

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

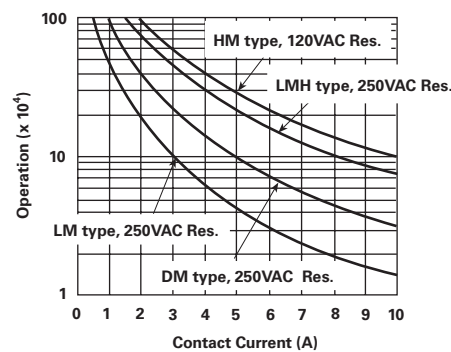
All figures are given for coil without pre-energization, at ambient temperature +23°C

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

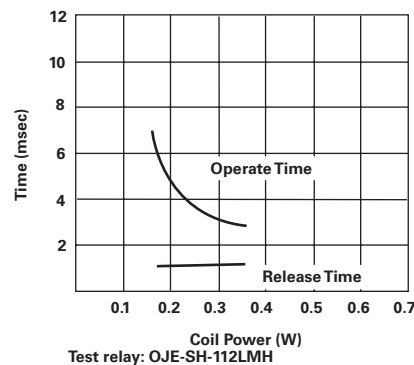
Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ω±10%	Rated coil power mW
003	3	2.1	0.15	20	450
005	5	3.5	0.25	55.6	450
006	6	4.2	0.3	80	450
009	9	6.3	0.45	180	450
012	12	8.4	0.6	320	450
024	24	16.8	1.2	1280	450
048	48	33.6	2.4	5120	450

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

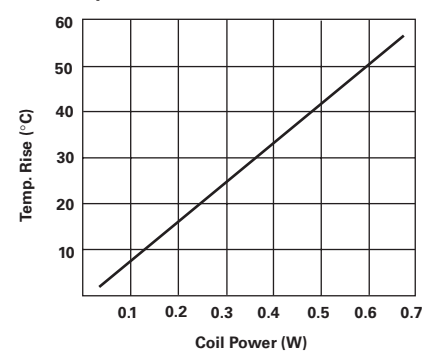
Electrical endurance



Operate time



Coil temperature rise



Miniature PCB Relay OJ/OJE (Continued)

Insulation Data

Initial dielectric strength	750V _{rms}
between open contacts	OJ: 4000V _{rms}
between contact and coil	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

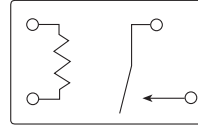
Other Data

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

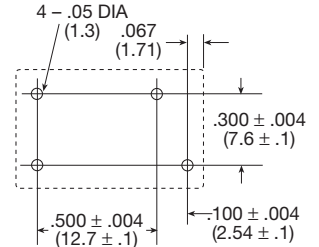
Terminal assignment

Bottom view on solder pins

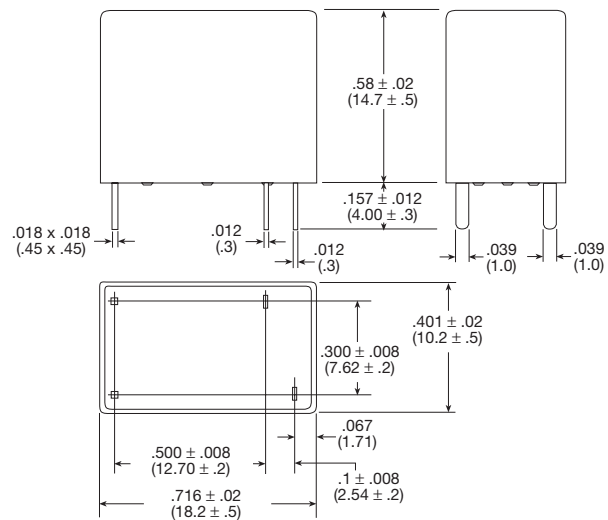


PCB layout

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

DM	450 mWcoil power 5A type, coil power 450mW	LM	200mW coil power 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
-------------	----------

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