



**THE DATASHEET OF  
OZ-SH-112LM1,294**





# OZ/OZF series

## 16A Miniature Power PC Board Relay

Appliances, HVAC, Office Machines.

UL File No. E82292

CSA File No. LR48471

TUV File No. R85447

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

- Meet UL 508, CSA and TUV requirements.
- 1 Form A and 1 Form C contact arrangements.
- Immersion cleanable, sealed version available.
- Meet 5,000V dielectric voltage between coil and contacts.
- Meet 10,000V surge voltage between coil and contacts (1.2 / 50μs).
- Quick Connect Terminal type available (OZF).
- UL TV-8 rating available (OZT).

### Contact Data @ 20°C

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

**Material:** Ag Alloy (1 Form C) and AgSnO (1 Form A).

**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:

- OZ/OZF:** 20A @ 120VAC resistive,  
16A @ 240VAC resistive,  
5A @ 120VAC inductive (cosφ= 0.4),  
5A @ 24VDC inductive (L/R= 7msec).  
1/2 HP @ 120VAC, 70°C.  
1 HP @ 240VAC.  
20A @ 120VAC, general use.  
16A @ 240VAC, general use, N.O. only, @ 105°C\*.  
16A @ 240VAC, general use, carry only, N.C. only, @ 105°C\*.

\* Rating applicable only to models with Class F (155°C) insulation system.

**OZT:** 8A @ 240VAC resistive,  
TV-8 @ 120VAC tungsten, 25,000ops.

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

**Max. Switched Current:** 16A (OZ/OZF), 8A (OZT).

**Max. Switched Power:** 3,850VA, 600W.

### Initial Dielectric Strength

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

**Between Coil and Contacts:** 5,000VAC 50/60 Hz. (1 minute).

**Surge Voltage Between Coil and Contacts:** 10,000V (1.2 / 50μs).

### Initial Insulation Resistance

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

### Coil Data

**Voltage:** 5 to 48VDC.

**Nominal Power:** 720 mW (OZ-D), 540mW (OZ-L).

**Coil Temperature Rise:** 45°C max., at rated coil voltage.

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

**Duty Cycle:** Continuous.

### Coil Data @ 20°C

OZ-L Sensitive				
Rated Coil Voltage (VDC)	Nominal Current (mA)	Coil Resistance (ohms) ± 10%	Must Operate Voltage (VDC)	Must Release Voltage (VDC)
5	106.4	47	3.75	0.25
6	88.0	68	4.50	0.30
9	58.0	155	6.75	0.45
12	44.4	270	9.00	0.60
24	21.8	1,100	18.00	1.20
48	10.9	4,400	36.00	2.40
OZ-D Standard				
Rated Coil Voltage (VDC)	Nominal Current (mA)	Coil Resistance (ohms) ± 10%	Must Operate Voltage (VDC)	Must Release Voltage (VDC)
5	138.9	36	3.50	0.25
6	120.0	50	4.20	0.30
9	78.3	115	6.30	0.45
12	60.0	200	8.40	0.90
24	29.3	820	16.80	1.20
48	14.5	3,300	33.60	2.40

### Operate Data

#### Must Operate Voltage:

**OZ-D:** 70% of nominal voltage or less.

**OZ-L:** 75% of nominal voltage or less.

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

**Operate Time:** **OZ-D:** 15 ms max.

**OZ-L:** 20 ms max.

**Release Time:** 8 ms max.

### Environmental Data

#### Temperature Range:

**Operating, Class A (105°C) Insulation:**

**OZ-D:** -30°C to +55°C

**OZ-L:** -30°C to +70°C.

**Operating, Class F (155°C) Insulation:**

**OZ-D:** -30°C to +85°C

**OZ-L:** -30°C to +105°C.

**Operating:** **OZ-D:** -30°C to +55°C

**OZ-L:** -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> (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):**

**OZ-S:** Vented (Flux-tight) plastic cover.

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

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

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

**Ordering Information**

Typical Part Number ▶

**OZ -SH -1 24 L M 1 F ,294**

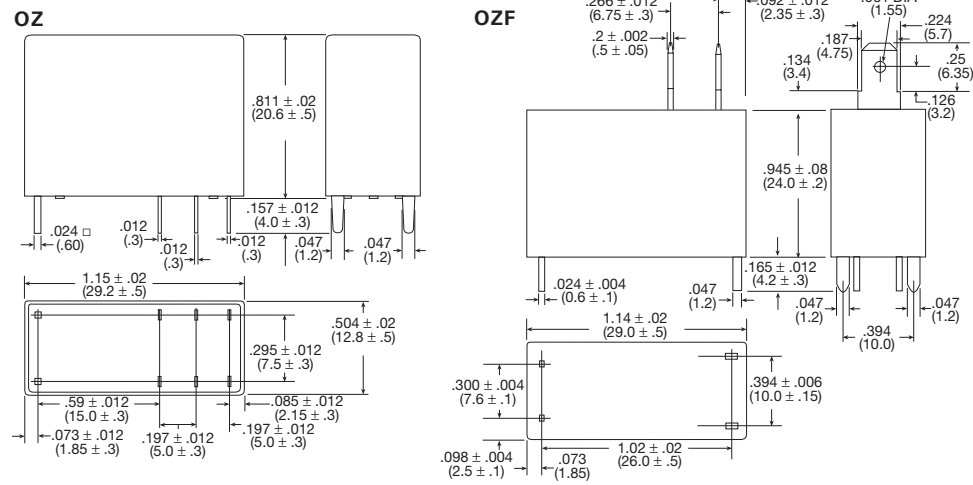
<b>1. Basic Series:</b> OZ = 16A PC Board Terminals      OZF = Quick Connect Terminals OZT = TV-8 Rating PC Board Terminals	
<b>2. Enclosure:</b> S = Vent (Flux-tight)* plastic cover (only available with OZF) SS = Vent (Flux-tight)* plastic cover.      SH = Sealed, plastic case.	
<b>3. Termination:</b> 1 = 1 pole	
<b>4. Coil Voltage:</b> 05 = 5VDC      09 = 9VDC      24 = 24VDC 06 = 6VDC      12 = 12VDC      48 = 48VDC	
<b>5. Coil Input:</b> D = Standard (720mW)      L = Sensitive (540mW)	
<b>6. Contact Arrangement:</b> Blank = 1 Form C, SPDT      M = 1 Form A, SPST-NO	
<b>7. Contact Material:</b> Blank = AgCdO (1 Form C)      1 = AgSnO (1 Form A, only available with OZ....LM1 or DM1)	
<b>8. Mounting and Termination:</b> Blank = PC Board Terminals      P = PC Board and Quick Connect Terminals (only available only with OZF-S-1..LM1P).	
<b>9. Insulation System:</b> Blank = Class A (105°C) Insulation      F = Class F (155°C) Insulation	
<b>10. Suffix:</b> ,200 = Standard model for "SS" enclosure on OZ and OZT      ,000 = Standard model for coil input "D" on OZF      Other Suffix = Custom model ,294 = Standard model for "SH" enclosure on OZ and OZT      ,300 = Standard model for coil input "L" on OZF	

\* Not suitable for immersion cleaning processes.

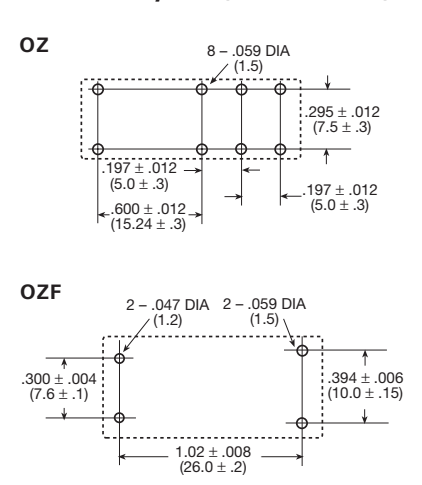
**Our authorized distributors are more likely to maintain the following items in stock for immediate delivery.**

- |                |                  |                  |                |                |
|----------------|------------------|------------------|----------------|----------------|
| OZ-SH-105D,294 | OZ-SH-124D,294   | OZ-SH-112LM1,294 | OZ-SH-105L,294 | OZ-SH-124L,294 |
| OZ-SH-112D,294 | OZ-SH-105LM1,294 | OZ-SH-124LM1,294 | OZ-SH-112L,294 |                |

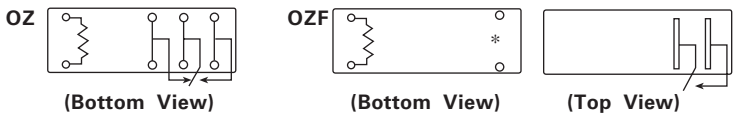
**Outline Dimensions**



**PC Board Layouts (Bottom View)**

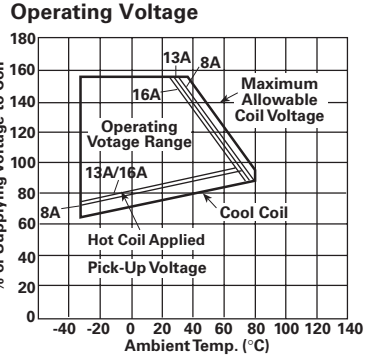


**Wiring Diagrams**



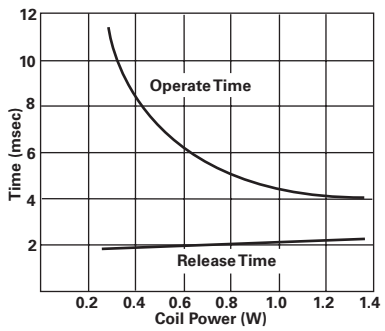
\* No electrical connection, for board attachment only.

**Reference Data**

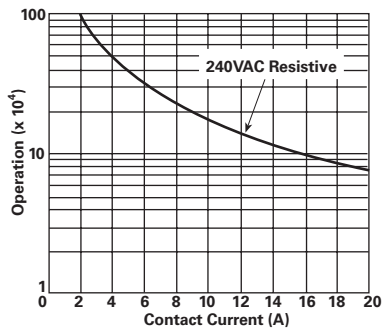


Note: This data is based on the max. allowable temperature for E type insulation coil (115°C).

**Operate Time**



**Life Expectancy**



Dimensions are shown for reference purposes only.

Dimensions are in inches over (millimeters) unless otherwise specified.

Specifications and availability subject to change.

www.tycoelectronics.com  
Technical support:  
Refer to inside back cover.

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