OJ/OJE series

3-10 Amp Miniature, PC Board Relay

Appliances, HVAC, Industrial Control.

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.

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.

Coil Data @ 20°C

OJ/OJE-L Sensitive				
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	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/s² (100G approximately).
Operational: 100m/s² (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.

Ordering Information

Typical Part Number ▶	OJE	-SH	-1	12	L	M	H	F	,095

1. Basic Series:
OJ = 4kV dielectric, coil and contacts.
OJE = 3kV dielectric, coil and contacts.

2. Enclosure:
SS = Vented (Flux-tight)*, plastic cover.
SH = Sealed, plastic case.

3. Termination:
1 = 1 pole

4. Coil Voltage:
05 = 5VDC 09 = 9VDC 24 = 24VDC
06 = 6VDC 12 = 12VDC 48 = 48VDC

5. Coil Input/Contact Rating:
L = Sensitive (200mW) Coil, 3A Contacts** D = Standard (450mW) Coil, 5A Contacts
H = Standard (450mW) Coil, 10A Contacts

6. Contact Arrangement:
M = 1 Form A, SPST-NO

7. High Capacity Contact Rating Option for Sensitive Coil:
H = 8A Contacts (Only available with Coil Input/Contact Rating code "L").

8. Insulation System:
Leave Blank = Class A (105°C) F = Class F (155°C)

9. Suffix:
,000 = Standard model for enclosure code "SS" ,095 = Standard model for enclosure code "SH" Other Suffix = Custom model

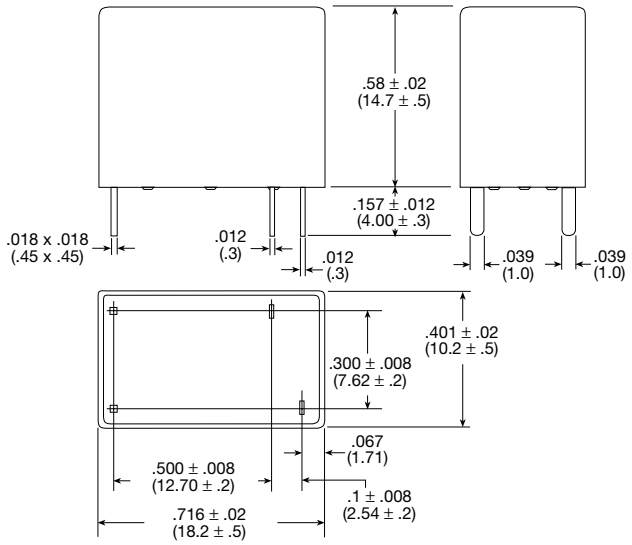
* Not suitable for immersion cleaning processes.

** 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.

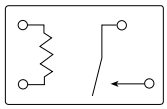
Our authorized distributors are more likely to stock the following items for immediate delivery.

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

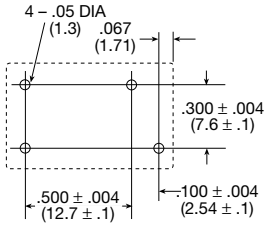
Outline Dimensions



Wiring Diagram (Bottom View)

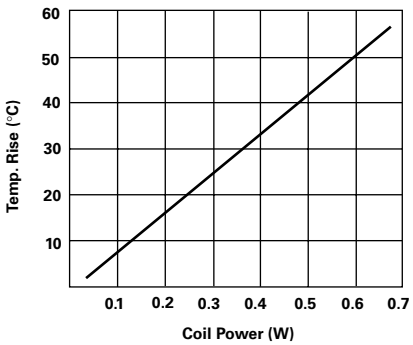


PC Board Layout (Bottom View)

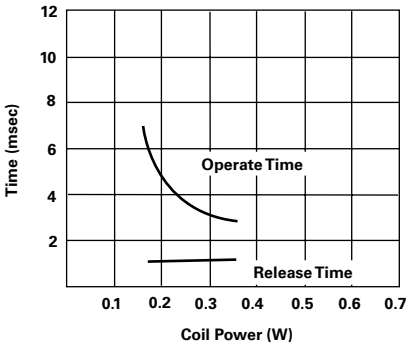


Reference Data

Coil Temperature Rise



Operate Time



Test relay: OJE-SH-112LMH

Life Expectancy