

MINIATURE RELAY

1 POLE - 1 to 2 A (For Signal Switching)

MZ Series

■ FEATURES

- Subminiature size
- Standard and high sensitivity types available
- UL, CSA recognized
- FCC rules and regulations part 68
 - Dielectric strength 1,500 V between coil and contacts
- High reliability-bifurcated contacts available
- DIL pitch terminals
- Plastic sealed type
- RoHS compliant.

Please see page 7 for more information



■ PARTNUMBER INFORMATION

[Example] $\frac{MZ}{(a)}$ $\frac{F}{(b)}$ - $\frac{12}{(*)}$ $\frac{W}{(c)}$ $\frac{HG}{(d)}$ - $\frac{K}{(f)}$ - $\frac{U}{(g)}$

(a)	Relay type	MZ	: MZ Series
(b)	Dielectric function	Nil F	: Standard type : High dielectric strength type
(c)	Coil rated voltage	12	: 1.5...48VDC Coil rating table at page 3
(d)	Contact configuration	Nil D W	: 1A single : 2A single (without MZF) : 1A bifurcated
(e)	Coil type	HG HS	: Standard type (without MZ-D) (450-500mW) : High sensitive type (without MZF/MZ-D) (190-270mW)
(f)	Enclosure	Nil K	: Flux free type : Plastic sealed type
(g)	UL, CSA, standard	Nil U	: Non UL, CSA approved : UL, CSA approved

Note: For movable and stationary contact with gold overlay type, add suffix “-OH”.

MZ SERIES

■ SPECIFICATION

Item	Standard type				High Sensitive type	
	Single		Bifurcated		Single	Bifurcated
	MZ - () D	MZ - () HG	MZ - () WHG	MZ - () HS	MZ - () WHS	
Contact Data	Configuration		1 form C (SPDT)			
	Material		Gold-overlay silver nickel	Gold overlay silver-palladium		
	Resistance (initial)		Max. 100 mΩ at 6 VDC, 1A			
	Contact rating (resistive)		2A, 24VDC 1A, 120VAC	1A, 24VDC 0.5A, 120VAC		
	Max. carrying current		2A			
	Max. switching voltage		120VAC, 60VDC			
	Max. switching power		120VA / 48WA	60AV / 24W		
	Max. switching current		2A	1A		
	Min. switching load*		1mA, 1 VDC	0.1mA, 100 mVDC	1mA, 1VDC	0.1mA, 100 mVDC
	Capacitance (at 10 MHz)		Approximately 0.8 pF (between open contacts, adjacent contacts) Approximately 7.5 pF (between coil and contacts)			
Life	Mechanical		Min. 20 x 10 ⁶ operations			
	Electrical		1A, 120VAC: min. 100 x 10 ³ ops. 2A, 24VDC: min. 200 x 10 ³ ops. min.	0.5A, 120VAC: min. 200 x 10 ³ operations 1A, 24VAC: min. 500 x 10 ³ operations		
Coil Data	Rated power		450 mW - 500 mW		190mW - 270 mW	
	Operate power		220 - 250 mW		100 mW - 130 mW	
	Operating temperature range		-30 °C to +55 °C (no frost)		30 °C to +75 °C	
Timing Data	Operate (at nominal voltage)		Max. 6 ms			
	Release (at nominal voltage)		Max. 3 ms			
Insulation	Resistance (initial)		Min. 1,000MΩ at 500VDC			
	Dielectric strength	Open contacts	Standard: 500VAC (50/60Hz) 1min. High Isolation: 1,000VAC (50/60Hz) 1min.			
		Contacts to coil	Standard: 500VAC (50/60Hz) 1min. High Isolation: 1,500VAC (50/60Hz) 1min.			
	Surge strength	Coil to contacts	1,500V / 1 x 40μs standard wave			
Other	Vibration resistance	Misoperation	10 to 55Hz double amplitude 3.28 mm			
		Endurance	10 to 55Hz double amplitude 3.28 mm			
	Shock	Misoperation	Min. 100m/s ² (11 ± 1ms)			
		Endurance	Min. 1,000m/s ² (6 ± 1ms)			
	Weight	Approximately 3.5 g				

* Minimum switching loads mentioned above are reference values. Please perform the confirmation test with actual load before production since reference values may vary according to switching frequencies, environmental conditions and expected reliability levels.

MZ SERIES

■ COIL RATING

Standard type

Coil Code	Rated Coil Voltage (VDC)	Coil Resistance +/- 10% (Ohm)	Must Operate Voltage (VDC) *	Must Release-Voltage (VDC) *	Rated Power (mW)
1.5	1.5	5	1.05	0.08	450
3	3	20	2.1	0.15	
4.5	4.5	45	3.15	0.23	
5	5	56	3.5	0.25	
6	6	80	4.2	0.3	
9	9	180	6.3	0.45	
12	12	320	8.4	0.6	
18	18	720	12.6	0.9	
24	24	1,280	16.8	1.2	
48	48	4,600	33.6	2.4	500

High sensitive type

Coil Code	Rated Coil Voltage (VDC)	Coil Resistance +/- 10% (Ohm)	Must Operate Voltage (VDC) *	Must Release-Voltage (VDC) *	Rated Power (mW)
1.5	1.5	12	1.05	0.08	190
3	3	45	2.1	0.15	200
4.5	4.5	100	3.15	0.23	
5	5	120	3.5	0.25	
6	6	180	4.2	0.3	
9	9	400	6.3	0.45	
12	12	700	8.4	0.6	
15	15	1,100	10.5	0.75	
18	18	1,600	12.6	0.9	
24	24	2,800	16.8	1.2	
48	48	8,500	33.6	2.4	270

Note: All values in the table are valid for 20°C and zero contact current.

* Specified operate values are valid for pulse wave voltage.

■ SAFETY STANDARDS

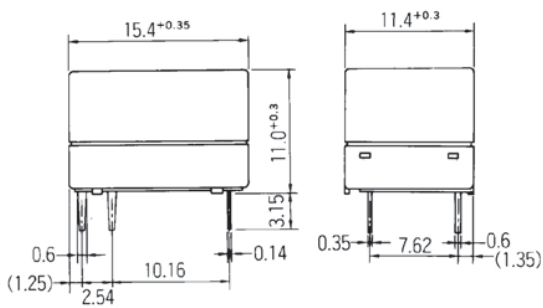
Type	Compliance	Contact rating
UL	UL 508, UL 60950-1	Flammability: UL 94-V0 (plastics)
	E 45026	[1A] 0.5A, 120VAC (resistive)
CSA	C22.2 No. 14 LR 35579	1A, 24VDC (resistive)
		[2A] 1A, 120VAC (resistive) 2A, 30VDC (resistive)

MZ SERIES

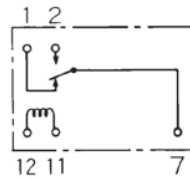
■ DIMENSIONS

- Dimensions

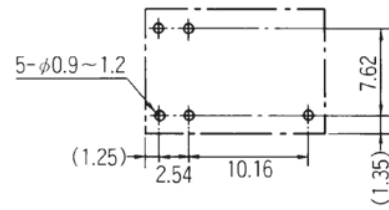
MZ (F) type (Flux free type)



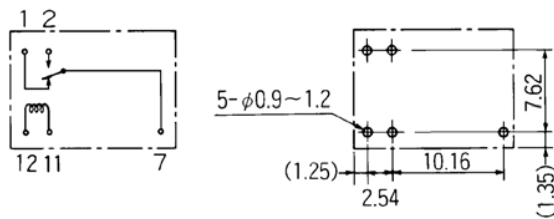
- Schematics (BOTTOM VIEW)



- PC board mounting hole layout (BOTTOM VIEW)



MZ (F)-K type (Plastic sealed type)



Unit: mm