Miniature PCB Relay OJ/OJE

- **3 to 10A rating**
- **Small size**
- **4000V_{rms} 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	$100x10^3$ ops.
DM	5A, 250VAC, res, -30°C to +85°C	$60x10^3$ ops.
LMH(2)	8A, 250VAC, res., -30°C to +70°C	$100x10^3$ ops.
LMH2	8A, 250VAC,res., -30°C to +85°C	$30x10^3$ ops.
HM	10A, 250VAC, res., -30°C to +70°C	$100x10^3$ ops.
HM2	10A, 250VAC, res., -30°C to +85°C	$10x10^3$ ops.
Contact ratings		
LM	3A, 250VAC	
DM	5A 250VAC	
LMH(2)	8A 250VAC	
HM(2)	10A 250VAC	
Mechanical endurance, DC coil	$10x10^6$ 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

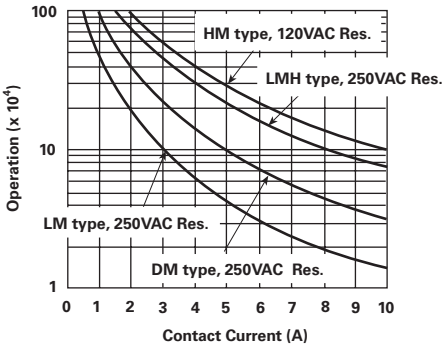
All figures are given for coil without pre-energization, at ambient temperature +23°C

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

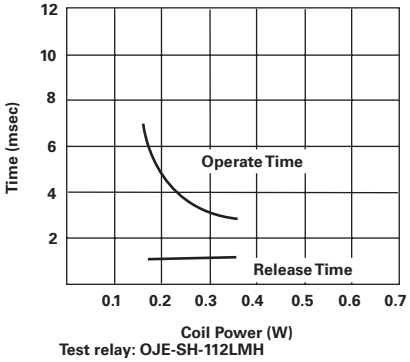
Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ω±10%	Rated coil power mW
003	3	2.1	0.15	20	450
005	5	3.5	0.25	55.6	450
006	6	4.2	0.3	80	450
009	9	6.3	0.45	180	450
012	12	8.4	0.6	320	450
024	24	16.8	1.2	1280	450
048	48	33.6	2.4	5120	450

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

Electrical endurance

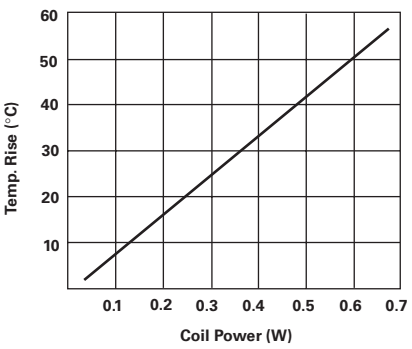


Operate time



Test relay: OJE-SH-112LMH

Coil temperature rise



01-2014, Rev. 0114
www.te.com
© 2014 Tyco Electronics Corporation,
a TE Connectivity Ltd. company

Datasheets and product specification according to IEC 61810-1 and to be used only together with the 'Definitions' section.

Datasheets and product data is subject to the terms of the disclaimer and all chapters of the 'Definitions' section, available at http://relays.te.com/definitions

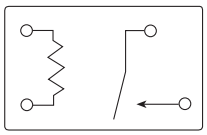
Datasheets, product data, 'Definitions' section, application notes and all specifications are subject to change.

Miniature PCB Relay OJ/OJE (Continued)

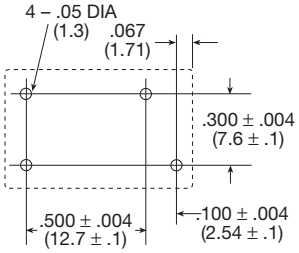
Insulation Data	
Initial dielectric strength	
between open contacts	750V_{rms}
between contact and coil	OJ: 4000V_{rms} OJE: 3000V_{rms}
Clearance/creepage	
between contact and coil	OJ: > 7.7mm / 9.4mm
between contact and coil	OJE: > 3.2mm / 3.6mm
Tracking index of relay base	PTI 250

Other Data	
Material compliance: EU RoHS/ELV, China RoHS, REACH, Halogen content refer to the Product Compliance Support Center at www.te.com/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 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

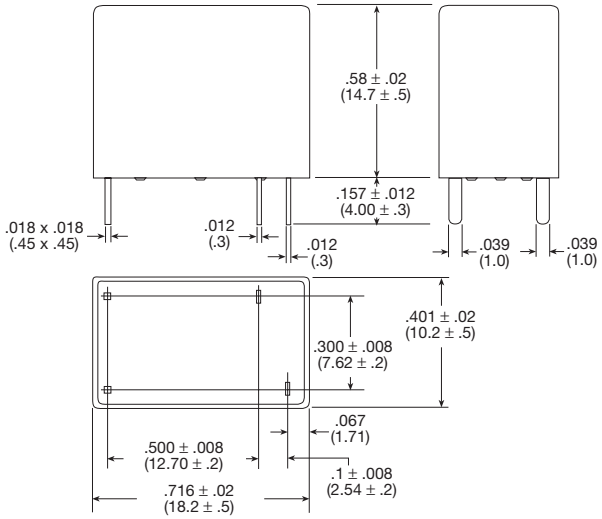
Terminal assignment
Bottom view on solder pins



PCB layout
Bottom view on solder pins



Dimensions



Product code structure

Typical product code: **OJ -SH -1 12 LMH F -WG ,000**

Type
- **OJ** Miniature PCB Relay OJ, 4kV dielectric between coil and contacts
- **OJE** Miniature PCB Relay OJE, 3kV dielectric between coil and contacts

Category of protection
- **SS** Fux proof
- **SH** Wash tight

Number of poles
- **1** 1 pole

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

Contact rating and coil power

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

Insulation system designation
- **Blank** Insulation Class E (standard)
- **F** Insulation Class F

Special type
- **Blank** Standard
- **WG** For domestic appliances (IEC 60335-1, 4 Edition)

Suffix
- **,000** Standard

01-2014, Rev. 0114
www.te.com
© 2014 Tyco Electronics Corporation,
a TE Connectivity Ltd. company

Datasheets and product specification according to IEC 61810-1 and to be used only together with the 'Definitions' section.

Datasheets and product data is subject to the terms of the disclaimer and all chapters of the 'Definitions' section, available at http://relays.te.com/definitions

Datasheets, product data, 'Definitions' section, application notes and all specifications are subject to change.

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-SS-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							Flux proof	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

01-2014, Rev. 0114
www.te.com
© 2014 Tyco Electronics Corporation,
a TE Connectivity Ltd. company

Datasheets and product specification according to IEC 61810-1 and to be used only together with the 'Definitions' section.

Datasheets and product data is subject to the terms of the disclaimer and all chapters of the 'Definitions' section, available at http://relays.te.com/definitions

Datasheets, product data, 'Definitions' section, application notes and all specifications are subject to change.