



# PCE series

## 10 Amp Miniature Power PC Board Relay

Appliances, HVAC, Office Machines

UL File No. E82292

CSA File No. LR48471

VDE File No. 6175

### Features

- Low cost, small package, 10 Amp switching capacity.
- 1 Form A and 1 Form C contact arrangements.
- UL Class F (140°C) insulation system standard
- Immersion cleanable, sealed version available.
- Applications include appliance, HVAC, security system, garage opener control, emergency lighting.

### Contact Data @ 20°C

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

**Material:** Ag Alloy, AgSnO.

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

**Expected Mechanical Life:** 10 million operations (no load).

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

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

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

### Contact Ratings

**Ratings:** 10A @ 250VAC resistive,  
10A @ 120VAC resistive,  
10A @ 28VDC resistive.

3A @ 250VAC inductive (cosφ= 0.4),  
3A @ 120VAC inductive (cosφ= 0.4),  
3A @ 28VDC inductive (L/R=7msec).

**Max. Switched Voltage:** AC: 250V.  
DC: 28V.

**Max. Switched Current:** 10A.

**Max. Switched Power:** 2,500VA, 280W.

### Initial Dielectric Strength

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

**Between Coil and Contacts:** 2,000VAC 50/60 Hz. (1 minute).

**Surge Voltage Between Coil and Contacts:** 4,000V (1.2 / 50μs).

### Initial Insulation Resistance

**Between Mutually Insulated Elements:** 1,000M ohms min. @ 500VDCM.

### Coil Data

**Voltage:** 3 to 48VDC.

**Nominal Power:** 360 mW

**Coil Temperature Rise:** 35°C max., at rated coil voltage.

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

**Duty Cycle:** Continuous.

### Coil Data @ 20°C

PCE				
Rated Coil Voltage (VDC)	Nominal Current (mA)	Coil Resistance (ohms) ± 10%	Must Operate Voltage (VDC)	Must Release Voltage (VDC)
3	120	25	2.25	0.15
5	71	70	3.75	0.25
6	60	100	4.50	0.30
9	40	225	6.75	0.45
12	30	400	9.00	0.60
24	15	1,600	18.00	1.20
48	7	6,400	36.00	2.40

### Operate Data

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

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

**Operate Time:** 10 ms max.

**Release Time:** 5 ms max.

### Environmental Data

**Temperature Range:**

**Operating:** -30°C to +70°C

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

**Operational:** 10 to 55 Hz., 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.

**Enclosure (94V-0 Flammability Ratings):**

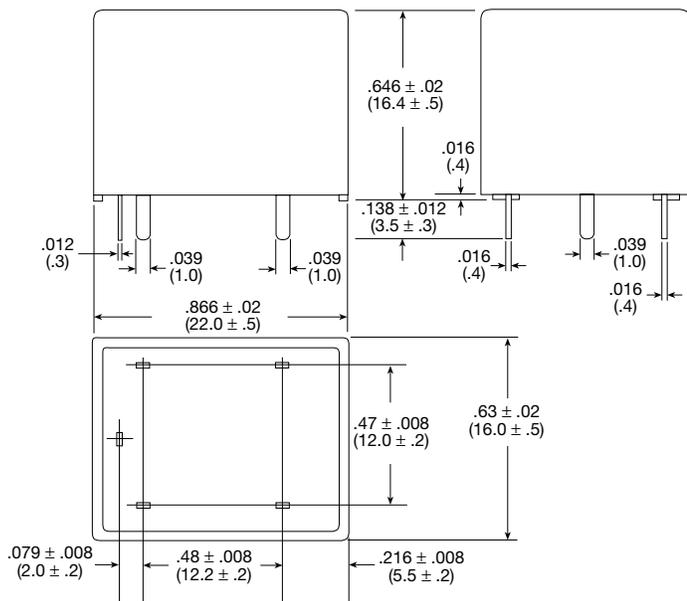
**PCE:** Sealed plastic case with knock-off nib for ventilation

**Weight:** 0.32 oz (11g) approximately.

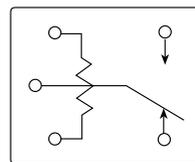
**Ordering Information**

<b>Typical Part Number</b> ▶	<b>PCE</b>	<b>-1</b>	<b>24</b>	<b>D</b>	<b>1</b>	<b>M</b>
<b>1. Basic Series:</b> PCE = Miniature Power PC board 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						
<b>5. Contact Material:</b> 1 = AgCdO      2 = AgSnO						
<b>6. Contact Arrangement:</b> Blank = 1 Form C, SPDT                      M = 1 Form A, SPST-NO						
<b>7. Enclosure:</b> Blank = Flux-tight plastic case.              H = Sealed plastic case with knock-off nib for ventilation						

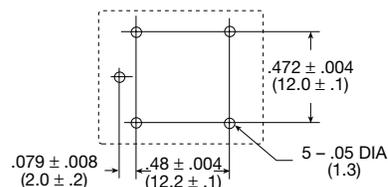
**Outline Dimensions**



**Wiring Diagram (Bottom View)**

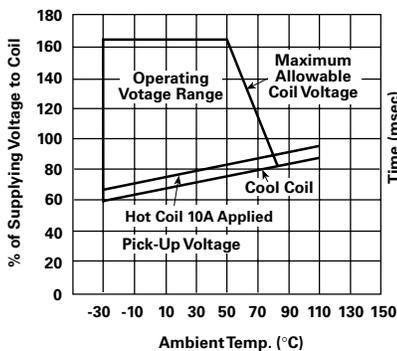


**PC Board Layout (Bottom View)**

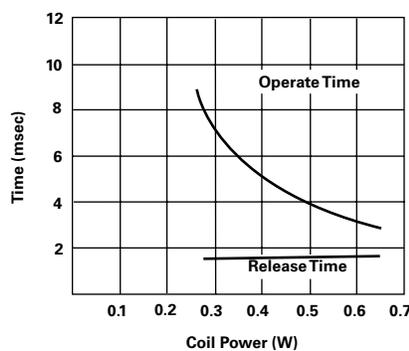


**Reference Data**

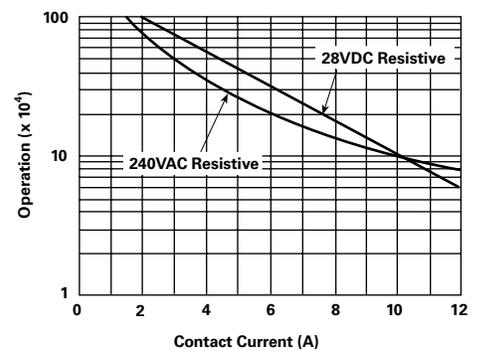
**Coil Temperature Rise**



**Operate Time**



**Life Expectancy**



**Note:** This data is based on the max. allowable temperature for E type insulation coil (115°C).