



# TSC series

## Miniature, Sealed PC Board Relay

Telecommunications, Appliances, Office Machines

UL File No. E82292

CSA File No. LR48471

### 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:** 3 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)
3	50.0	60	2.25	0.15
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)
3	100.0	30	2.25	0.15
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**

**1. Basic Series:**

TSC = Miniature relay

**2. Termination:**

1 = 1 pole

**3. Coil Voltage:**

03 = 3VDC      06 = 6VDC      12 = 12VDC  
05 = 5VDC      09 = 9VDC      24 = 24VDC

**4. Coil Input:**

L = Sensitive      D = Standard

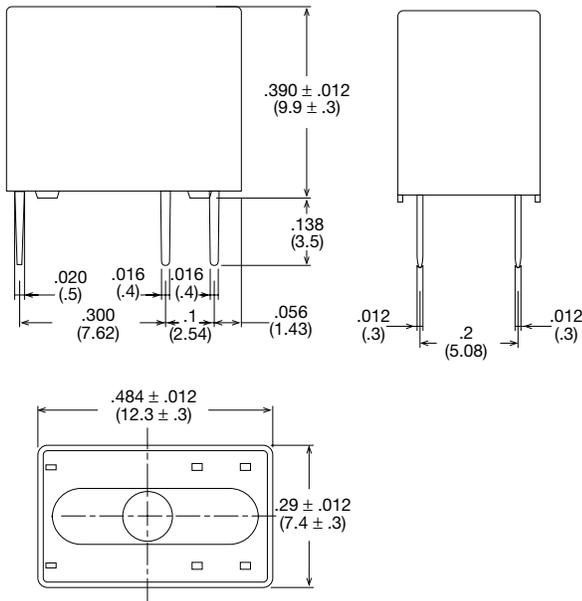
**5. Contact Material:**

3 = Silver Nickel

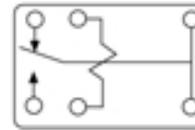
**6. Enclosure:**

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

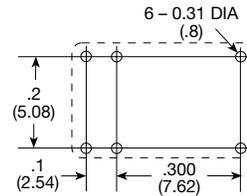
**Outline Dimensions**



**Wiring Diagram (Bottom View)**

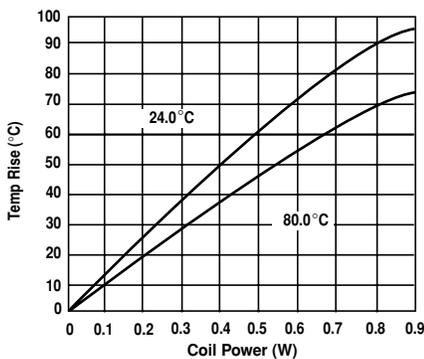


**PC Board Layout (Bottom View)**

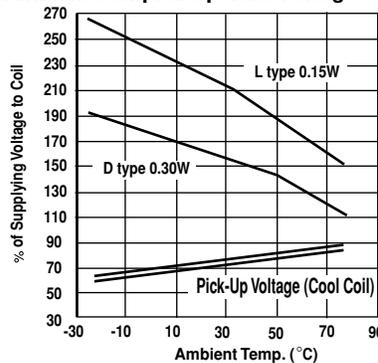


**Reference Data**

**Coil Temperature Rise**



**Ambient Temp. & Operate Voltage**



**Load Limit Curve**

