

# OJ/OJE series

# 3-10 Amp Miniature, **PC Board Relay**

# Appliances, HVAC, Industrial Control.

**A** UL File No. E82292 © CSA File No. LR48471 VDE File No. 10080

🛕 TUV File No. R75081

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.

### Coil Data @ 20°C

OJ/OJE-L Sensitive						
Rated Coil	Nominal	Coil	Must Operate	Must Release		
Voltage	Current	Resistance	Voltage	Voltage		
(VDC)	(mA)	(ohms) ± 10%	(VDC)	(VDC)		
5	40.0	125	3.75	0.25		
6	33.3	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		

### OJ/OJE-D and -H Standard

Rated Coil Voltage (VDC)	Nominal Current (mA)	Coil Resistance (ohms) ± 10%	Must Operate Voltage (VDC)	Must Release Voltage (VDC)
5	91.0	55	3.50	0.25
6	75.0	80	4.20	0.30
9	50.0	180	6.30	0.45
12	37.5	320	8.40	0.60
24	18.8	1,280	16.80	1.20
48	9.4	5,100	33.60	2.40

# **Operate Data**

**Must Operate Voltage:** 

OJ/OJE -L: 75% of nominal voltage or less.

OJ/OJE -D and -H: 70% of nominal voltage or less.

Must Release Voltage:

OJ/OJE -L: 5% of nominal voltage or more. OJ/OJE -D and -H: 5% of nominal voltage or more.

Operate Time: OJ/OJE -L: 15 ms max.

OJ/OJE -D and -H: 10 ms max.

Release Time: 4 ms max.

# **Environmental Data**

Temperature Range:

Operating, Class A (105°C) Insulation:

**OJ/OJE-L:** -30°C to +80°C

**OJ/OJE-D & -H:** -30°C to +60°C.

Operating, Class F (155°C) Insulation:

**OJ/OJE-L:** -30°C to +105°C OJ/OJE-D and -H: -30°C to +85°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):

OJ/OJE-SS: Vented (Flux-tight), plastic cover.

OJ/OJE-SH: Sealed, plastic case. Weight: 0.32 oz (9g) approximately.

# **Features**

- Miniature size 18.2 x 10.2 x 14.7h.
- 1 Form A (SPST-NO) contact arrangement.
- Designed to meet UL, CSA, VDE, TUV requirements.
  Designed to meet 4kV dielectric between coil and contacts (OJ).
- · Sensitive and standard coils available.
- Immersion cleanable, sealed version available.

# Contact Data @ 20°C

Arrangements: 1 Form A (SPST-NO).

Material: Ag, 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: OJ/OJE-LM: 3A @ 250VAC resistive, 3A @ 28VDC resistive.

OJ/OJE-LMH: 8A @ 250VAC resistive. 8A @ 28VDC resistive. OJ/OJE-DM: 5A @ 250VAC resistive,

5A @ 28VDC resistive. OJ/OJE-HM: 10A @ 250VAC resistive,

10A @ 28VDC resistive. Max. Switched Voltage: AC: 265V.

DC: 30V.

Max. Switched Power:

OJ/OJE-LM: 720VA, 90W **OJ/OJE-LMH**: 1,800VA, 200W OJ/OJE-DM: 1,200VA, 150W **OJ/OJE-HM:** 2,500VA, 280W

Note: Consult factory regarding TV-5 rated models.

## Initial Dielectric Strength

**Between Open Contacts:** 

OJ: 750VAC 50/60 Hz. (1 minute). **OJE**: 750VAC 50/60 Hz. (1 minute).

**Between Coil and Contacts:** 

OJ: 4,000VAC 50/60 Hz. (1 minute). OJE: 3,000VAC 50/60 Hz. (1 minute). Surge Voltage Between Coil and Contacts:

**OJ:** 10,000V (1.2/50μs). **OJE**: 5,000V (1.2/50μs).

# **Initial Insulation Resistance**

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

# **Coil Data**

Voltage: 5 to 48VDC.

Nominal Power: OJ/OJE-LM and LMH: 200 mW.

OJ/OJE-DMand HM: 450 mW.

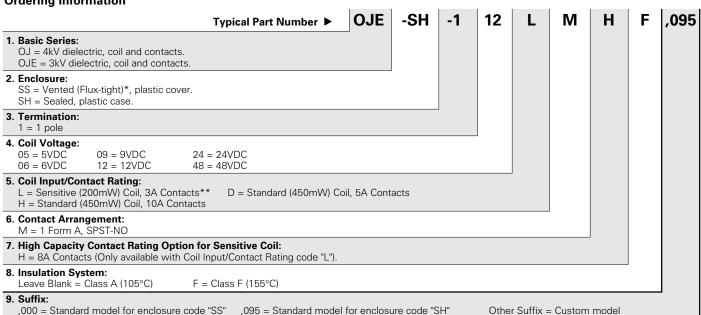
Coil Temperature Rise:

OJ/OJE-LM and LMH: 30°C max., at rated coil voltage. OJ/OJE-DM and HM: 40°C max., at rated coil voltage.

Max. Coil Power: 130% of nominal.

Duty Cycle: Continuous.

# **Ordering Information**



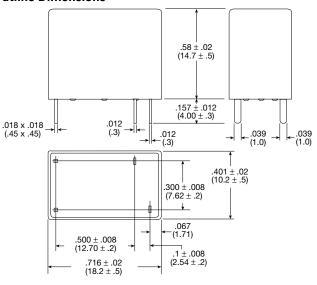
\* Not suitable for immersion cleaning processes

# Our authorized distributors are more likely to stock the following items for immediate delivery.

OJ-SH-105HM,095 OJE-SH-105DM,095 OJE-SH-112HM,095 OJE-SH-124LMH,095 OJE-SH-112DM,095 OJE-SH-105LMH,095

OJ-SH-112LMH,095 OJE-SH-112LMH,095 OJE-SH-112LMH,095

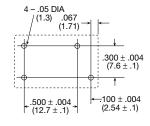
### **Outline Dimensions**



# Wiring Diagram (Bottom View)



# PC Board Layout (Bottom View)



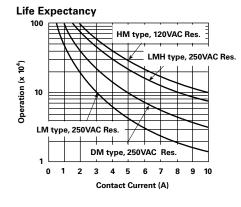
# Reference Data

# Coil Temperature Rise 60 50 40 98 82 40 10 0.1 0.2 0.3 0.4 0.5 0.6 0.7

Coil Power (W)

# Operate Time 12 10 8 8 Operate Time 4 2 Release Time 0.1 0.2 0.3 0.4 0.5 0.6 0.7 Coil Power (W)

Test relay: OJE-SH-112LMH



Dimensions are shown for reference purposes only.

Dimensions are in inches over (millimeters) unless otherwise specified. Specifications and availability subject to change.

<sup>\*\*</sup> For higher contact rating with sensitve coil, add suffix "H" to the end of the part number as indicated in step 7 of Ordering Information.