

## MINIATURE PC BOARD RELAY

### FEATURES

- Subminiature size
- High sensitivity, 110mW pickup
- Coils to 48VDC
- Hermetically sealed version available
- Epoxy sealed for automatic wave soldering
- Withstands 4kV standard IEEE Lightning Surge
- Withstands 6kV IEEE Lightning Surge (special order)
- Class B insulation (130°C) standard
- Class F insulation (155°C) version available
- UL, CUR file E44211
- VDE approved versions available (Class A Insulation only)

### CONTACTS

|                                     |                                                                                                                                                                        |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Arrangement</b>                  | SPDT (1 Form C)<br>SPST (1 Form A)                                                                                                                                     |
| <b>Ratings</b><br><b>Light Duty</b> | Resistive load:<br>Max. switched power: 100W or 600VA<br>Max. switched current: 3A<br>Max. switched voltage: 150VDC or 300VAC<br><b>UL Rating:</b> See chart on Page 3 |
| <b>Medium Duty</b>                  | Max. switched power: 180W or 1800VA<br>Max. switched current: 6A<br>Max. switched voltage: 150VDC or 300VAC<br><b>UL Rating:</b> See chart on Page 3                   |
| <b>Material</b>                     | Light duty: Silver<br>Medium duty: Silver nickel                                                                                                                       |
| <b>Resistance</b>                   | < 100 milliohms initially                                                                                                                                              |

### COIL

|                                                              |                                                                                                                                  |
|--------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <b>Power</b><br><b>At Pickup Voltage</b><br><b>(typical)</b> | Standard coil: 250mW (48V coil: 341mW)<br>Sensitive coil: 175mW (48V coil: 182mW)                                                |
| <b>Max. Continuous</b><br><b>Dissipation</b>                 | Class B: 2.0W 20°C (68°F) ambient<br>1.6W 40°C (104°F) ambient<br>Class F: 2.5W 20°C (68°F) ambient<br>2.1W 40°C (104°F) ambient |
| <b>Temperature Rise</b>                                      | At nominal coil voltage<br>Standard coil: 38°C (68°F)<br>Sensitive coil: 28°C (50°F)                                             |
| <b>Temperature</b>                                           | Max. 105°C (221°F) Class A<br>Max. 130°C (266°F) Class B<br>Max. 155°C (311°F) Class F                                           |



### GENERAL DATA

|                                                                                                   |                                                                                                                                                                                                |
|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Life Expectancy</b><br><b>Mechanical</b><br><b>Electrical Light Duty</b><br><b>Medium Duty</b> | Minimum operations<br>1 x 10 <sup>7</sup><br>3 x 10 <sup>5</sup> at 3A, 120VAC<br>1.8 x 10 <sup>5</sup> at 6A, 120VAC                                                                          |
| <b>Operate Time (typical)</b>                                                                     | 5ms at nominal coil voltage                                                                                                                                                                    |
| <b>Release Time (typical)</b>                                                                     | 2ms at nominal coil voltage<br>(with no coil suppression)                                                                                                                                      |
| <b>Dielectric Strength</b><br><b>(at sea level for 1 min.)</b>                                    | 750Vrms contact to contact<br>2000Vrms contact to coil except hermetically<br>sealed version which is 1600Vrms                                                                                 |
| <b>Insulation</b><br><b>Resistance</b>                                                            | 1000 megohms min. at 20°C, 500VDC,<br>50% RH                                                                                                                                                   |
| <b>Dropout</b>                                                                                    | Greater than 5% of nominal coil voltage                                                                                                                                                        |
| <b>Ambient Temperature</b><br><b>Operating</b><br><br><b>Storage</b>                              | At nominal coil voltage<br>-55°C (-67°F) to 90°C (194°F) Class B<br>-55°C (-67°F) to 115°C (239°F) Class F<br>-55°C (-67°F) to 130°C (266°F) Class B<br>-55°C (-67°F) to 155°C (311°F) Class F |
| <b>Vibration</b>                                                                                  | 0.062" DA at 10–55 Hz, 10 g at 55–110 Hz                                                                                                                                                       |
| <b>Shock</b>                                                                                      | 10g                                                                                                                                                                                            |
| <b>Enclosure</b>                                                                                  | P.E.T. polyester                                                                                                                                                                               |
| <b>Terminals</b>                                                                                  | Tinned copper alloy, P.C.                                                                                                                                                                      |
| <b>Max. Solder Temp.</b>                                                                          | 270°C (518°F)                                                                                                                                                                                  |
| <b>Max. Solder Time</b>                                                                           | 5 seconds                                                                                                                                                                                      |
| <b>Max. Solvent Temp.</b>                                                                         | 80°C (176°F)                                                                                                                                                                                   |
| <b>Max. Immersion Time</b>                                                                        | 30 seconds                                                                                                                                                                                     |
| <b>Weight</b>                                                                                     | Approx. 11 grams                                                                                                                                                                               |

### NOTES

1. All values at 20°C (68°F).
2. Relay may pull in with less than "Must Operate" value.
3. Other coil resistances and sensitivities available upon request.
4. Unsealed relays should not be dip cleaned.
5. Specifications subject to change without notice.

## RELAY ORDERING DATA

| COIL SPECIFICATIONS               |                     |                       |                  | ORDER NUMBER*              |              |                             |               |
|-----------------------------------|---------------------|-----------------------|------------------|----------------------------|--------------|-----------------------------|---------------|
| STANDARD RELAYS: 1 Form C (SPDT)  |                     |                       |                  | LIGHT DUTY (3 Amp contact) |              | MEDIUM DUTY (6 Amp contact) |               |
| Nominal Coil VDC                  | Max. VDC Continuous | Resistance $\pm 10\%$ | Must Operate VDC | Unsealed                   | Epoxy Sealed | Unsealed                    | Epoxy Sealed  |
| 5                                 | 10.6                | 56                    | 3.75             | AZ8-1C-5D                  | AZ8-1C-5DE   | AZ8-1CH-5D                  | AZ8-1CH-5DE   |
| 6                                 | 12.6                | 80                    | 4.50             | AZ8-1C-6D                  | AZ8-1C-6DE   | AZ8-1CH-6D                  | AZ8-1CH-6DE   |
| 9                                 | 19.0                | 180                   | 6.75             | AZ8-1C-9D                  | AZ8-1C-9DE   | AZ8-1CH-9D                  | AZ8-1CH-9DE   |
| 12                                | 25.0                | 320                   | 9.00             | AZ8-1C-12D                 | AZ8-1C-12DE  | AZ8-1CH-12D                 | AZ8-1CH-12DE  |
| 18                                | 37.8                | 720                   | 13.50            | AZ8-1C-18D                 | AZ8-1C-18DE  | AZ8-1CH-18D                 | AZ8-1CH-18DE  |
| 24                                | 50.0                | 1,280                 | 18.00            | AZ8-1C-24D                 | AZ8-1C-24DE  | AZ8-1CH-24D                 | AZ8-1CH-24DE  |
| 48                                | 87.0                | 3,800                 | 36.00            | AZ8-1C-48D                 | AZ8-1C-48DE  | AZ8-1CH-48D                 | AZ8-1CH-48DE  |
| SENSITIVE RELAYS: 1 Form C (SPDT) |                     |                       |                  | LIGHT DUTY (3 Amp contact) |              | MEDIUM DUTY (6 Amp contact) |               |
| Nominal Coil VDC                  | Max. VDC Continuous | Resistance $\pm 10\%$ | Must Operate VDC | Unsealed                   | Epoxy Sealed | Unsealed                    | Epoxy Sealed  |
| 5                                 | 12.6                | 80                    | 3.75             | AZ8-1C-5DS                 | AZ8-1C-5DSE  | AZ8-1CH-5DS                 | AZ8-1CH-5DSE  |
| 6                                 | 14.8                | 110                   | 4.50             | AZ8-1C-6DS                 | AZ8-1C-6DSE  | AZ8-1CH-6DS                 | AZ8-1CH-6DSE  |
| 9                                 | 22.4                | 250                   | 6.75             | AZ8-1C-9DS                 | AZ8-1C-9DSE  | AZ8-1CH-9DS                 | AZ8-1CH-9DSE  |
| 12                                | 30.0                | 440                   | 9.00             | AZ8-1C-12DS                | AZ8-1C-12DSE | AZ8-1CH-12DS                | AZ8-1CH-12DSE |
| 24                                | 60.0                | 1,780                 | 18.00            | AZ8-1C-24DS                | AZ8-1C-24DSE | AZ8-1CH-24DS                | AZ8-1CH-24DSE |
| 48                                | 120.0               | 7,120                 | 36.00            | AZ8-1C-48DS                | AZ8-1C-48DSE | AZ8-1CH-48DS                | AZ8-1CH-48DSE |

\* Substitute "1A" or "1AH" in place of "1C" or "1CH" to indicate 1 Form A contact. To indicate Class F version, add suffix "F". For Hermetically sealed version, substitute "H" for "E". When suffix "E" is specified for Epoxy Seal, refer to AZ "Relay Technical Notes" on AZ website - Product Resources. Consult factory for other PCB process conditions that may apply.

## RELAY ORDERING DATA - VDE APPROVED VERSIONS

| COIL SPECIFICATIONS                     |                     |                       |                  | ORDER NUMBER   |                    |
|-----------------------------------------|---------------------|-----------------------|------------------|----------------|--------------------|
| STANDARD RELAYS: 1 Form C (SPDT) – VDE  |                     |                       |                  | MEDIUM DUTY    |                    |
| Nominal Coil VDC                        | Max. VDC Continuous | Resistance $\pm 10\%$ | Must Operate VDC | Unsealed 6 Amp | Epoxy Sealed 5 Amp |
| 5                                       | 10.6                | 56                    | 3.75             | AZ8-1CH-5DA    | AZ8-1CH-5DEA       |
| 6                                       | 12.6                | 80                    | 4.50             | AZ8-1CH-6DA    | AZ8-1CH-6DEA       |
| 9                                       | 19.0                | 180                   | 6.75             | AZ8-1CH-9DA    | AZ8-1CH-9DEA       |
| 12                                      | 25.0                | 320                   | 9.00             | AZ8-1CH-12DA   | AZ8-1CH-12DEA      |
| 24                                      | 50.0                | 1,280                 | 18.00            | AZ8-1CH-24DA   | AZ8-1CH-24DEA      |
| 48                                      | 87.0                | 3,800                 | 36.00            | AZ8-1CH-48DA   | AZ8-1CH-48DEA      |
| SENSITIVE RELAYS: 1 Form C (SPDT) – VDE |                     |                       |                  | MEDIUM DUTY    |                    |
| Nominal Coil VDC                        | Max. VDC Continuous | Resistance $\pm 10\%$ | Must Operate VDC | Unsealed 6 Amp | Epoxy Sealed 5 Amp |
| 5                                       | 12.6                | 80                    | 3.75             | AZ8-1CH-5DSA   | AZ8-1CH-5DSEA      |
| 6                                       | 14.8                | 110                   | 4.50             | AZ8-1CH-6DSA   | AZ8-1CH-6DSEA      |
| 9                                       | 22.4                | 250                   | 6.75             | AZ8-1CH-9DSA   | AZ8-1CH-9DSEA      |
| 12                                      | 30.0                | 440                   | 9.00             | AZ8-1CH-12DSA  | AZ8-1CH-12DSEA     |
| 24                                      | 60.0                | 1,780                 | 18.00            | AZ8-1CH-24DSA  | AZ8-1CH-24DSEA     |
| 48                                      | 120.0               | 7,120                 | 36.00            | AZ8-1CH-48DSA  | AZ8-1CH-48DSEA     |

\* Substitute "1AH" in place of "1CH" to indicate 1 Form A contact.

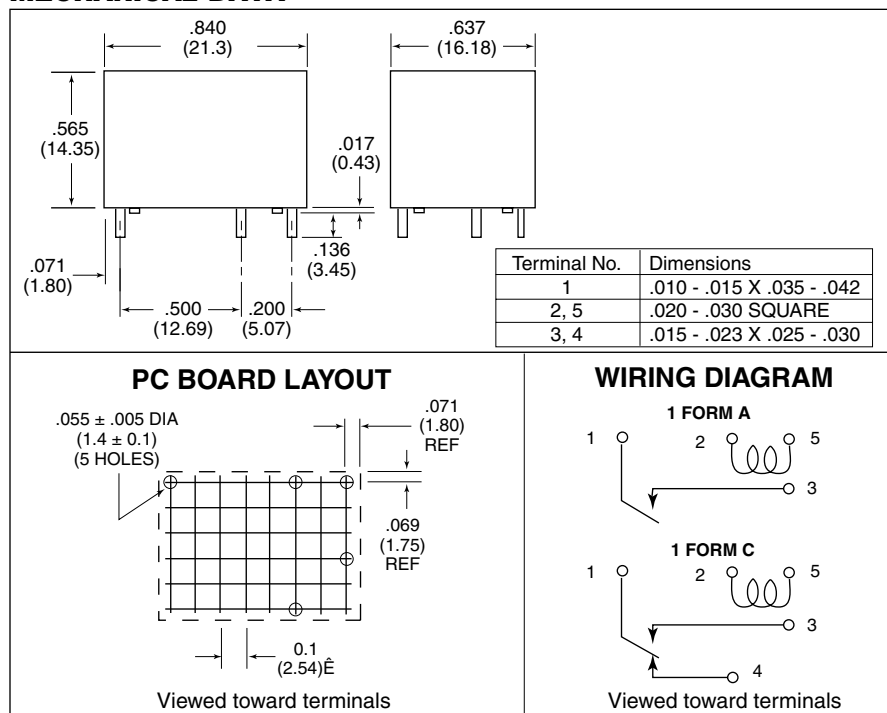
## UL, CUR RATINGS

|                    |                                                                                                                                                                                            |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Light Duty</b>  | 2A at 28VDC or 300VAC<br>1/8 HP at 120 VAC<br>1/10 HP at 120/240 VAC (100,000 cyc)<br>1.2/0.6 A at 120/240 VAC, Pilot Duty 100,000 cyc<br>3.0/1.5 A at 120/240 VAC General Use 100,000 cyc |
| <b>Medium Duty</b> | 6A at 28VDC or 300VAC<br>1/8 HP at 120/240 VAC (100,000 cyc)<br>1.5/0.8 A at 120/240 VAC, Pilot Duty 100,000 cyc<br>3.8/1.9 A at 120/240 VAC General Use 100,000 cyc                       |

## VDE RATINGS

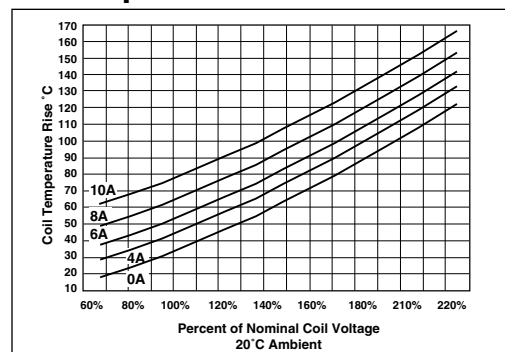
|                 |                                       |
|-----------------|---------------------------------------|
| <b>Sealed</b>   | 5A at 250VAC resistive, 10,000 cycles |
| <b>Unsealed</b> | 6A at 250VAC resistive, 50,000 cycles |

## MECHANICAL DATA

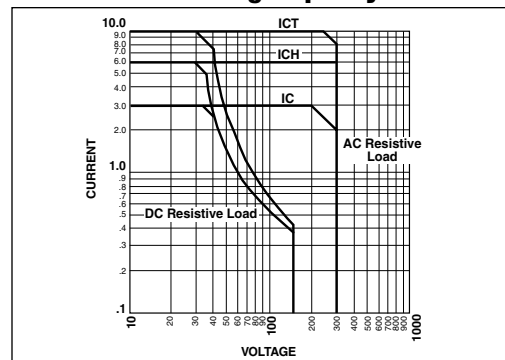


Dimensions in inches with metric equivalents in parentheses. Tolerance: ± .010"

## Coil Temperature Rise



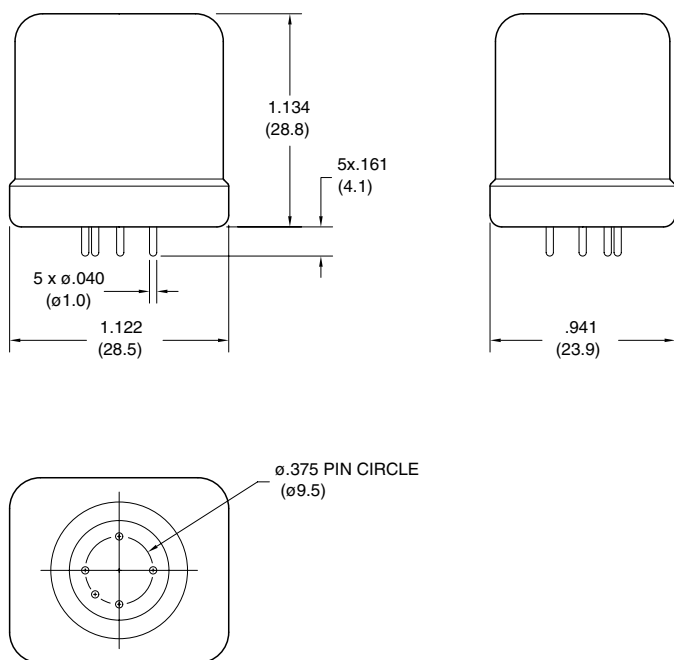
## Maximum Switching Capacity



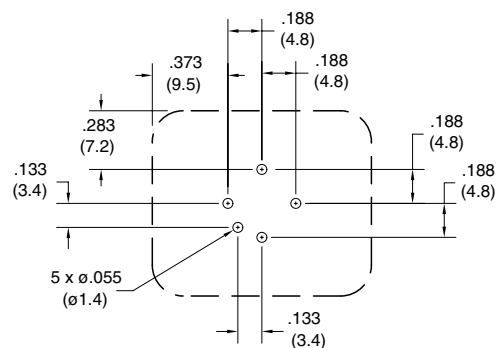
## HERMETICALLY SEALED VERSION



### MECHANICAL DATA

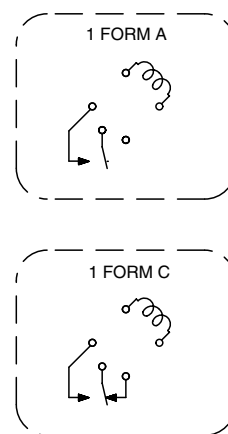


### PC BOARD LAYOUT



VIEWED TOWARD TERMINALS

### WIRING DIAGRAMS



VIEWED TOWARD TERMINALS

**AMERICAN ZETTLER, INC.**

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