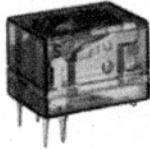


Signal Printed Circuit Board Relays



2 Amp SPDT
L — 0.606",
W — 0.449",
H — 0.433"

MZ RELAY



CONTACT DATA

Arrangement — 1 Form C
Material — Gold overlay silver-palladium alloy
Resistance — 100 milliohms maximum (initial value)
Ratings — 50μ amps to 1 amp at 30V DC or 120V AC, resistive
2A maximum carrying current
Life Expectancy — Mechanical: 20 million operations
Electrical: 500,000 operations minimum at 1 amp 24V DC resistive load
200,000 operations minimum at 0.5 amps 120V AC resistive load

COIL DATA

Voltages — 1.5 to 24 volts DC
Power (at 20°C) —
Standard type: Operate—0.22 watt, Nominal—0.45 watt,
Maximum—1 watt
High sensitive type: Operate—0.1 watt, Nominal—0.2 watt,
Maximum—1 watt
Operate (at 20°C) — 70% of nominal voltage
Duty — Continuous

GENERAL DATA

Insulation Resistance — 100 megohms minimum at 500V DC
Dielectric Strength — 500V AC (50/60 Hz), between all insulated elements
Temperature Range — Standard type: -40°C to +55°C
(at nominal voltage) High sensitive type: -30°C to +75°C
Time Values — Operate <3 ms standard, <6 ms sensitive;
release <1 ms
Mounting — For direct printed circuit mounting on grid spacing of 2.54 mm
(0.1 in.) up to board thickness of 2.5 mm (0.98 in.)
Approximate Weight — 3.5 gr. (0.12 oz.)
Enclosure — Standard — polycarbonate
Washable or sealed — PBT

Standard Coil and Contact Combination (20°C)

Nominal Voltage	Operate Voltage	Maximum Continuous Voltage	Coil Resistance ±10%, Ohms	Ordering Code
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Standard Types — 1A

1.5	1.05	2.0	5	MZ-1.5HG-U
3	2.1	4.1	20	MZ-3HG-U
5	3.5	6.8	56	MZ-5HG-U
6	4.2	8.1	80	MZ-6HG-U
9	6.3	12.2	180	MZ-9HG-U
12	8.4	16.2	320	MZ-12HG-U
24	16.8	32.4	1280	MZ-24HG-U

High Sensitive Types — 1A

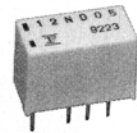
1.5	1.05	3.0	12	MZ-1.5HS-U
3	2.1	6.0	45	MZ-3HS-U
5	3.5	10.0	120	MZ-5HS-U
6	4.2	12.0	180	MZ-6HS-U
9	6.3	18.0	400	MZ-9HS-U
12	8.4	24.0	700	MZ-12HS-U
24	16.8	48.0	2800	MZ-24HS-U

Standard Types — 2A

3	2.1	4.1	28	MZD-3-U
5	3.5	6.8	56	MZD-5-U
6	4.2	8.1	80	MZD-6-U
9	6.3	12.2	180	MZD-9-U
12	8.4	16.2	320	MZD-12-U
24	16.8	32.4	720	MZD-24-U

FBR-12 RELAY

L - 7.2 mm
W - 14.6 mm
H - 9.7 mm



CONTACT DATA

Arrangement - 2 form C (DPDT)
Material - Standard: gold-overlay silver-nickel
P-Type: gold-overlay silver-palladium
Type - Bifucated
Resistance (initial)-Maximum 100mΩ (at 0.1 A 6VDC)
Ratings (resistive) - 0.5 A 125 VAC or 1 A 30VDC
Max. Carrying Current: 2 A (at 20°C)
Max. Switching Power: 62.5 VA or 60W
Max. Switching Voltage: 250 VAC or 220 VDC
Max. Switching Current: 2 A
Min. Switching Load: 0.01mA 10 VDC (reference)
Life Expectancy - Mechanical: 1 x 10⁸ ops. min.
Electrical: DC 2x10⁵ ops. min. (standard type)
DC 5x10⁵ ops. min. (P-type), AC 1x10⁵ ops. min. (standard type), AC 200x10³ ops. min. (P-type)

COIL DATA

Voltage (at 20°C) - 3 to 24 VDC
Power (at 20°C) - W: 0.23 W, N:0.14W, H: 0.05W
Operate Power (at 20°C) -W: 0.13 W, N: 0.08W, H: 0.04W

GENERAL DATA

Insulation Resistance - Min. 1,000 MΩ (at 500 VDC)
Dielectric Strength - 1,000 VAC 1min. (between open contacts)
1,500 VAC 1min. (coil and contacts)
Surge Strength - 2,500 V
Temperature Range - -40°C to +85°C
Time Value - Operate: 4 msec. / Release: 4 msec.
Max. Switching Frequency: mech.: 3Hz, elec.: 0.5 Hz
Weight - Approx. 1.5 g

Standard

Nominal Voltage	Coil Resistance (±10%)	Must Operate Voltage (VDC at 20° C)	Must Release Voltage (VDC at 20° C)	Nominal Power (at 20° C)	Ordering Code
3	64.3	2.25	0.3	Approx. 0.14 W(at nominal voltage)	FBR12ND03
4.5	145	3.38	0.45		FBR12ND04
5	178	3.75	0.5		FBR12ND05
6	257	4.5	0.6		FBR12ND06
9	579	6.75	0.9		FBR12ND09
12	1,028	9.0	1.2		FBR12ND12
24	2,880	18.0	2.4	0.2 W	FBR12ND24

High Dielectric Strength

3	39	2.25	0.3	Approx. 0.23 W(at nominal voltage)	FBR12WD03
4.5	88	3.38	0.45		FBR12WD04
5	108	3.75	0.5		FBR12WD05
6	156	4.5	0.6		FBR12WD06
9	352	6.75	0.9		FBR12WD09
12	626	9.0	1.2		FBR12WD12
24	2,304	18.0	2.4	0.25 W	FBR12WD24

High Sensitive Type

3	180	2.4	0.3	Approx. 0.05 W(at nominal voltage)	FBR12HD03
4.5	405	3.6	0.45		FBR12HD04
5	500	4.5	0.5		FBR12HD05
6	720	4.8	0.6		FBR12HD06
9	1,620	7.2	0.9		FBR12HD09
12	2,880	9.6	1.2		FBR12HD12