# 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/s² (50G approximately).
**Operational:** 100m/s² (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.


Dimensions are shown for reference purposes only.
Dimensions are in inches over (millimeters) unless otherwise specified.
Specifications and availability subject to change.
www.tycoelectronics.com
Technical support:
Refer to inside back cover.

## 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

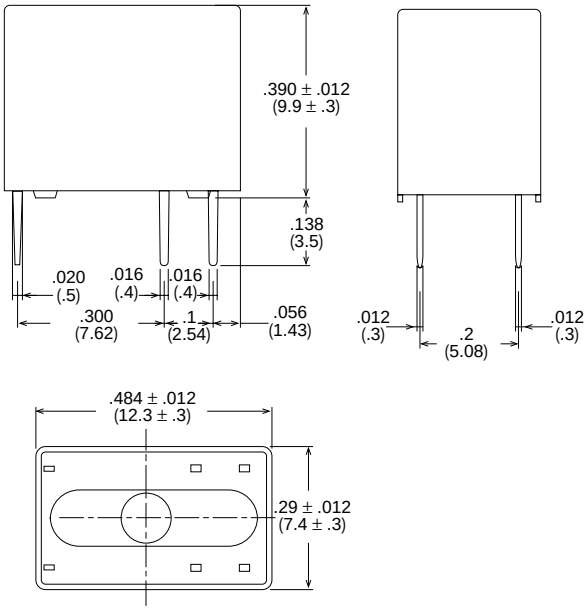
**6. Enclosure:**
Blank = Vented (Flux-tight) cover H = Sealed plastic case

**7. Suffix:**
,000 = Standard model Other Suffix = Custom model

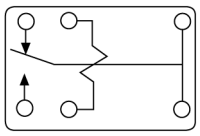
## Our authorized distributors are more likely to stock the following items for immediate delivery.

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

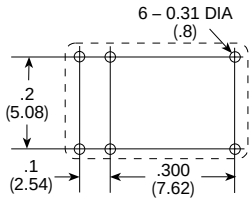
## Outline Dimensions




## Wiring Diagram (Bottom View)

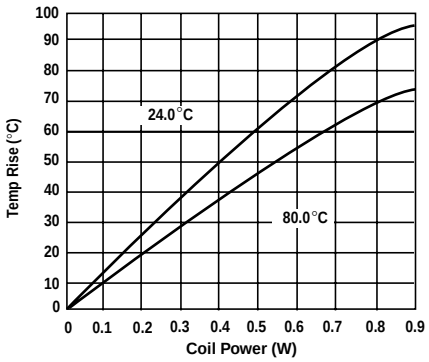


## PC Board Layout (Bottom View)

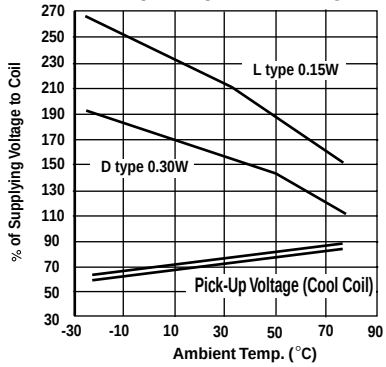



## Reference Data

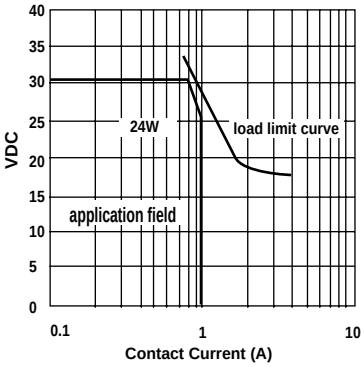
### Coil Temperature Rise




### Ambient Temp. & Operate Voltage




### Load Limit Curve

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