

**Miniature PCB Relay OJ/OJE**

- 3 to 10A rating
- Small size
- 4000V<sub>rms</sub> coil to contact dielectric strength (OJ type)
- Sensitive coil optional



F0277-C

Typical applications  
Appliances, HVAC, industrial control



**Approvals**

VDE 40007630, TUV R 50139166, UL E82292, CQC03001007764  
Technical data of approved types on request

**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              | Ag, AgSnO, AgCdO                   |                          |
| Min. recommended contact load | 100mA, 5VDC                        |                          |
| Frequency of operation        | 360 ops./h                         |                          |
| Operate time max.             | OJ/OJE-L: 15ms<br>OJ/OJE-D/H: 10ms |                          |
| Release time max.             | 4ms                                |                          |
| Electrical endurance          |                                    |                          |
| LM                            | 3A, 250VAC, res., -30°C to +95°C   | 100x10 <sup>3</sup> ops. |
| DM                            | 5A, 250VAC, res., -30°C to +85°C   | 60x10 <sup>3</sup> ops.  |
| LMH(2)                        | 8A, 250VAC, res., -30°C to +70°C   | 100x10 <sup>3</sup> ops. |
| LMH2                          | 8A, 250VAC, res., -30°C to +85°C   | 30x10 <sup>3</sup> ops.  |
| HM                            | 10A, 250VAC, res., -30°C to +70°C  | 100x10 <sup>3</sup> ops. |
| HM2                           | 10A, 250VAC, res., -30°C to +85°C  | 10x10 <sup>3</sup> ops.  |
| Contact ratings               |                                    |                          |
| LM                            | 3A, 250VAC                         |                          |
| DM                            | 5A 250VAC                          |                          |
| LMH(2)                        | 8A 250VAC                          |                          |
| HM(2)                         | 10A 250VAC                         |                          |
| 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 E, F |

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

| Coil code | Rated voltage VDC | Operate voltage VDC | Release voltage VDC | Coil resistance Ω±10% | Rated coil power mW |
|-----------|-------------------|---------------------|---------------------|-----------------------|---------------------|
| 003       | 3                 | 2.25                | 0.15                | 45                    | 200                 |
| 005       | 5                 | 3.75                | 0.25                | 125                   | 200                 |
| 006       | 6                 | 4.5                 | 0.3                 | 180                   | 200                 |
| 009       | 9                 | 6.75                | 0.45                | 405                   | 200                 |
| 012       | 12                | 9                   | 0.6                 | 720                   | 200                 |
| 024       | 24                | 18                  | 1.2                 | 2880                  | 200                 |
| 048       | 48                | 36                  | 2.4                 | 11520                 | 200                 |

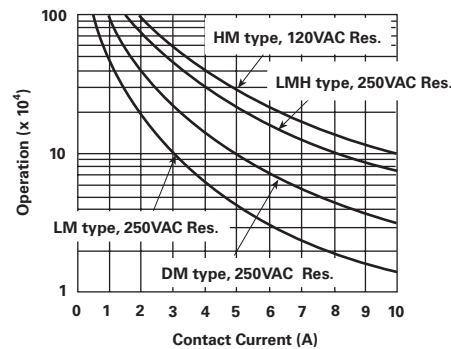
All figures are given for coil without pre-energization, at ambient temperature +23°C

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

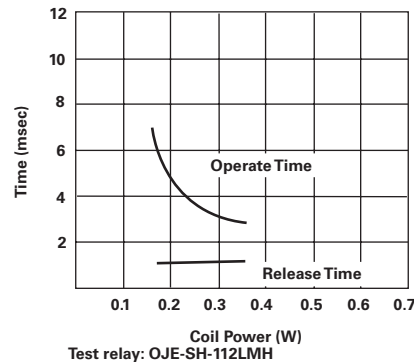
| Coil code | Rated voltage VDC | Operate voltage VDC | Release voltage VDC | Coil resistance Ω±10% | Rated coil power mW |
|-----------|-------------------|---------------------|---------------------|-----------------------|---------------------|
| 003       | 3                 | 2.1                 | 0.15                | 20                    | 450                 |
| 005       | 5                 | 3.5                 | 0.25                | 55.6                  | 450                 |
| 006       | 6                 | 4.2                 | 0.3                 | 80                    | 450                 |
| 009       | 9                 | 6.3                 | 0.45                | 180                   | 450                 |
| 012       | 12                | 8.4                 | 0.6                 | 320                   | 450                 |
| 024       | 24                | 16.8                | 1.2                 | 1280                  | 450                 |
| 048       | 48                | 33.6                | 2.4                 | 5120                  | 450                 |

All figures are given for coil without pre-energization, at ambient temperature +23°C

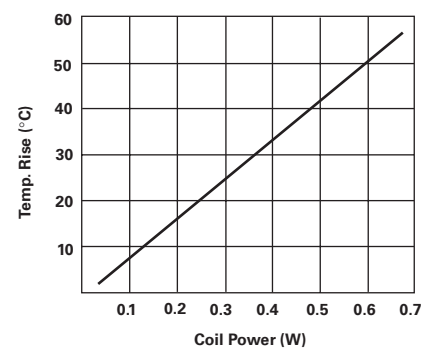
**Electrical endurance**



**Operate time**



**Coil temperature rise**



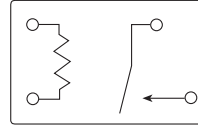
**Miniature PCB Relay OJ/OJE (Continued)**

| Insulation Data  |  |
|--|--|
| Initial dielectric strength<br>between open contacts<br>between contact and coil | 750V <sub>rms</sub><br>OJ: 4000V <sub>rms</sub><br>OJE: 3000V <sub>rms</sub> |
| Clearance/creepage<br>between contact and coil<br>between contact and coil       | OJ: > 7.7mm / 9.4mm<br>OJE: > 3.2mm / 3.6mm                                  |
| Tracking index of relay base   | PTI 250  |

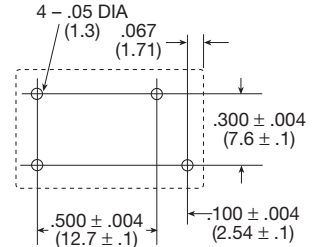
**Other Data**  
Material compliance: EU RoHS/ELV, China RoHS, REACH, Halogen content refer to the Product Compliance Support Center at [www.te.com/customersupport/rohssupportcenter](http://www.te.com/customersupport/rohssupportcenter)

|                                      |   |
|--------------------------------------|---|
| Ambient temperature                  |   |
| DM:                                  | -30°C to +85°C                          |
| HM:                                  | -30°C to +70°C                          |
| HM2:                                 | -30°C to +85°C                          |
| LM:                                  | -30°C to +90°C                          |
| LMH:                                 | -30°C to +70°C                          |
| LMH2:                                | -30°C to +85°C                          |
| Category of environmental protection |   |
| IEC 61810                            | RTII - flux proof<br>RTIII - wash tight |
| Shock resistance (functional)        | 10g                                     |
| Shock resistance (destructive)       | 100g                                    |
| Weight                               | 9g                                      |
| Resistance to soldering heat THT     |   |
| IEC 60068-2-20                       | RTII: 270°C/10s<br>RTIII: 260°C/5s      |
| Packaging unit                       | tray/100, carton box/1000               |

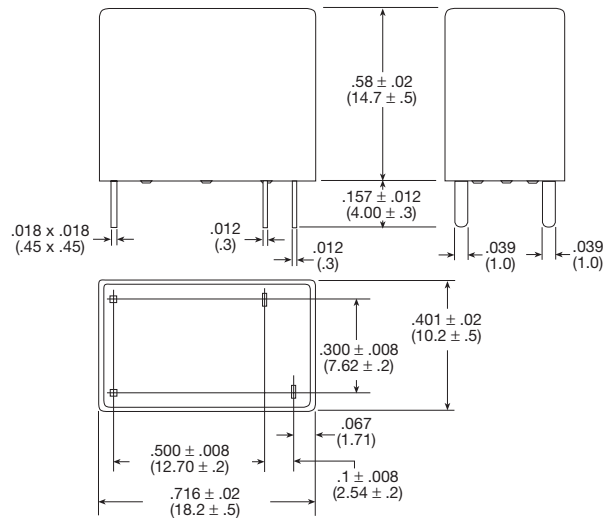
**Terminal assignment**  
Bottom view on solder pins



**PCB layout**  
Bottom view on solder pins



**Dimensions**



| Product code structure               | Typical product code  |  |  |  |  |  |  | OJ | -SH | -1 | 12 | LMH | F | -WG | ,000 |  |
|--------------------------------------|---|--|--|--|--|--|--|----|-----|----|----|-----|---|-----|------|--|
| <b>Type</b>                          |   |  |  |  |  |  |  |    |     |    |    |     |   |     |      |  |
| <b>OJ</b>                            | Miniature PCB Relay OJ, 4kV dielectric between coil and contacts  |  |  |  |  |  |  |    |     |    |    |     |   |     |      |  |
| <b>OJE</b>                           | Miniature PCB Relay OJE, 3kV dielectric between coil and contacts |  |  |  |  |  |  |    |     |    |    |     |   |     |      |  |
| <b>Category of protection</b>        |   |  |  |  |  |  |  |    |     |    |    |     |   |     |      |  |
| <b>SS</b>                            | Flux proof  |  |  |  |  |  |  |    |     |    |    |     |   |     |      |  |
| <b>SH</b>                            | Wash tight  |  |  |  |  |  |  |    |     |    |    |     |   |     |      |  |
| <b>Number of poles</b>               |   |  |  |  |  |  |  |    |     |    |    |     |   |     |      |  |
| <b>1</b>                             | 1 pole  |  |  |  |  |  |  |    |     |    |    |     |   |     |      |  |
| <b>Coil voltage</b>                  | Coil code: please refer to coil versions table (e.g. 12 = 12VDC)  |  |  |  |  |  |  |    |     |    |    |     |   |     |      |  |
| <b>Contact rating and coil power</b> |   |  |  |  |  |  |  |    |     |    |    |     |   |     |      |  |
| <b>DM</b>                            | 450 mWcoil power<br>5A type, coil power 450mW                     |  |  | 200mW coil power   |  |  |  |    |     |    |    |     |   |     |      |  |
| <b>TM</b>                            | TV-5 type, coil power 450mW                                       |  |  | <b>LM</b> 3A type, coil power 200mW                        |  |  |  |    |     |    |    |     |   |     |      |  |
| <b>HM</b>                            | 10A type, coil power 450mW  |  |  | <b>LMH</b> 8A type, coil power 200mW                       |  |  |  |    |     |    |    |     |   |     |      |  |
| <b>HM2</b>                           | 10A type, coil power 450mW  |  |  | <b>LMH2</b> 8A type, coil power 200mW                      |  |  |  |    |     |    |    |     |   |     |      |  |
| <b>Insulation system designation</b> |   |  |  |  |  |  |  |    |     |    |    |     |   |     |      |  |
| <b>Blank</b>                         | Insulation Class E (standard)                                     |  |  | <b>F</b> Insulation Class F                                |  |  |  |    |     |    |    |     |   |     |      |  |
| <b>Special type</b>                  |   |  |  |  |  |  |  |    |     |    |    |     |   |     |      |  |
| <b>Blank</b>                         | Standard  |  |  | <b>WG</b> For domestic appliances (IEC 60335-1, 4 Edition) |  |  |  |    |     |    |    |     |   |     |      |  |
| <b>Suffix</b>                        |   |  |  |  |  |  |  |    |     |    |    |     |   |     |      |  |
| <b>,000</b>                          | Standard  |  |  |  |  |  |  |    |     |    |    |     |   |     |      |  |

Miniature PCB Relay OJ/OJE (Continued)

| Product code      | Rating | Cont. mat. | Coil  | Coil power | Type     | Insulation | Enclosure   | Part Number |
|-------------------|--------|------------|-------|------------|----------|------------|-------------|-------------|
| OJ-SH-105LM,000   | 3A     | Ag         | 5VDC  | 200mW      | Standard | Class E    | Wash tight  | 1461404-1   |
| OJE-SH-112LM,000  |        |            | 12VDC |            |          |            | 1461401-5   |             |
| OJE-SS-112LM,000  |        |            |       |            |          |            | Flux proof  | 4-1419128-6 |
| OJ-SH-112LM,000   |        |            |       |            |          |            | Wash tight  | 1461404-6   |
| OJ-SS-112LM,000   |        |            |       |            |          |            | Flux proof  | 2-1419129-1 |
| OJ-SH-124LM,000   |        |            |       |            |          |            |             | 3-1419129-1 |
| OJ-SH-124LM,000   |        |            | 24VDC |            |          |            | Wash tight  | 1461404-4   |
| OJE-SH-105DM,000  | 5A     |            | 5VDC  | 450mW      |          |            |             | 1461400-1   |
| OJE-SS-105DM,000  |        |            |       |            |          |            | 2-1419128-8 |             |
| OJE-SH-112DM,000  |        |            | 12VDC |            |          |            | Wash tight  | 1461400-4   |
| OJE-SS-112DM,000  |        |            |       |            |          |            | Flux proof  | 4-1419128-2 |
| OJ-SH-112DM,000   |        |            |       |            |          |            | Wash tight  | 1461406-4   |
| OJ-SS-112DM,000   |        |            |       |            |          |            | Flux proof  | 1-1419129-8 |
| OJE-SH-124DM,000  |        |            | 24VDC |            |          |            | Wash tight  | 1461400-5   |
| OJE-SS-124DM,000  |        |            |       |            |          |            | Flux proof  | 6-1419128-2 |
| OJ-SS-124DM,000   |        |            |       |            |          |            |             | 2-1419129-9 |
| OJE-SH-105LMH,000 | 8A     | AgCdO      | 5VDC  | 200mW      |          |            | Wash tight  | 1461403-3   |
| OJE-SH-105LMH-WG  |        |            |       |            | WG type  |            | 1721875-2   |             |
| OJE-SS-105LMH,000 |        |            |       |            | Standard |            | Flux proof  | 1461034-2   |
| OJ-SH-105LMH,000  |        |            |       |            |          |            | Wash tight  | 8-1419128-1 |
| OJ-SH-106LMH,000  |        |            | 6VDC  |            |          |            |             | 1461247-1   |
| OJE-SH-109LMH,000 |        |            | 9VDC  |            |          |            |             | 1461403-2   |
| OJE-SS-109LMH,000 |        |            |       |            |          |            | Flux proof  | 5-1419144-3 |
| OJ-SH-109LMH,000  |        |            |       |            |          |            | Wash tight  | 1461247-2   |
| OJ-SS-109LMH2-WG  |        | AgSnO      |       |            | WG type  |            | Flux proof  | 1721874-4   |
| OJ-SS-109LMHF,000 |        | AgCdO      |       |            | Standard | Class F    |             | 1721083-5   |
| OJE-SH-112LMH,000 |        |            | 12VDC |            |          | Class E    | Wash tight  | 1461403-4   |
| OJE-SH-112LMH-WG  |        |            |       |            | WG type  |            |             | 1721875-5   |
| OJE-SS-112LMH,000 |        |            |       |            | Standard |            | Flux proof  | 5-1419128-0 |
| OJE-SS-112LMH2    |        | AgSnO      |       |            |          |            |             | 1721261-5   |
| OJ-SH-112LMH,000  |        | AgCdO      |       |            |          |            | Wash tight  | 9-1419128-8 |
| OJ-SH-112LMH2     |        | AgSnO      |       |            |          |            |             | 1-1721260-1 |
| OJ-SS-112LMH,000  |        | AgCdO      |       |            |          |            | Flux proof  | 2-1419129-5 |
| OJ-SS-112LMH2     |        | AgSnO      |       |            |          |            |             | 1721260-5   |
| OJ-SS-112LMHF,000 |        | AgCdO      |       |            |          | Class F    |             | 1721083-1   |
| OJE-SH-124LMH,000 |        |            | 24VDC |            |          | Class E    | Wash tight  | 1461403-5   |
| OJE-SH-124LMH-WG  |        |            |       |            | WG type  |            |             | 1721875-6   |
| OJE-SS-124LMH,000 |        |            |       |            | Standard |            | Flux proof  | 7-1419128-1 |
| OJ-SH-124LMH,000  |        |            |       |            |          |            | Wash tight  | 1461247-3   |
| OJ-SS-124LMH,000  |        |            |       |            |          |            | Flux proof  | 4-1419144-4 |
| OJ-SS-124LMH2     |        | AgSnO      |       |            |          |            |             | 1721260-6   |
| OJ-SS-124LMH2-WG  |        |            |       |            | WG type  |            |             | 1721874-6   |
| OJ-SS-124LMHF,000 |        | AgCdO      |       |            | Standard | Class F    |             | 1461014-2   |
| OJ-SH-105HM,000   | 10A    | Ag         | 5VDC  | 450mW      |          | Class E    | Wash tight  | 1461405-3   |
| OJE-SH-112HM,000  |        |            | 12VDC |            |          |            | 1461402-6   |             |
| OJE-SS-112HM,000  |        |            |       |            |          |            | Flux proof  | 4-1419128-3 |
| OJE-SS-112HM2,000 |        | AgSnO      |       |            |          |            |             | 1721539-5   |
| OJ-SH-112HM,000   |        | Ag         |       |            |          |            | Wash tight  | 1461405-5   |
| OJ-SS-112HM,000   |        |            |       |            |          |            | Flux proof  | 1419135-3   |
| OJ-SS-112HMF,000  |        |            |       |            |          | Class F    |             | 1461078-5   |
| OJE-SS-124HM,000  |        |            | 24VDC |            |          | Class E    |             | 6-1419128-4 |
| OJ-SS-124HM,000   |        |            |       |            |          |            |             | 1440007-2   |
| OJ-SS-124HM2,000  |        | AgSnO      |       |            |          |            |             | 1721538-7   |



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- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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