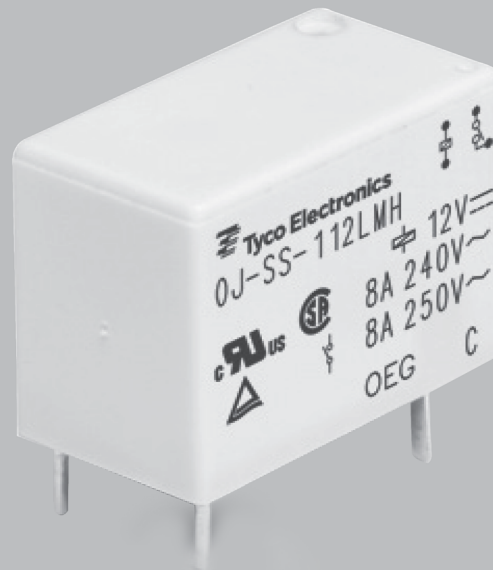




## MINIATURE PCB RELAY OJ/OJE

- 1 Pole, 1 Form A (NO) Contact
- 3-10A contact rating
- Small size with outline dimension of 18.2L\*10.2W\*14.7H(mm)
- 4000Vrms coil contact dielectric strength (OJ type)
- Sensitive coil optional (200mW type);
- WG version, Anti-Ex version (Haz-Loc version) optional

### Typical applications

Major home appliances, small appliances, HVAC, Industrial control

## Approvals

VDE 40007630, cULus E82292, CQC03001007764, TUV R 501391660014-0015

## Contact Data

|                               |                                                                                                                       |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| Contact arrangement           | 1 form A, 1 NO                                                                                                        |
| Rated voltage                 | 30VDC, 250VAC                                                                                                         |
| Max. switching voltage        | 30VDC, 277VAC                                                                                                         |
| Rated current                 | 3 to 10A                                                                                                              |
| Contact material              | AgNi, AgSnO, AgCdO                                                                                                    |
| Initial contact resistance    | 100 milliohms @ 1A,6VDC                                                                                               |
| Min. recommended contact load | 100mA, 5VDC                                                                                                           |
| Operate time max.             | OJ/OJE-L: 15ms                                                                                                        |
|                               | OJ/OJE-D/H: 10ms                                                                                                      |
| Release time max.             | 4ms                                                                                                                   |
| Electrical endurance          |                                                                                                                       |
| UL                            |                                                                                                                       |
| OJ/OJE-LM                     | 3A 250VAC, general use, 100k ops                                                                                      |
| OJ/OJE-DM                     | 5A 250VAC 85C 60k ops, 10 LRA / 1.5 FLA, 120VAC, 100k ops                                                             |
| OJ/OJE-LMH                    | 8A 277VAC res, 70C 100k ops (SS), 6.6 LRA / 1.1 FLA, 120VAC, 105C 100k ops                                            |
| OJ/OJE-LMH2                   | 8A 250VAC res, 85C 30k ops, 12 LRA / 2 FLA 250VAC, 85C 100k ops                                                       |
| OJ/OJE-HM                     | 10A 250VAC, general use, 30k ops (SH type), 18 LRA / 4 FLA, 240VAC, 85C 100k ops, 7.5A 240VAC res, 105C 100k ops (SS) |
| OJ/OJE-HM2                    | 10A 250VAC res, 100k ops (SS type), 7.5A 240VAC res, 105C 100k ops (SS type)                                          |
| OJ/OJE-HM6                    | 10A 250VAC res, 85C 50k ops (OJ WG type only), 7.5A 240VAC res, 105C 100k ops                                         |
| VDE                           |                                                                                                                       |
| OJ/OJE-LM                     | 3A 250VAC res, 55C 100k ops                                                                                           |
| OJE-DM                        | 5A 250VAC res, 85C 50k ops                                                                                            |
| OJ/OJE-LMH                    | 8A 250VAC res, 85C 10k ops                                                                                            |
| OJ-LMH2                       | 8A 250VAC res, 85C 25k ops                                                                                            |
| OJ-LMH2                       | 5A 250VAC res, 105C 50k ops                                                                                           |
| OJE-HM                        | 10A 250VAC res, 85C 30k ops                                                                                           |
| OJ-HM                         | 10A 250VAC res, 85C 10k ops                                                                                           |
| OJ-HM2                        | 10A 250VAC res, 85C 50k ops                                                                                           |
| Mechanical endurance, DC coil | 10x10 <sup>6</sup> operations                                                                                         |

## Coil Data

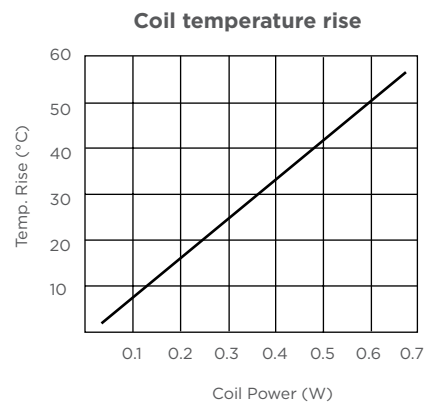
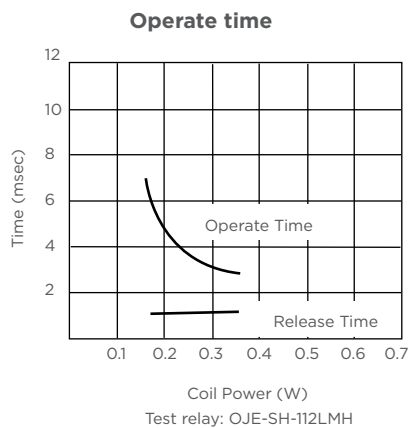
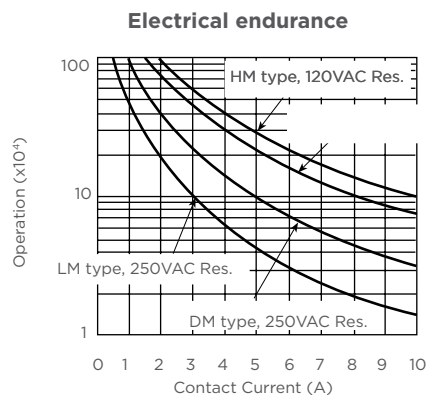
|                                     |            |
|-------------------------------------|------------|
| Coil voltage range                  | 3 to 48VDC |
| Operative range, IEC 61810          | 2          |
| Coil insulation system according UL | Class F    |

## Coil versions, DC coil, OJ/OJE-L sensitive type

| Coil code | Rated voltage VDC | Operate voltage VDC | Release voltage VDC | Coil Resistance $\Omega \pm 10\%$ | Rated coil power mW |
|-----------|-------------------|---------------------|---------------------|-----------------------------------|---------------------|
| 003       | 3                 | 2.25                | 0.3                 | 45                                | 200                 |
| 005       | 5                 | 3.75                | 0.5                 | 125                               | 200                 |
| 006       | 6                 | 4.5                 | 0.6                 | 180                               | 200                 |
| 009       | 9                 | 6.75                | 0.9                 | 405                               | 200                 |
| 012       | 12                | 9                   | 1.2                 | 720                               | 200                 |
| 024       | 24                | 18                  | 2.4                 | 2880                              | 200                 |
| 036       | 36                | 27                  | 3.6                 | 6480                              | 200                 |
| 048       | 48                | 36                  | 4.8                 | 11520                             | 200                 |

## Coil versions, DC coil, OJ/OJE-D and -H type

| Coil code | Rated voltage VDC | Operate voltage VDC | Release voltage VDC | Coil Resistance $\Omega \pm 10\%$ | Rated coil power mW |
|-----------|-------------------|---------------------|---------------------|-----------------------------------|---------------------|
| 003       | 3                 | 2.25                | 0.3                 | 20                                | 450                 |
| 005       | 5                 | 3.75                | 0.5                 | 55.5                              | 450                 |
| 006       | 6                 | 4.5                 | 0.6                 | 80                                | 450                 |
| 009       | 9                 | 6.75                | 0.9                 | 180                               | 450                 |
| 012       | 12                | 9                   | 1.2                 | 320                               | 450                 |
| 024       | 24                | 18                  | 2.4                 | 1280                              | 450                 |
| 036       | 36                | 27                  | 3.6                 | 2880                              | 450                 |
| 048       | 48                | 36                  | 4.8                 | 5120                              | 450                 |



## Insulation Data

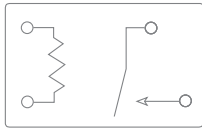
|                              |                      |
|------------------------------|----------------------|
| Initial dielectric strength  |                      |
| Between open contacts        | 750Vrms              |
| Between contact and coil     | OJ: 4000Vrms         |
|                              | OJE: 3000Vrms        |
| Clearance/creepage           |                      |
| Between contact and coil     | OJ: > 7.7mm / 9.4mm  |
| Between contact and coil     | OJE: > 3.2mm / 3.6mm |
| Tracking index of relay base | PTI 250              |

## Other Data

|                                      |                                                                                                                                                                                                                  |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Material compliance                  | EU RoHS/ELV, China RoHS, REACH, Halogen content refer to the Product Compliance Support Center at <a href="http://www.te.com/customersupport/rohssupportcenter">www.te.com/customersupport/rohssupportcenter</a> |
| Ambient temperature                  |                                                                                                                                                                                                                  |
| LM                                   | -40 ~ +105C                                                                                                                                                                                                      |
| DM                                   | -40 ~ +85C                                                                                                                                                                                                       |
| LMH(2)                               | -40 ~ +105C                                                                                                                                                                                                      |
| HM(2)/HM6                            | -40 ~ +105C                                                                                                                                                                                                      |
| Category of environmental protection |                                                                                                                                                                                                                  |
| IEC 61810                            | RTII - flux proof                                                                                                                                                                                                |
|                                      | RTIII - wash tight                                                                                                                                                                                               |
| Shock resistance (functional)        | 10g                                                                                                                                                                                                              |
| Shock resistance (destructive)       | 100g                                                                                                                                                                                                             |
| Weight                               | 6g                                                                                                                                                                                                               |
| Resistance to soldering heat THT     |                                                                                                                                                                                                                  |
| IEC 60068-2-20                       | RTII: 270°C/10s                                                                                                                                                                                                  |
|                                      | RTIII: 260°C/5s                                                                                                                                                                                                  |
| Packaging unit                       | Tray/100, carton box/1000                                                                                                                                                                                        |

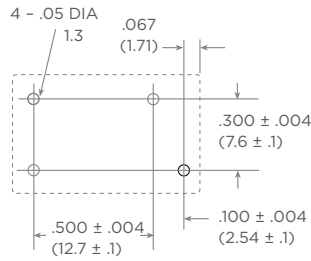
## Terminal assignment

Bottom view on solder pins

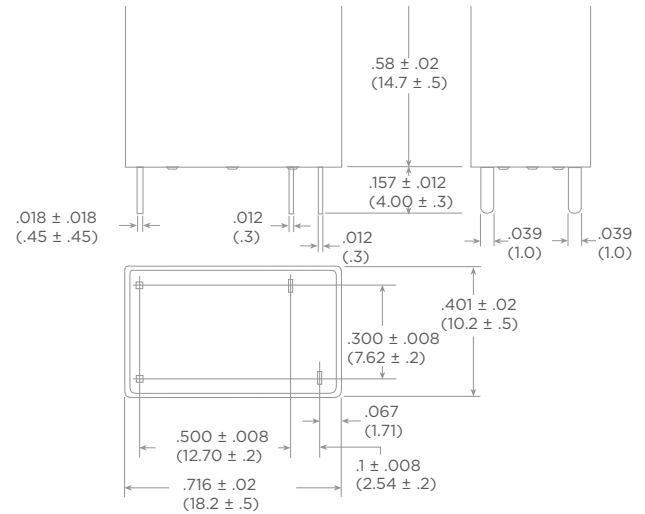


## PCB layout

Bottom view on solder pins



## Dimensions



| Subheaders                    | Code description                                                | Codes | Description                                                                                                                                 | Codes      | Description        |
|-------------------------------|-----------------------------------------------------------------|-------|---------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|
| Product code structure        | typical structure code OJ                                       | -SS   | -1                                                                                                                                          | 12         | HM2                |
| Basic type                    |                                                                 |       |                                                                                                                                             |            |                    |
|                               | <b>OJE</b>                                                      |       | 3KV dielectric between contact -coil                                                                                                        |            |                    |
|                               | <b>OJ</b>                                                       |       | 4KV dielectric between contact -coil                                                                                                        |            |                    |
| Category of protection        |                                                                 |       |                                                                                                                                             |            |                    |
|                               | <b>SS</b>                                                       |       | Flux proof                                                                                                                                  |            |                    |
|                               | <b>SH</b>                                                       |       | Wash tight                                                                                                                                  |            |                    |
| Number of poles               |                                                                 |       |                                                                                                                                             |            |                    |
|                               | <b>1</b>                                                        |       | 1 Pole                                                                                                                                      |            |                    |
| Coil voltage                  | Coil code: please refer to coil voltage table (e.g. 12 = 12VDC) |       |                                                                                                                                             |            |                    |
| Contact rating and coil power |                                                                 |       |                                                                                                                                             |            |                    |
|                               |                                                                 |       | 200mW coil power                                                                                                                            |            |                    |
|                               | <b>LM</b>                                                       |       | 3A type                                                                                                                                     | DM         | 5A type            |
|                               | <b>LMH/LMH2</b>                                                 |       | 8A type                                                                                                                                     | HM/HM2/HM6 | 10A type           |
| Insulation system designation |                                                                 |       |                                                                                                                                             |            |                    |
|                               | <b>Blank</b>                                                    |       | Insulation class F                                                                                                                          | F          | Insulation class F |
| Special type                  |                                                                 |       |                                                                                                                                             |            |                    |
|                               | <b>Blank-standard</b>                                           |       | WG - IEC 60335-1 complaint: R - reflow-soldering type: EX1 - EX version & WE X1 - EX-version + WG (IEC 60079-15,22.4 Enclosed-break device) |            |                    |
| Suffix                        |                                                                 |       |                                                                                                                                             |            |                    |
|                               | <b>,00000</b>                                                   |       | Standard                                                                                                                                    |            |                    |
|                               | <b>,**E**</b>                                                   |       | EX-version (IEC 60079-15 , 22.5 Sealed device)                                                                                              |            |                    |

| Product Code             | Part Number | Rating | Contact Material | Coil voltage | Coil powder | Type       | Insulation | Enclosure       |            |
|--------------------------|-------------|--------|------------------|--------------|-------------|------------|------------|-----------------|------------|
| OJE-SH-112LM,000         | 1461401-5   | 3A     | AgNi             | 12VDC        | 200mW       | standard   | Class F    | Wash tight      |            |
| OJ-SS-112LM,000          | 2-1419129-1 |        |                  | 24VDC        |             |            |            | Flux proof      |            |
| OJ-SS-124LM,000          | 3-1419129-1 |        |                  |              |             |            |            | 5VDC            | Wash tight |
| OJ-SH-105LM,000          | 1461404-1   |        |                  | 12VDC        | 450mW       | EX-version |            | Flux proof      |            |
| OJ-SH-112LM,000          | 1461404-6   |        |                  | 5VDC         |             | standard   |            |                 |            |
| OJE-SH-112DM,00E0W       | 2071369-1   | 12VDC  |                  | 200mW        |             |            |            | WG version      | Wash tight |
| OJE-SH-105DM,000         | 1461400-1   | 24VDC  |                  |              |             |            |            |                 |            |
| OJE-SS-112DM,000         | 4-1419128-2 | 12VDC  |                  |              |             |            |            |                 | Wash tight |
| OJE-SH-124DM,000         | 1461400-5   | 24VDC  |                  |              | Flux proof  |            |            |                 |            |
| OJ-SH-112DM,000          | 1461406-4   | 12VDC  |                  |              |             | Wash tight |            |                 |            |
| OJ-SH-105LMH,000         | 8-1419128-1 | 8A     | AgCdO            | 5VDC         | 200mW       |            |            | WG version      | Flux proof |
| OJ-SH-112LMH,000         | 9-1419128-8 |        | AgSnO            | 12VDC        |             | standard   |            |                 |            |
| OJ-SS-112LMH2            | 1721260-5   |        |                  | AgCdO        |             |            |            | 24VDC           | Flux proof |
| OJ-SS-112LMH2-WG         | 1721874-5   |        | AgCdO            |              |             | 5VDC       |            | Wash tight      |            |
| OJ-SS-124LMH2            | 1721260-6   |        |                  | AgSnO        |             | 12VDC      |            |                 | Flux proof |
| OJE-SH-105LMH,000        | 1461403-3   |        | AgCdO            |              |             | 5VDC       |            | Wash tight      |            |
| OJE-SH-112LMH,000        | 1461403-4   |        |                  | AgSnO        |             | 12VDC      |            |                 | Flux proof |
| OJE-SS-112LMH2           | 1721261-5   |        | 10A              |              |             | AgCdO      |            | 5VDC            |            |
| OJE-SH-105HM,000         | 1461402-4   | AgSnO  |                  | 12VDC        | standard    | Wash tight |            |                 |            |
| OJE-SH-112HM,000         | 1461402-6   | AgCdO  |                  | 24VDC        |             |            |            | WG version      | Flux proof |
| OJE-SS-112HM2,000        | 1721539-5   | AgCdO  |                  | 12VDC        | EX-version  | Wash tight |            |                 |            |
| OJE-SS-112HMF,F000       | 4-1419128-4 | AgSnO  |                  | 24VDC        |             |            |            | EX-version + WG | Flux proof |
| OJE-SS-124HMF,F000       | 6-1419128-6 | AgCdO  |                  | 12V          | 450mW       | WG version |            |                 |            |
| OJ-SS-112HM6-WG,00000    | 2071398-1   | 8A     |                  | AgSnO        |             |            |            | 200mW           | WG version |
| OJ-SS-124HM2,000         | 1721538-7   |        |                  |              | 10A         | AgSnO      |            |                 |            |
| OJE-SH-112HMF,00E0W      | 2071370-1   | 8A     | AgSnO            | 200mW        |             |            |            | WG version      | Wash tight |
| OJ-SS-112LMH2-WEX1,00000 | 2071404-1   |        |                  |              | 10A         | AgSnO      |            |                 |            |
| OJ-SH-112HM2-WG,00000    | 2071505-1   | 10A    | AgSnO            | 200mW        |             |            |            | WG version      | Wash tight |

## te.com

TE Connectivity, TE Connectivity (logo) and Every Connection Counts are trademarks. All other logos, products and/or company names referred to herein might be trademarks of their respective owners.

The information given herein, including drawings, illustrations and schematics which are intended for illustration purposes only, is believed to be reliable. However, TE Connectivity makes no warranties as to its accuracy or completeness and disclaims any liability in connection with its use. TE Connectivity's obligations shall only be as set forth in TE Connectivity's Standard Terms and Conditions of Sale for this product and in no case will TE Connectivity be liable for any incidental, indirect or consequential damages arising out of the sale, resale, use or misuse of the product. Users of TE Connectivity products should make their own evaluation to determine the suitability of each such product for the specific application.

© 2020 TE Connectivity Ltd. family of companies All Rights Reserved.

11/20 Original