

## OU DHseries

### 10 Amp Miniature, Sealed PC Board Relay

Appliances, HVAC, Office Machines.

UL File No. E58304

CSA File No. LR48471

#### Features

- Low profile miniature power relay
- High density available on PC board due to small size.
- 450mW coil available.
- Meets 2kV dielectric between coil and contacts.
- Meets 5kV surge voltage.
- Immersion cleanable, sealed version available.

#### Contact Data @ 20°C

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

**Material:** Ag Alloy.

**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 @ 120VAC resistive,  
10A @ 28VDC resistive,  
1/4 HP @ 120VAC.

3A @ 120VAC inductive ( $\cos\phi = 0.4$ ),  
3A @ 28VDC inductive (L/R = 7msec).

**Max. Switched Voltage:** AC: 240V.  
DC: 110V.

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

**Max. Switched Power:** 1,200VA, 300W.

#### 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:** 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:** 450mW except 48VDC coil (660mW)

**Coil Temperature Rise:** 60°C max., at rated coil voltage.

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

**Duty Cycle:** Continuous.

#### Coil Data @ 20°C

| OU DH                    |                      |                                   |                            |                            |
|--------------------------|----------------------|-----------------------------------|----------------------------|----------------------------|
| Rated Coil Voltage (VDC) | Nominal Current (mA) | Coil Resistance (ohms) $\pm 10\%$ | Must Operate Voltage (VDC) | Must Release Voltage (VDC) |
| 3                        | 150.0                | 20                                | 2.25                       | 0.30                       |
| 6                        | 75.0                 | 80                                | 4.50                       | 0.60                       |
| 9                        | 50.0                 | 180                               | 6.75                       | 0.90                       |
| 12                       | 37.5                 | 320                               | 9.00                       | 1.20                       |
| 24                       | 20.9                 | 1,280                             | 18.00                      | 2.40                       |
| 48                       | 13.7                 | 3,500                             | 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:** 10 ms max.

**Release Time:** 5 ms max.

#### Environmental Data

**Temperature Range:**

**Operating:** -30°C to +60°C

(no water condensation and no water drop.)

**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.

#### Mechanical Data

**Termination:** Printed circuit terminals.

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

**OU DH-SS:** Vented (Flux-tight), plastic cover.

**OU DH-SH:** Sealed, plastic case.

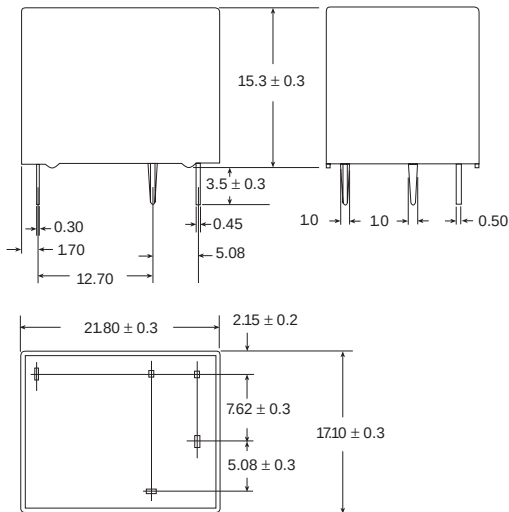
**Weight:** 10g approximately.

## Ordering Information

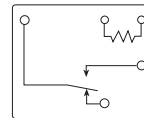
|                                                                                                                  |  |             |            |           |           |          |          |
|------------------------------------------------------------------------------------------------------------------|--|-------------|------------|-----------|-----------|----------|----------|
| Typical Part Number ►                                                                                            |  | <b>OUDH</b> | <b>-SH</b> | <b>-1</b> | <b>12</b> | <b>D</b> | <b>M</b> |
| <b>1. Basic Series:</b><br>OUDH = Miniature, sealed PC board relay.                                              |  |             |            |           |           |          |          |
| <b>2. Enclosure:</b><br>SS = Vented (Flux-tight)* plastic cover.<br>SH = Sealed, plastic case.                   |  |             |            |           |           |          |          |
| <b>3. Termination:</b><br>1 = 1 pole                                                                             |  |             |            |           |           |          |          |
| <b>4. Coil Voltage:</b><br>03 = 3VDC      09 = 9VDC      24 = 24VDC<br>06 = 6VDC      12 = 12VDC      48 = 48VDC |  |             |            |           |           |          |          |
| <b>5. Coil Input:</b><br>D = Standard                                                                            |  |             |            |           |           |          |          |
| <b>6. Contact Arrangement:</b><br>Blank = 1 Form C, SPDT      M = 1 Form A, SPST-NO                              |  |             |            |           |           |          |          |

\* Not suitable for immersion cleaning processes.

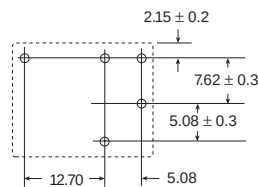
## Outline Dimensions



## Wiring Diagram (Bottom View)

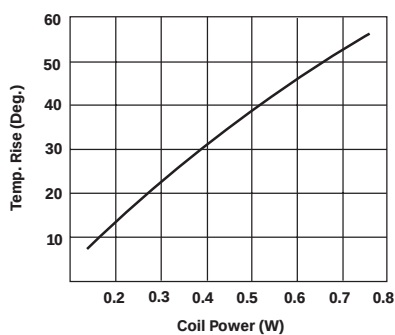


## PC Board Layout (Bottom View)

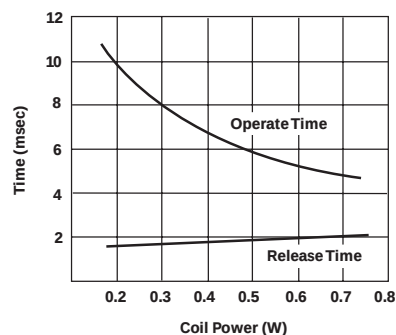


## Reference Data

### Coil Temperature Rise



### Operate Time



### Life Expectancy

