AZ8461

MICROMINIATURE POLARIZED RELAY

FEATURES

- Microminiature size: up to 50% less board area than previous generation telecom relays
- High dielectric and surge voltage:
  2.5 KV surge (per Bellcore TA–NWT–001089)
  1.5 KV surge (per FCC Part 68)
  1,000 Vrms, open contacts
- Monostable and bistable (latching) versions available
- Low power consumption: 79 mW pickup
- Stable contact resistance for low level signal switching
- Epoxy sealed for automatic wave soldering and cleaning
- UL file E43203; CSA file 700339
- All plastics meet UL94 V–0, 30 min. oxygen index

CONTACTS

Arrangement	DPDT (2 Form C) Bifurcated crossbar contacts
Ratings	Resistive load: Max. switched power: 60 W or 62.5 VA Max. switched current: 2.0 A Max. switched voltage: 220 VDC or 250 VAC
Rated Load **UL/CSA**	0.5 A at 125 VAC 2.0 A at 30 VDC
Material	Silver palladium (movable) Silver palladium, gold plated (stationary)
Resistance	< 50 milliohms initially at 6 V, 1 A

COIL (Polarized)

Power **At Pickup Voltage (typical)**	79 mW (3–12 VDC) 113 mW (24 VDC)
Max. Continuous Dissipation	0.8 W at 20°C (68°F)
Temperature Rise	At nominal coil voltage 20°C (36°F) (3–12 VDC) 30°C (54°F) (24 VDC)
Temperature	Max. 115°C (239°F)

NOTES

1. All values at 20°C (68°F).
2. Relay may pull in with less than “Must Operate” value.
3. Relay has fixed coil polarity.
4. Specifications subject to change without notice.

GENERAL DATA

Life Expectancy **Mechanical** **Electrical**	Minimum operations 1 x 10^8 at 3Hz 1 x 10^5 at 0.5 A, 125 VAC, Res. 2 x 10^5 at 1.0 A, 30 VDC, Res.
Operate Time (typical)	3 ms at nominal coil voltage
Release Time (typical)	2 ms at nominal coil voltage (with no coil suppression)
Bounce (typical)	At 10 mA contact current 1 ms at operate or release
Capacitance	< 1.5 pF at 10 KHz (open contacts, adjacent contacts) < 2 pF at 10 KHz (contact to coil)
Dielectric Strength (at sea level)	See table
Dropout	Greater than 10% of nominal coil voltage
Insulation Resistance	10^9 ohms min. at 25°C, 500 VDC, 50% RH
Ambient Temperature **Operating** **Storage**	At nominal coil voltage -40°C (-40°F) to 95°C (203°F) (3–12 VDC) -40°C (-40°F) to 90°C (194°F) (24 VDC) -40°C (-40°F) to 85°C (185°F) (48 VDC) -40°C (-40°F) to 115°C (239°F)
Vibration	Operational, 20 g, 10–55 Hz Non-destructive, 30 g, 10–55 Hz
Shock	Operational, 50 g min., 11 ms Non-destructive, 100 g min., 11 ms
Max. Solder Temp. Time	260°C (500°F) for 5 seconds
Max. Solvent Temp.	80°C (176°F)
Max. Immersion Time	30 seconds
Weight	1.5 grams
Enclosure	P.B.T. polyester
Terminals	Tinned copper alloy, P.C.

RELAY ORDERING DATA

STANDARD VERSION				ORDER NUMBER
Nominal Coil VDC	Max. Continuous VDC	Coil Resistance ± 10%	Must Operate VDC	
1.5	3.6	16.1	1.13	AZ8461–1.5
3	7.2	64.3	2.25	AZ8461–3
4.5	10.8	145	3.38	AZ8461–4.5
5	12.0	178	3.75	AZ8461–5
6	14.4	257	4.50	AZ8461–6
9	21.6	579	6.75	AZ8461–9
12	28.8	1028	9.00	AZ8461–12
18	36.0	1620	13.50	AZ8461–18
24	48.0	2880	18.00	AZ8461–24
SINGLE COIL LATCHING VERSION				
Nominal Coil VDC	Max. Continuous VDC	Coil Resistance ± 10%	Set Voltage	ORDER NUMBER
1.5	4.2	22.5	1.13	AZ8461P1–1.5
3	8.5	90	2.25	AZ8461P1–3
4.5	12.7	203	3.38	AZ8461P1–4.5
5	14.1	250	3.75	AZ8461P1–5
6	17.0	360	4.50	AZ8461P–-6
9	25.5	810	6.75	AZ8461P1–9
12	33.9	1440	9.00	AZ8461P1–12
18	41.6	2160	13.50	AZ8461P1–18
24	55.4	3840	18.00	AZ8461P1–24
DUAL COIL LATCHING VERSION				
Nominal Coil VDC	Max. Continuous VDC	Coil Resistance ± 10%	Set/Reset Voltage	ORDER NUMBER
1.5	3.0	11.25	1.13	AZ8461P2–1.5
3	6.0	45	2.25	AZ8461P2–3
4.5	9.0	101	3.38	AZ8461P2–4.5
5	10.0	125	3.75	AZ8461P2–5
6	12.0	180	4.50	AZ8461P2–6
9	18.0	405	6.75	AZ8461P2–9
12	24.0	720	9.00	AZ8461P2–12
18	29.4	1080	13.50	AZ8461P2–18
24	39.2	1920	18.00	AZ8461P2-24

INITIAL DIELECTRIC STRENGTH (minimum)		SURGE		
	VRMS, 1 min.	Peak (V)	Rise Time (µS)	Decay Time* (9µS) (1/2 peak)
Between open contacts	1,000	1,500	10	160
Between contact sets	1,000	1,500	2	160
Between coil and contacts	1,500 (1000[(1)])	2,500 (1500[(1)])	2	10

(1) Dual coil

* Decay time measured from beginning of surge.

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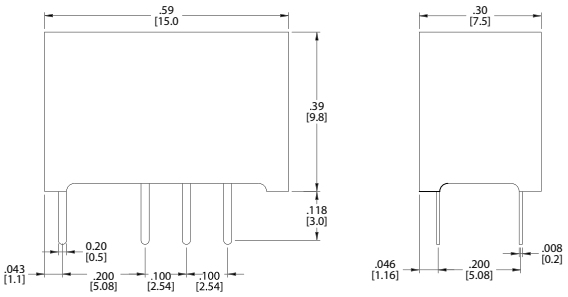
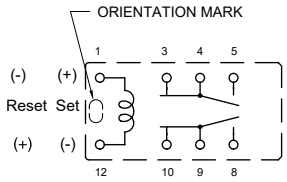
Mechanical Data

Non-latching type

Single coil latching type

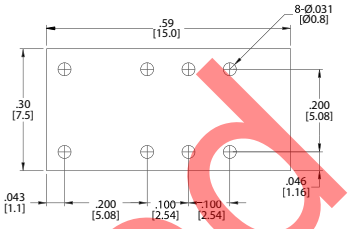




Deenergized or reset condition

Wiring Diagram

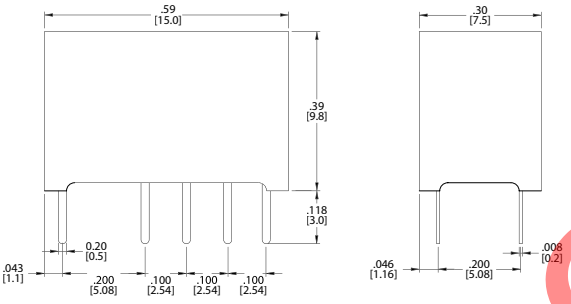
Viewed toward terminals

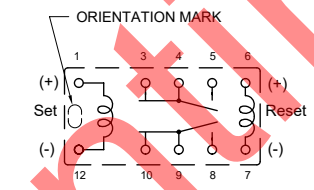


PC Board Layout

Viewed toward terminals

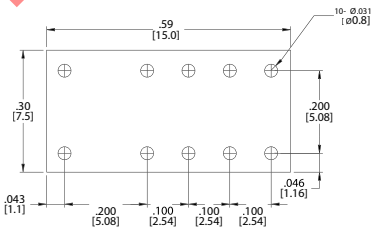
Double coil latching type





Wiring Diagram

Viewed toward terminals



PC Board Layout

Viewed toward terminals

Maximum Switching Capacity