**Enclosure:** Plastic sealed case.

**Weight:** 0.1 oz (3g) approximately.

## Ordering Information

Typical Part Number ►

**TSC**

**-1**

**05**

**L**

**3**

**H**

**,000**

### 1. Basic Series:

TSC = Miniature relay

### 2. Termination:

1 = 1 pole

### 3. Coil Voltage:

05 = 5VDC      09 = 9VDC      24 = 24VDC  
06 = 6VDC      12 = 12VDC

### 4. Coil Input:

L = Sensitive      D = Standard

### 5. Contact Material:

3 = Silver Nickel

### 6. Enclosure:

Blank = Vented (Flux-tight) cover      H = Sealed plastic case

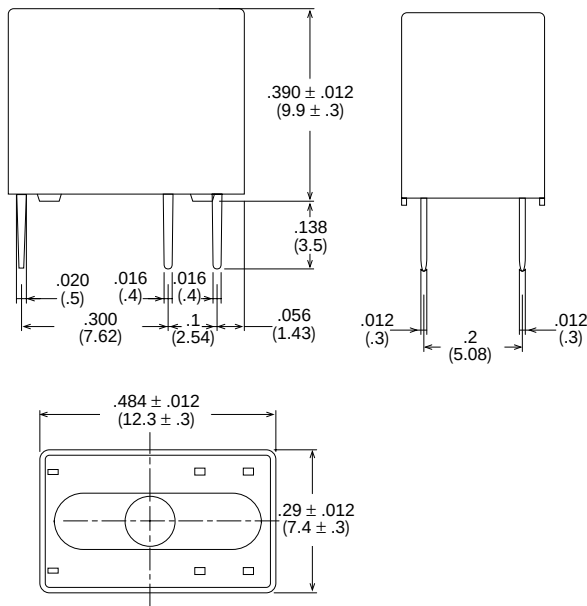
### 7. Suffix:

,000 = Standard model      Other Suffix = Custom model

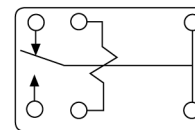
**Our authorized distributors are more likely to stock the following items for immediate delivery.**

TSC-105L3H,000    TSC-124L3H,000    TSC-112D3H,000  
TSC-112L3H,000    TSC-105D3H,000    TSC-124D3H,000

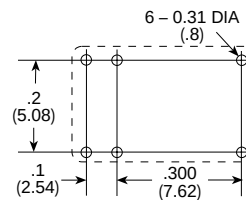
## Outline Dimensions



## Wiring Diagram (Bottom View)

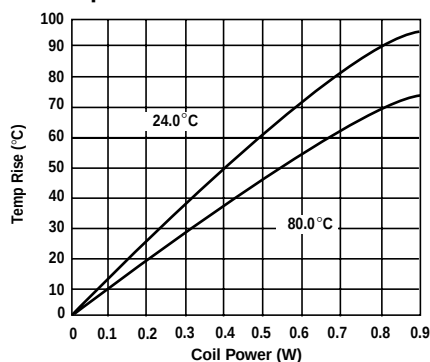


## PC Board Layout (Bottom View)

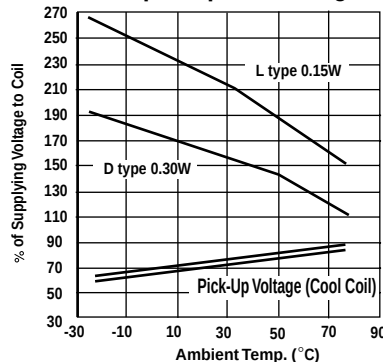


## Reference Data

### Coil Temperature Rise



### Ambient Temp. & Operate Voltage



### Load Limit Curve

