

## 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 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

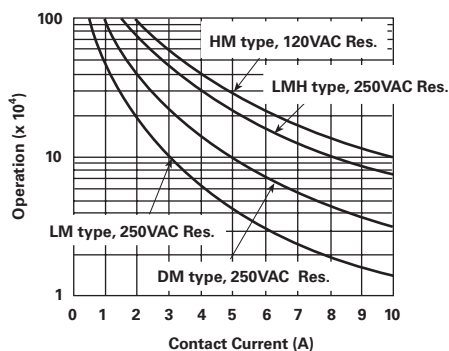
All figures are given for coil without pre-energization, at ambient temperature +23°C

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

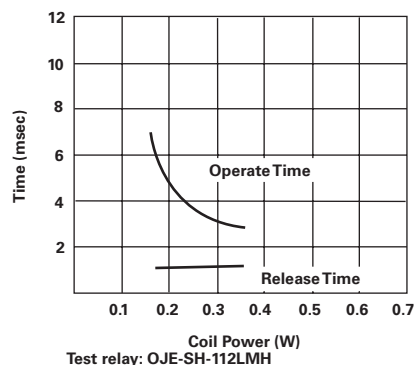
Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ω±10%	Rated coil power mW
003	3	2.1	0.15	20	450
005	5	3.5	0.25	55.6	450
006	6	4.2	0.3	80	450
009	9	6.3	0.45	180	450
012	12	8.4	0.6	320	450
024	24	16.8	1.2	1280	450
048	48	33.6	2.4	5120	450

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

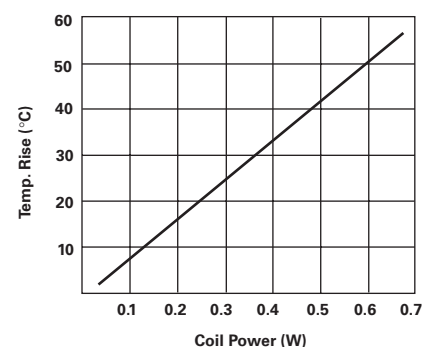
### Electrical endurance



### Operate time



### Coil temperature rise



Miniature PCB Relay OJ/OJE (Continued)

**Insulation Data**

Initial dielectric strength	
between open contacts	750V <sub>rms</sub>
between contact and coil	OJ: 4000V <sub>rms</sub> OJE: 3000V <sub>rms</sub>
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

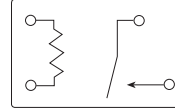
**Other Data**

Material compliance: EU RoHS/ELV, China RoHS, REACH, Halogen content refer to the Product Compliance Support Center at [www.te.com/customer-support/rohssupportcenter](http://www.te.com/customer-support/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 - dust protected 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 RTIII: 260°C/5s
Packaging unit	tray/100, carton box/1000

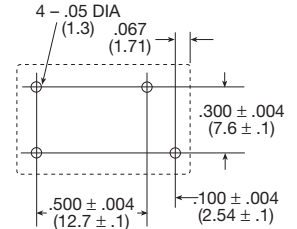
**Terminal assignment**

Bottom view on solder pins

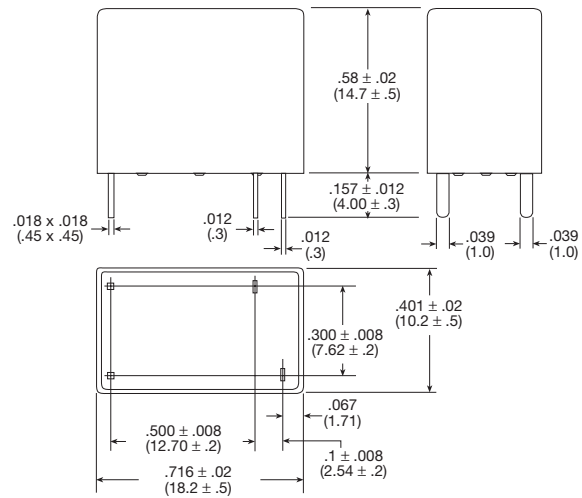


**PCB layout**

Bottom view on solder pins



**Dimensions**



**Product code structure**

Typical product code

**OJ -SH -1 12 LMH F -WG ,000**

**Type**

<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

**Category of protection**

<b>SS</b>	Fux proof
<b>SH</b>	Wash tight

**Number of poles**

<b>1</b>	1 pole
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**Coil voltage**

Coil code: please refer to coil versions table (e.g. 12 = 12VDC)

**Contact rating and coil power**

<b>DM</b>	450 mWcoil power 5A type, coil power 450mW	<b>LM</b>	200mW coil power 3A type, coil power 200mW
<b>TM</b>	TV-5 type, coil power 450mW	<b>LMH</b>	8A type, coil power 200mW
<b>HM</b>	10A type, coil power 450mW	<b>LMH2</b>	8A type, coil power 200mW
<b>HM2</b>	10A type, coil power 450mW		

**Insulation system designation**

<b>Blank</b>	Insulation Class E (standard)	<b>F</b>	Insulation Class F
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**Special type**

<b>Blank</b>	Standard	<b>WG</b>	For domestic appliances (IEC 60335-1, 4 Edition)
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**Suffix**

<b>,000</b>	Standard
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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	5A			450mW			Flux proof	2-1419129-1
OJ-SS-124LM,000								3-1419129-1
OJ-SH-124LM,000			24VDC				Wash tight	1461404-4
OJE-SH-105DM,000			5VDC					1461400-1
OJE-SS-105DM,000			12VDC				Flux proof	2-1419128-8
OJE-SH-112DM,000							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	12VDC		Standard	Class F		1721083-5
OJE-SH-112LMH,000						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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## TE Connectivity:

[OJ-SH-124LM,000](#) [OJE-SH-105DM,095](#) [OJE-SH-124DM,000](#) [OJ-SH-112DM,000](#) [OJ-SH-112LM,000](#) [OJ-SH-105HM,095](#) [OJE-SH-112DM,095](#) [OJ-SH-105HM,000](#) [OJ-SS-109DM,000](#) [OJE-SH-105DM,000](#) [OJE-SH-112HM,000](#) [OJE-SS-112LMH,000](#) [OJE-SH-105LMH,000](#) [OJE-SS-105LMH,000](#) [OJ-SS-124LMHF,000](#) [OJ-SS-112LMH2](#) [OJ-SS-109LMHF,000](#) [OJ-SS-109LMH2-WG](#) [OJE-SH-124LMH-WG](#) [OJ-SS-124LMH2](#) [OJE-SS-112LMH2](#)