

# OSA series

## 2 Pole Miniature Power PC Board Relay

Appliances, Audio Equipment, Office Machines

UL File No. E82292

CSA File No. LR48471

SEMKO File No. 9452086 (available for DM5)

TUV File No. R9551879 (available for DM5)

### Features

- Meet UL TV-3 and CSA TV-4 rating available for DM5 type.
- 2 Form A contact arrangements.
- Immersion cleanable, sealed version available.
- Meet 3,000V dielectric voltage between coil and contacts.
- Meet 5,000V surge voltage between coil and contacts (1.2 / 50µs).

### Contact Data @ 20°C

**Arrangements:** 2 Form A (DPST-NO).

**Material:** Ag-GS Alloy (DM3) and AgSnO (DM5).

**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:**

**OSA-DM3:** 1mA @ 1VDC.

**OSA-DM5:** 100mA @ 5VDC.

**Initial Contact Resistance:** 50 milliohms @ 1A, 6VDC.

### Contact Ratings

**Ratings:** **OSA-DM3:** 3A @ 120VAC resistive,  
3A @ 24VDC resistive,

**OSA-DM5:** 5A @ 240VAC resistive,  
5A @ 30VDC resistive,  
TV-3 @ 120VAC Tungsten (UL),  
TV-4 @ 120VAC Tungsten (CSA).

**Max. Switched Voltage:**

**OSA-DM3: AC:** 240V.**DC:** 50V.

**OSA-DM5: AC:** 250V.**DC:** 30V.

**Max. Switched Current:** 5A

**Max. Switched Power:**

**OSA-DM3:** 300VA.

**OSA-DM5:** 1,100VA.

### Initial Dielectric Strength

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

**Between Coil and Contacts:** 3,000VAC 50/60 Hz. (1 minute).

**Surge Voltage Between Coil and Contacts:** 5,000V (1.2 / 50µs).

### Initial Insulation Resistance

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

### Coil Data

**Voltage:** 3 to 48VDC.

**Nominal Power:** 540 mW

**Coil Temperature Rise:** 50°C max., at rated coil voltage.

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

**Duty Cycle:** Continuous.

### Coil Data @ 20°C

OSA				
Rated Coil Voltage (VDC)	Nominal Current (mA)	Coil Resistance (ohms) ± 10%	Must Operate Voltage (VDC)	Must Release Voltage (VDC)
3	176.5	17	2.25	0.30
5	106.4	47	3.75	0.50
6	88.0	68	4.50	0.60
9	58.0	155	6.75	0.90
12	44.4	270	9.00	1.20
24	21.8	1,100	18.00	2.40
48	11.0	4,400	36.00	4.80

### Operate Data

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

**Must Release Voltage:** 10% of nominal voltage or more.

**Operate Time:** 20 ms max.

**Release Time:** 10 ms max.

### Environmental Data

**Temperature Range:**

**Operating:** -30°C to +60°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> (100G 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):**

**OSA-SS:** Vented (Flux-tight) plastic cover.

**OSA-SH:** Sealed plastic case.

**Weight:** 0.46 oz (13g) approximately.

**Ordering Information**

Typical Part Number ▶

**OSA**

**-SS**

**-2**

**24**

**D**

**M**

**3**

**1. Basic Series:**

OSA = Miniature Power PC board relay.

**2. Enclosure:**

SS = Vent (Flux-tight)\* plastic cover.  
SH = Sealed, plastic case.

**3. Termination:**

2 = 2 pole

**4. Coil Voltage:**

03 = 3VDC      06 = 6VDC      12 = 12VDC      48 = 48VDC  
05 = 5VDC      09 = 9VDC      24 = 24VDC

**5. Coil Input:**

D = Standard

**6. Contact Arrangement:**

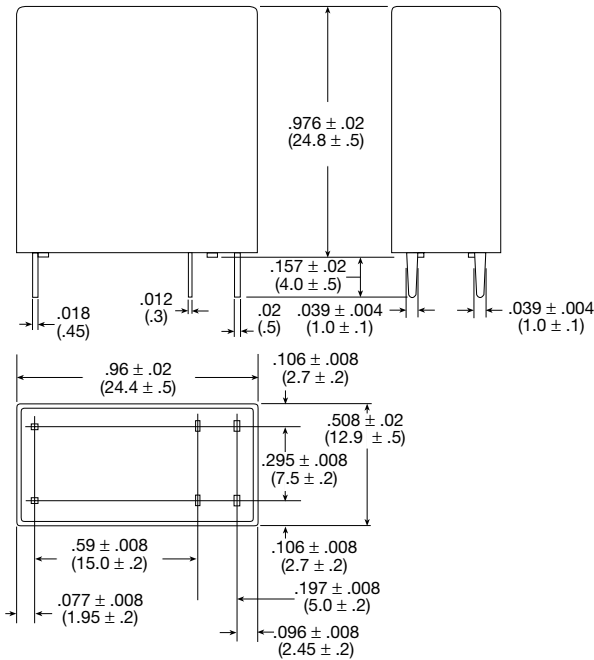
M = 2 Form A, DPST-NO

**7. Contact Rating:**

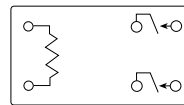
3 = 3A @ 120VAC resistive (DM3).      5 = 5A @ 240VAC resistive (DM5).

\* Not suitable for immersion cleaning processes.

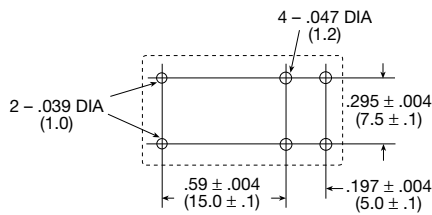
**Outline Dimensions**



**Wiring Diagram (Bottom View)**

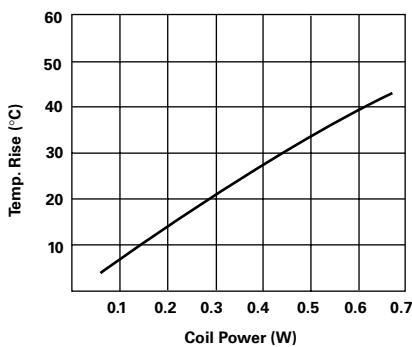


**PC Board Layout (Bottom View)**

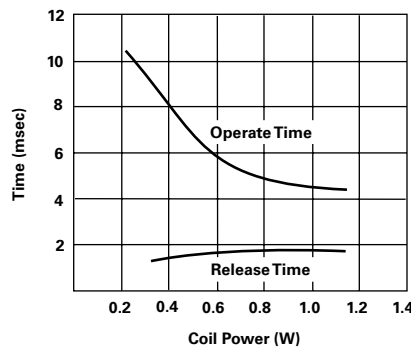


**Reference Data**

**Coil Temperature Rise**



**Operate Time**



**Life Expectancy**

