



# T81N/T81H series

## Ultraminiature, High Density PC Board Relay

File E29244

File 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

- Gold clad contacts in a 1 Form C contact arrangement.
- Standard 0.1" x 0.3" grid spacing in a DIP configuration.
- Standard or sensitive DC coils through 24 volts.
- High dielectric strength.
- Well suited for audio communications circuits, logic and process control, vending machines, thermostats and office automation applications.
- Immersion cleanable, plastic sealed case.
- Quiet operation for security applications.

### Contact Data @ 20°C

**Arrangements:** 1 Form C (SPDT).  
**Material:** Gold overlay silver-palladium alloy.  
**Ratings:** 1 amp @ 24VDC, resistive; 0.5 amp @ 120VAC, resistive.  
**Max. Switching Current:** 2A  
**Max. Switching Power:** 60VA/24W.  
**Max. Switching Voltage:** 120VAC/60VDC.  
**Expected Mechanical Life:** 10 million operations.  
**Expected Electrical Life:** 150,000 ops. @ 1A, 24VDC, resistive.  
 100,000 ops. @ 1A, 120VAC, resistive.  
**Initial Contact Resistance:** 50 milliohms, max., @ 100mA, 6VDC.  
**Surge Voltage:**  
 Between Coil and Contacts (10 x 160µs): 1,500V: (FCC Part 68).

### Initial Dielectric Strength

**Between Open Contacts:** 500V rms, 50/60 Hz., for 1 minute.  
**Contact to Coil:** 1,000V rms, 50/60 Hz., for 1 minute.

### Initial Insulation Resistance

**Between Mutually Insulated Conductors:** 10<sup>8</sup> ohms @ 500VDC, 20°C and 65% relative humidity.

### Coil Data @ 20°C

**Voltage:** 3 through 24VDC.  
**Nom. Power (Approx.):** **Std. Coil:** 450 mW; **Sensitive Coil:** 200 mW.  
**Maximum Power:** **Std. Coil:** 800 mW.; **Sensitive Coil:** 640 mW.  
**Temperature Rise:** **Std. Coil:** 105°C per watt, typ.  
**Sensitive Coil:** 125°C per watt, typ.  
**Maximum Coil Temperature:** 105°C.  
**Duty Cycle:** Continuous.

### Ordering Information

Typical Part Number ▶ **T81 H 5 D 3 1 2 -12**

- Basic Series:**  
T81 = Ultraminiature, PC board relay.
- Coil Sensitivity:**  
N = Standard coil.  
H = Sensitive coil.
- Contact Arrangement:**  
5 = 1 Form C (SPDT)
- Coil Input:**  
D = DC Voltage.
- Dielectric Strength:**  
3 = High dielectric strength, UL recognized.
- Contact Rating:**  
1 = 1A @ 24VDC; 0.5A @ 120VAC.
- Contact Material:**  
2 = Gold overlay silver-palladium alloy.
- Coil Voltage:**  
03 = 3VDC      06 = 6VDC      12 = 12VDC  
05 = 5VDC      09 = 9VDC      24 = 24VDC

Our authorized distributors are more likely to stock these items.

- T81H5D312-05    T81H5D312-12    T81N5D312-05    T81N5D312-24  
 T81H5D312-06    T81H5D312-24    T81N5D312-12

### Coil Data @ 20°C

Standard Coils		Sensitive Coils	
Nominal Voltage (VDC)	Resistance ±10% (Ohms)	Nominal Voltage (VDC)	Resistance ±10% (Ohms)
3	20	3	45
5	55	5	125
6	80	6	180
9	180	9	400
12	320	12	700
24	1,280	24	2,800

### 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)†:** **Standard Coil :** 5 ms, approx.  
**Sensitive Coil :** 5 ms, approx.  
**Release Time (Excluding Bounce)†:** **All Models:** 2 ms, approx.

† At or from Nominal Coil Voltage.

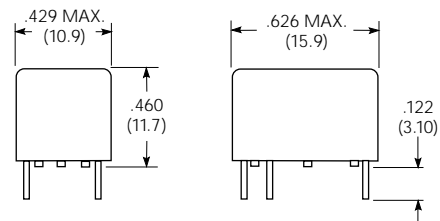
### Environmental Data

**Temperature Range:** **Standard Coil:** -40°C to +55°C.  
**Sensitive Coil:** -40°C to +75°C.  
**Vibration:** 0.059" (1.5mm) max. excursions for 10-40 Hz.  
**Shock:** **Standard Coil:** 10g for 11 ms.  
**Sensitive Coil:** 6g for 11 ms.

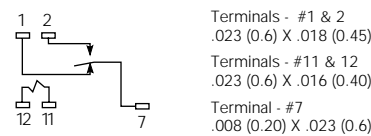
### Mechanical Data

**Termination:** Printed circuit terminals on 0.1" (2.54mm) centers.  
**Enclosure:** Sealed PBT plastic case.  
**Weight:** 0.14 oz. (4g) approximately.

### Outline Dimensions



### Wiring Diagram (Bottom View)



### PC Board Layout (Bottom View)

