



# PCH series

## 5 - 10 Amp Miniature 1 Form A or C Power PC Board Relay

Air Conditioners, Refrigerators, Microwave Ovens

UL File No. E82292

CSA File No. LR48471

VDE File No. 119568

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

- 1 Form A (SPST-NO) or 1 Form C (SPDT) contact arrangements.
- 5 or 10A ratings.
- Compact size 20L x 10W x 15.2H (mm).
- High surge voltage of 8000V.
- Cadmium-free contacts.
- Sensitive (200mW) coil available on 1 Form A types.
- UL, CSA, VDE approval.

### Contact Data @ 20°C

**Arrangements:** 1 Form A (SPST-NO) and 1 Form C (SPDT).

**Material:** AgSnO.

**Max. Switching Rate:** 300ops./ min. (no load).  
20ops./ min. (rated load).

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

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

**Minimum Load:** 100mA @ 5VDC.

**Initial Contact Resistance:** 100 milliohms @ 1A, 6VDC.

### Contact Ratings

**Ratings: Models with 1 Form C Contacts, 400mW Coil**

- 5A (NO) / 3A (NC) @ 30VDC resistive.
- 5A (NO) / 3A (NC) @ 277VAC resistive.
- 10A (NO) @ 125VAC resistive.
- TV-3 (NO).

**Models with 1 Form A Contacts, 400mW Coil**

- 5A @ 277VAC/30VDC resistive.
- 10A @ 125VAC resistive.
- TV-3.

**Models with 1 Form A Contacts, 200mW Coil**

- 5A @ 277VAC/30VDC resistive.
- 10A @ 125VAC resistive.

**Max. Switched Voltage:** AC: 277V.  
DC: 30V.

**Max. Switched Current:** 10A (NO) / 3A(NC).

**Max. Switched Power:** 1400VA, 150W (NO); 850VA, 90W (NC).

### Initial Dielectric Strength

**Between Open Contacts:** 750VAC, 50/60 Hz. (1 min.).

**Between Contacts and Coil:** 4,000VAC, 50/60 Hz. (1 min.).

**Surge Voltage Between Coil and Contacts:** 8,000V (1.2/50µs).

### Initial Insulation Resistance

**Between Mutually Insulated Conductors:** 1000Mohm @ 500VDCM.

### Coil Data

**Voltage:** 3 to 48VDC.

**Duty Cycle:** Continuous.

**Nominal Power:** 200mW or 400mW.

**Max. Coil Power:** 130% of nominal.

### Coil Data @ 20°C

200mW Coils (Only available with 1 Form A contact arrangements)				
Rated Coil Voltage (VDC)	Nominal Current (mA)	Coil Resistance (ohms) ± 10%	Must Operate Voltage (VDC)	Must Release Voltage (VDC)
5	40.0	125	3.75	0.25
6	30.0	180	4.50	0.30
9	22.5	400	6.75	0.45
12	16.7	720	9.00	0.60
24	8.6	2,800	18.00	1.20

400mW Coils				
Rated Coil Voltage (VDC)	Nominal Current (mA)	Coil Resistance (ohms) ± 10%	Must Operate Voltage (VDC)	Must Release Voltage (VDC)
3	133.3	22.5	2.25	0.15
5	80.0	62.5	3.75	0.25
6	66.7	90.0	4.50	0.30
9	44.4	202.5	6.75	0.45
12	33.3	360.0	9.00	0.60
18	22.2	810.0	13.50	0.90
24	11.1	1,440.0	18.00	1.20
48	5.6	5,760.0	36.00	2.40

### Operate Data @ 20°C

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

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

**Operate Time:** 10ms max.

**Release Time:** 5ms max.

### Environmental Data

**Temperature Range:**

**Operating:** Models with Class F insulation: -30°C to +85°C.

Models with Class A insulation: -30°C to +70°C.

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

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

**Shock, Mechanical:** 1,000m/s<sup>2</sup> (10G approximately).

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

**Operating Humidity:** 20 to 85% RH. (Non-condensing).

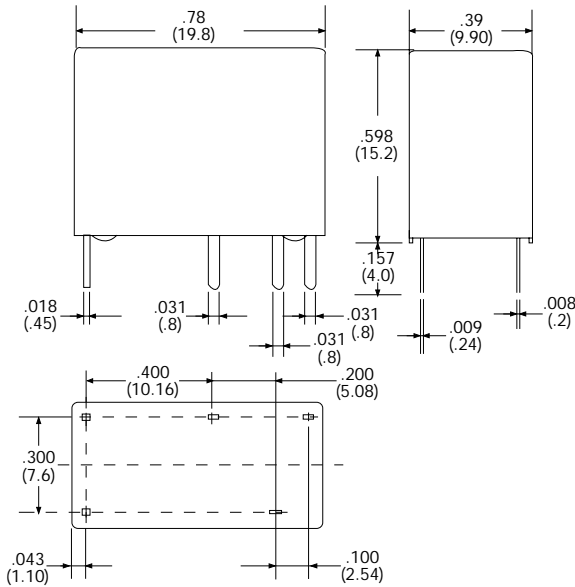
### Mechanical Data

**Termination:** Printed circuit terminals.

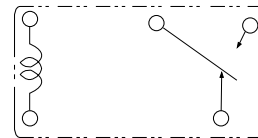
**Weight:** 0.25 oz (7g) approximately.

<b>Ordering Information</b>	Typical Part Number ▶	<b>PCH</b>	<b>-1</b>	<b>12</b>	<b>D</b>	<b>2</b>	<b>H</b>	<b>,001</b>
<b>1. Basic Series:</b> PCH = Miniature 1 Form C relay								
<b>2. Termination:</b> 1 = 1 pole								
<b>3. Coil Voltage:</b> 03 = 3VDC    06 = 6VDC    12 = 12VDC    48 = 48VDC 05 = 5VDC    09 = 9VDC    24 = 24VDC								
<b>4. Coil Input:</b> D = Standard 400mW    L = Sensitive 200mW (Only available with 1 Form A contacts)								
<b>5. Contact Material:</b> 2 = AgSnO								
<b>6. Contact Arrangement:</b> Blank = 1 Form C (Only available with Standard 400mW coil)    M = 1 Form A								
<b>7. Enclosure:</b> Blank = Vented (Flux-tight) cover    H = Sealed plastic case								
<b>8. Insulation class:</b> Blank = Class 155(F) system    A = Class 105(A) system								
<b>9. Option:</b> ,001 = Standard model    Other Suffix = Special options								

**Outline Dimensions**

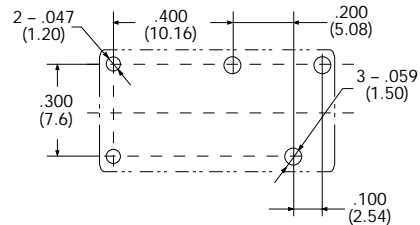


**Wiring Diagram (Bottom View)**



**NOTE:** Only necessary terminals are present on 1 Form A models.

**PC Board Layout (Bottom View)**

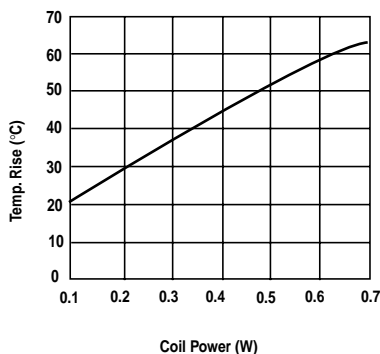


**NOTE:** Only necessary terminals are present on 1 Form A models.

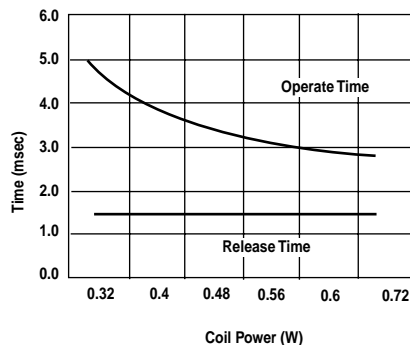
**Reference Data (Typical Values)**

(Only applicable for 1 Form C, 400mW coil model with 277VAC load on NO)

**Coil Temperature Rise**



**Operate Time**



**Life Expectancy**

