

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	AgNi, 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 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

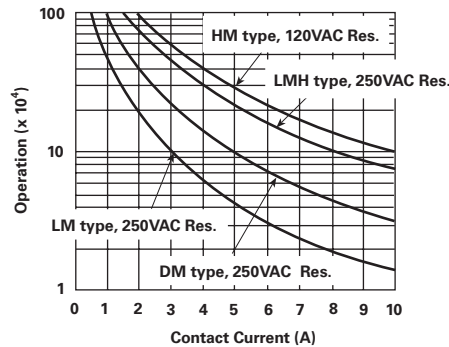
All figures are given for coil without pre-energization, at ambient temperature +23°C

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

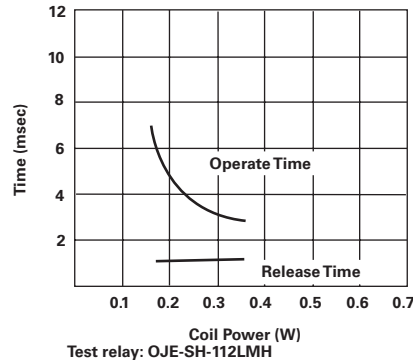
Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ω±10%	Rated coil power mW
003	3	2.1	0.15	20	450
005	5	3.5	0.25	55.6	450
006	6	4.2	0.3	80	450
009	9	6.3	0.45	180	450
012	12	8.4	0.6	320	450
024	24	16.8	1.2	1280	450
048	48	33.6	2.4	5120	450

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

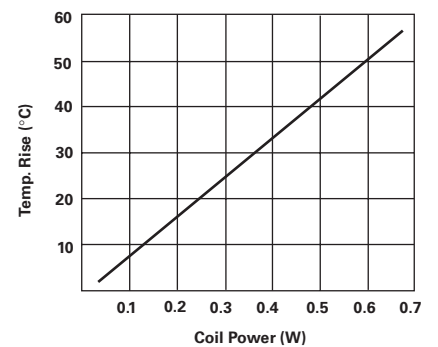
Electrical endurance



Operate time



Coil temperature rise



Miniature PCB Relay OJ/OJE (Continued)

Insulation Data

Initial dielectric strength between open contacts	750V _{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

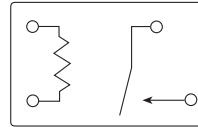
Other Data

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

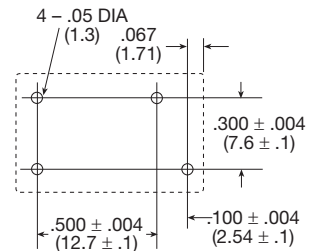
Terminal assignment

Bottom view on solder pins

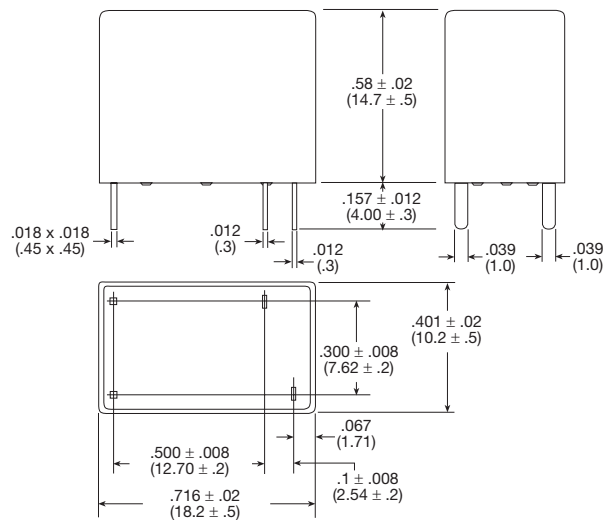


PCB layout

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									
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 F (standard)	F	Insulation Class F						
Special type									
Blank	Standard	WG	For domestic appliances (IEC 60335-1, 4 Edition)						
		EX1	EX-version						
		WEX1	EX-version + WG (IEC 60079-15, 22.4 Enclosed-break device)						
		R	reflow-soldering type						
Suffix									
,000	Standard								

Miniature PCB Relay OJ/OJE (Continued)

Product Code	Part Number	Rating	Contact material	Coil voltage	Coil power	Type	Insulation	Enclosure
OJE-SH-112LM,000	1461401-5	3A	AgNi	12VDC	200mW	standard	Class F	Wash tight
OJ-SS-112LM,000	2-1419129-1	3A	AgNi	12VDC	200mW	standard	Class F	Flux proof
OJ-SS-124LM,000	3-1419129-1	3A	AgNi	24VDC	200mW	standard	Class F	Flux proof
OJ-SH-105LM,000	1461404-1	3A	AgNi	5VDC	200mW	standard	Class F	Wash tight
OJ-SH-112LM,000	1461404-6	3A	AgNi	12VDC	200mW	standard	Class F	Wash tight
OJE-SH-112DM,00E0W	2071369-1	5A	AgNi	12VDC	450mW	EX-version	Class F	Wash tight
OJE-SH-105DM,000	1461400-1	5A	AgNi	5VDC	450mW	standard	Class F	Wash tight
OJE-SS-112DM,000	4-1419128-2	5A	AgNi	12VDC	450mW	standard	Class F	Flux proof
OJE-SH-124DM,000	1461400-5	5A	AgNi	24VDC	450mW	standard	Class F	Wash tight
OJ-SH-112DM,000	1461406-4	5A	AgNi	12VDC	450mW	standard	Class F	Wash tight
OJ-SH-105LMH,000	8-1419128-1	8A	AgCdO	5VDC	200mW	standard	Class F	Wash tight
OJ-SH-112LMH,000	9-1419128-8	8A	AgCdO	12VDC	200mW	standard	Class F	Wash tight
OJ-SS-112LMH2	1721260-5	8A	AgSnO	12VDC	200mW	standard	Class F	Flux proof
OJ-SS-112LMH2-WG	1721874-5	8A	AgSnO	12VDC	200mW	WG version	Class F	Flux proof
OJ-SS-124LMH2	1721260-6	8A	AgSnO	24VDC	200mW	standard	Class F	Flux proof
OJE-SH-105LMH,000	1461403-3	8A	AgCdO	5VDC	200mW	standard	Class F	Wash tight
OJE-SH-112LMH,000	1461403-4	8A	AgCdO	12VDC	200mW	standard	Class F	Wash tight
OJE-SS-112LMH2	1721261-5	8A	AgSnO	12VDC	200mW	standard	Class F	Flux proof
OJE-SH-105HM,000	1461402-4	10A	AgCdO	5VDC	450mW	standard	Class F	Wash tight
OJE-SH-112HM,000	1461402-6	10A	AgCdO	12VDC	450mW	standard	Class F	Wash tight
OJE-SS-112HM2,000	1721539-5	10A	AgSnO	12VDC	450mW	standard	Class F	Flux proof
OJE-SS-112HMF,F000	4-1419128-4	10A	AgCdO	12VDC	450mW	standard	Class F	Flux proof
OJE-SS-124HMF,F000	6-1419128-6	10A	AgCdO	24VDC	450mW	standard	Class F	Flux proof
OJ-SS-112HM6-WG,00000	2071398-1	10A	AgSnO	12VDC	450mW	WG version	Class F	Flux proof
OJ-SS-124HM2,000	1721538-7	10A	AgSnO	24VDC	450mW	standard	Class F	Flux proof
OJE-SH-112HMF,00E0W	2071370-1	10A	AgCdO	12VDC	450mW	EX-version	Class F	Wash tight
OJ-SS-112LMH2-WEX1,00000	2071404-1	8A	AgSnO	12VDC	200mW	EX-version + WG	Class F	Flux proof