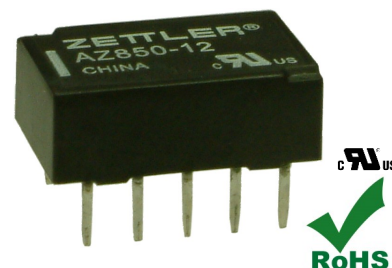


## MICROMINIATURE POLARIZED RELAY

### FEATURES

- Compact size: Height: 0.197" (5 mm); Length: 0.551" (14 mm); Width: 0.354" (9 mm)
- DPDT (2 Form C) contact arrangements
- Monostable non-latching and bistable latching types available
- Single and dual coil latching versions
- High sensitivity coil - 79 mW pickup
- Meets FCC Part 68.302 1500 V lightning surge
- DIP terminal layout, fits 10 pin IC socket
- Epoxy sealed for automatic wave soldering and cleaning
- Gold clad contacts
- RoHS compliant
- UL, CUR file E43203



### CONTACTS

|                                                                                                                     |                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Arrangement</b>                                                                                                  | DPDT (2 Form C)<br>Bifurcated crossbar contacts                                                                                         |
| <b>Ratings (max.)</b>                                                                                               | (resistive load)<br>switched power 30 W or 62.5 VA<br>switched current 1 A<br>carry current 2 A<br>switched voltage 220 VDC* or 250 VAC |
| * Note: If switching voltage is greater than 30 VDC, special precautions must be taken. Please contact the factory. |                                                                                                                                         |
| <b>Rated Loads</b>                                                                                                  | 1 A at 30 VDC, resistive<br>UL, CUR 0.5 A at 125 VAC, resistive                                                                         |
| <b>Contact materials</b>                                                                                            | AgPd - silver palladium, gold clad                                                                                                      |
| <b>Minimum switching</b>                                                                                            | voltage 10 mV<br>current 10 µA                                                                                                          |
| <b>Initial resistance</b>                                                                                           | < 50 mΩ                                                                                                                                 |

### COIL

|                                 |                                                                                                                                       |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| <b>Nominal coil DC voltages</b> | see coil voltage specifications tables                                                                                                |
| <b>Dropout</b>                  | non-latching types > 10% of nominal coil voltage                                                                                      |
| <b>Power at pickup voltage</b>  | (typ.)<br>monostable non-latching 79 - 113 mW<br>bistable single coil latching 56 - 84 mW<br>bistable dual coil latching 113 - 169 mW |
| <b>Temperature Rise</b>         | at nominal coil voltage 18 K (32°F)                                                                                                   |
| <b>Max. temperature</b>         | 105°C (211°F)                                                                                                                         |

### GENERAL DATA

|                        |                                                                                               |
|------------------------|-----------------------------------------------------------------------------------------------|
| <b>Life Expectancy</b> | (minimum operations)                                                                          |
| mechanical             | 1 x 10 <sup>6</sup>                                                                           |
| electrical             | 2 x 10 <sup>5</sup> at 1 A 30 VDC resistive<br>1 x 10 <sup>5</sup> at 0.5 A 125 VAC resistive |

### GENERAL DATA (cont'd)

|                              |                                                                                                                                                            |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Operate Time</b>          | at nominal coil voltage<br>non-latching types 2 ms (typ.)                                                                                                  |
| <b>Release Time</b>          | at nominal coil voltage, w/o coil suppression<br>non-latching types 1 ms (typ.)                                                                            |
| <b>Set Time</b>              | at nominal coil voltage<br>latching types 2 ms (typ.)                                                                                                      |
| <b>Reset Time</b>            | at nominal coil voltage<br>latching types 1 ms (typ.)                                                                                                      |
| <b>Capacitance</b>           | (typ.)<br>coil to contacts 0.9 pF<br>between contact sets 0.2 pF<br>between open contacts 0.4 pF                                                           |
| <b>Dielectric Strength</b>   | (at sea level for 1 min.)<br>coil to contacts 1 kV <sub>RMS</sub><br>between contact sets 1 kV <sub>RMS</sub><br>between open contacts 1 kV <sub>RMS</sub> |
| <b>Surge voltage</b>         | Meets FCC Part 68.302 1500 V lightning surge<br>coil to contacts 1.5 kV<br>between contact sets 2.5 kV<br>between open contacts 1.5 kV                     |
| <b>Insulation Resistance</b> | 1000 MΩ (min.) at 20°C, 500 VDC, 50% RH                                                                                                                    |
| <b>Temperature Range</b>     | (at nominal coil voltage)<br>operating -40°C (-40°F) to 85°C (158°F)                                                                                       |
| <b>Vibration resistance</b>  | operating 3 mm (0.118") DA at 10-55 Hz<br>damage 5 mm (0.197") DA at 10-55 Hz                                                                              |
| <b>Shock</b>                 | operating 50 g                                                                                                                                             |
| <b>Terminals</b>             | Tinned copper alloy, P. C.                                                                                                                                 |
| <b>Soldering</b>             | max. temperature 250°C (500°F)<br>max. time 5 seconds                                                                                                      |
| <b>Cleaning</b>              | max. solvent temp. 80°C (176°F)<br>max. immersion time 30 seconds                                                                                          |
| <b>Weight</b>                | 1.5 grams                                                                                                                                                  |
| <b>Packing unit</b>          | (pcs)<br>plastic tube 25<br>carton box 1000                                                                                                                |

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## COIL VOLTAGE SPECIFICATIONS

### Monostable non-latching

| Nominal Coil VDC | Must Operate VDC | Max. Continuous VDC | Resistance Ohm $\pm 10\%$ |
|------------------|------------------|---------------------|---------------------------|
| 3                | 2.25             | 7.5                 | 64                        |
| 4.5              | 3.4              | 11.25               | 145                       |
| 5                | 3.75             | 12.5                | 178                       |
| 6                | 4.5              | 15.0                | 257                       |
| 9                | 6.75             | 22.5                | 579                       |
| 12               | 9.0              | 30.0                | 1028                      |
| 24               | 18.0             | 48.0                | 2880                      |

### Single coil latching

| Nominal Coil VDC | Must Operate VDC | Max. Continuous VDC | Resistance Ohm $\pm 10\%$ |
|------------------|------------------|---------------------|---------------------------|
| 3                | 2.25             | 8.7                 | 90                        |
| 4.5              | 3.4              | 13.0                | 203                       |
| 5                | 3.75             | 14.5                | 250                       |
| 6                | 4.5              | 17.4                | 360                       |
| 9                | 6.75             | 26.1                | 810                       |
| 12               | 9.0              | 34.8                | 1440                      |
| 24               | 18.0             | 57.6                | 3840                      |

### Dual coil latching

| Nominal Coil VDC | Must Operate VDC | Max. Continuous VDC | Resistance Ohm $\pm 10\%$ |
|------------------|------------------|---------------------|---------------------------|
| 3                | 2.25             | 6.0                 | 45                        |
| 4.5              | 3.4              | 9.0                 | 101                       |
| 5                | 3.75             | 10.0                | 125                       |
| 6                | 4.5              | 12.0                | 180                       |
| 9                | 6.75             | 18.0                | 405                       |
| 12               | 9.0              | 24.0                | 720                       |
| 24               | 18.0             | 36.0                | 1920                      |

## ORDERING DATA

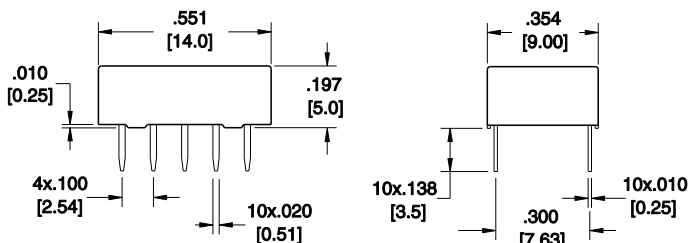
AZ850    -   

**Nominal coil voltage**  
see coil voltage specifications tables

**Latching type**  
nil: monostable non-latching  
P1: bistable single coil latching  
P2: bistable dual coil latching

## MECHANICAL DATA

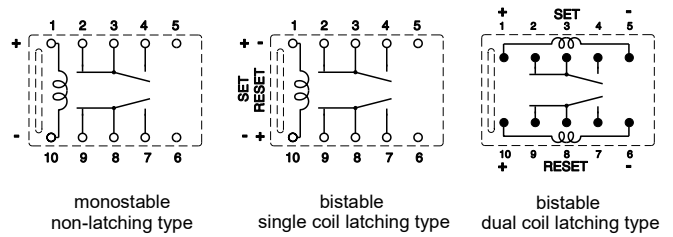
Dimensions in inches with metric equivalents in parentheses



## WIRING DIAGRAMS

Viewed towards terminals, shown in deenergized / reset condition.

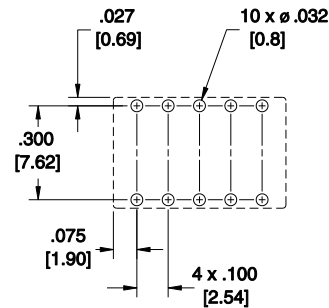
Note: Stripe marking on top of relay indicates position of pin 1



## PC BOARD LAYOUT

Viewed towards terminals.

Dimensions in inches with metric equivalents in parentheses.



## NOTES

- Specifications subject to change without notice.
- All values at 20°C (68°F) unless otherwise stated.
- Relay may pull in with less than "Must Operate" value.
- Coil suppression circuits such as diodes, etc. in parallel to the coil will lengthen the release time.
- Relay has fixed coil polarity
- For complete isolation between the relay's magnetic fields, it is recommended that a .197" (5.0 mm) space be provided between adjacent relays.
- Relay adjustment may be affected if undue pressure is exerted on relay case
- Ultrasonic cleaning is not recommended

## DISCLAIMER

This product specification is to be used in conjunction with the application notes which can be downloaded from [www.ZETTLERelectronics.com/pdfs/relais/ApplicationNotes.pdf](http://www.ZETTLERelectronics.com/pdfs/relais/ApplicationNotes.pdf)

The specification provides an overview of the most significant part features. Any individual applications and operating conditions are not taken into consideration. It is recommended to test the product under application conditions. Responsibility for the application remains with the customer. Proper operation and service life cannot be guaranteed if the part is operated outside the specified limits.

# AZ850

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