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

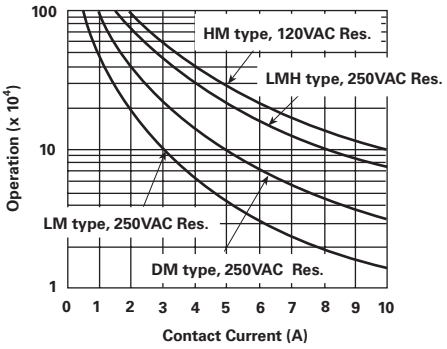
All figures are given for coil without pre-energization, at ambient temperature +23°C

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

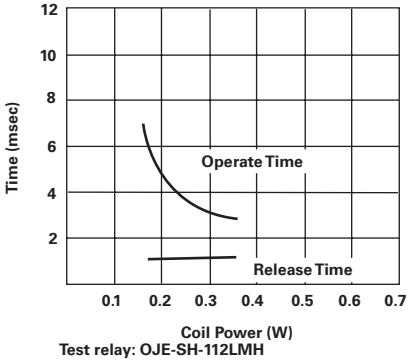
Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ω±10%	Rated coil power mW
003	3	2.1	0.15	20	450
005	5	3.5	0.25	55.6	450
006	6	4.2	0.3	80	450
009	9	6.3	0.45	180	450
012	12	8.4	0.6	320	450
024	24	16.8	1.2	1280	450
048	48	33.6	2.4	5120	450

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

Electrical endurance

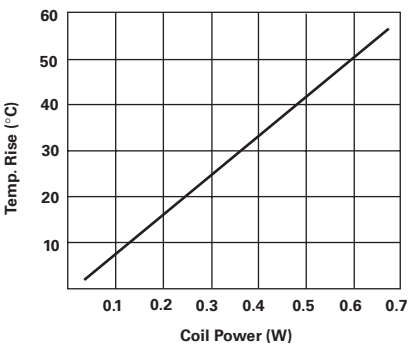


Operate time



Test relay: OJE-SH-112LMH

Coil temperature rise



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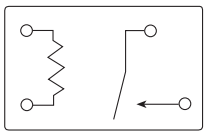
Miniature PCB Relay OJ/OJE (Continued)

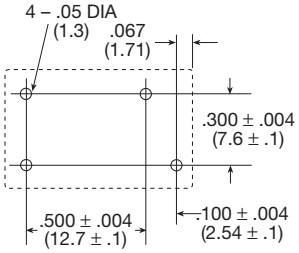
Insulation Data	
Initial dielectric strength	
between open contacts	750V_{rms}
between contact and coil	OJ: 4000V_{rms} OJE: 3000V_{rms}
Clearance/creepage	
between contact and coil	OJ: > 7.7mm / 9.4mm
between contact and coil	OJE: > 3.2mm / 3.6mm
Tracking index of relay base	PTI 250

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

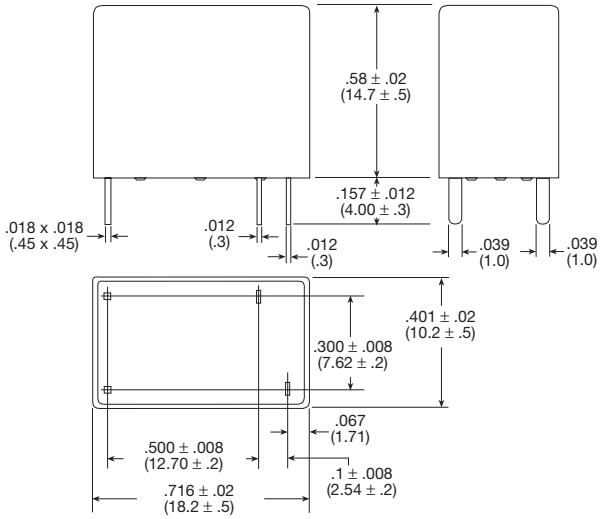
Terminal assignment
Bottom view on solder pins



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

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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

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