

# AZ1641

## MINIATURE POWER RELAY

### FEATURES

- PC Terminals
- SPDT through 4PDT arrangement
- High switching capacity
- AC and DC coils
- UL, CUR file E43203
- TÜV R50359828



### CONTACTS

|             |                                                                          |
|-------------|--------------------------------------------------------------------------|
| Arrangement | SPDT (1 Form C)<br>DPDT (2 Form C)<br>3PDT (3 Form C)<br>4PDT (4 Form C) |
| Ratings     | See chart on page 2                                                      |
| UL, CUR     | See chart on page 2                                                      |
| TUV         | 5A@ 220Vac/28Vdc, 100K 70°C<br>(Standard Duty only)                      |
| Material    | Silver cadmium oxide                                                     |
| Resistance  | < 50 milliohms initially<br>(24V, 1A voltage drop method)                |

### COIL

|                                |                                                                   |
|--------------------------------|-------------------------------------------------------------------|
| Power                          |                                                                   |
| At Pickup Voltage<br>(typical) | DC: 576mW, 6 to 48VDC<br>704mW, 110VDC<br>AC: 0.768VA             |
| Max. Continuous<br>Dissipation | DC: 1.2W (110V : 1.5W) at 20°C (68°F)<br>AC: 1.7VA at 20°C (68°F) |
| Temperature                    | 105°C (221°F)                                                     |

### NOTES

1. All values at 20°C (68°F).
2. Relay may pull in with less than "Must Operate" value.
3. Specifications subject to change without notice.

### GENERAL DATA

|                                                  |                                                                                                      |
|--------------------------------------------------|------------------------------------------------------------------------------------------------------|
| Life Expectancy<br>Mechanical<br>Electrical      | Minimum operations<br>2 x 10 <sup>7</sup> operations<br>1 x 10 <sup>5</sup> operations at rated load |
| Operate Time                                     | 25ms max. at nominal coil voltage                                                                    |
| Release Time                                     | 25ms at nominal coil voltage<br>(without suppression)                                                |
| Dielectric Strength<br>(at sea level for 1 min.) | 1500Vrms between contact and coil<br>1000Vrms contact to contact<br>1000Vrms between contact sets    |
| Insulation<br>Resistance                         | 100 megohms min. at 500VDC,<br>20°C, 50% RH                                                          |
| Dropout                                          | DC: > 10% of nominal coil voltage<br>AC: > 30% of nominal coil voltage                               |
| Ambient Temperature<br>Operating<br>Storage      | -40°C (-40°F) to 70°C (158°F)<br>-55°C (-67°F) to 105°C (221°F)                                      |
| Vibration                                        | 0.062" DA at 10–55 Hz                                                                                |
| Shock                                            | 10 g                                                                                                 |
| Enclosure                                        | Polycarbonate                                                                                        |
| Terminals                                        | PC                                                                                                   |
| Max. Solder Temp.                                | 250°C (482°F)                                                                                        |
| Max. Solder Time                                 | 5 seconds                                                                                            |
| Weight (approx.)                                 | 37 grams                                                                                             |

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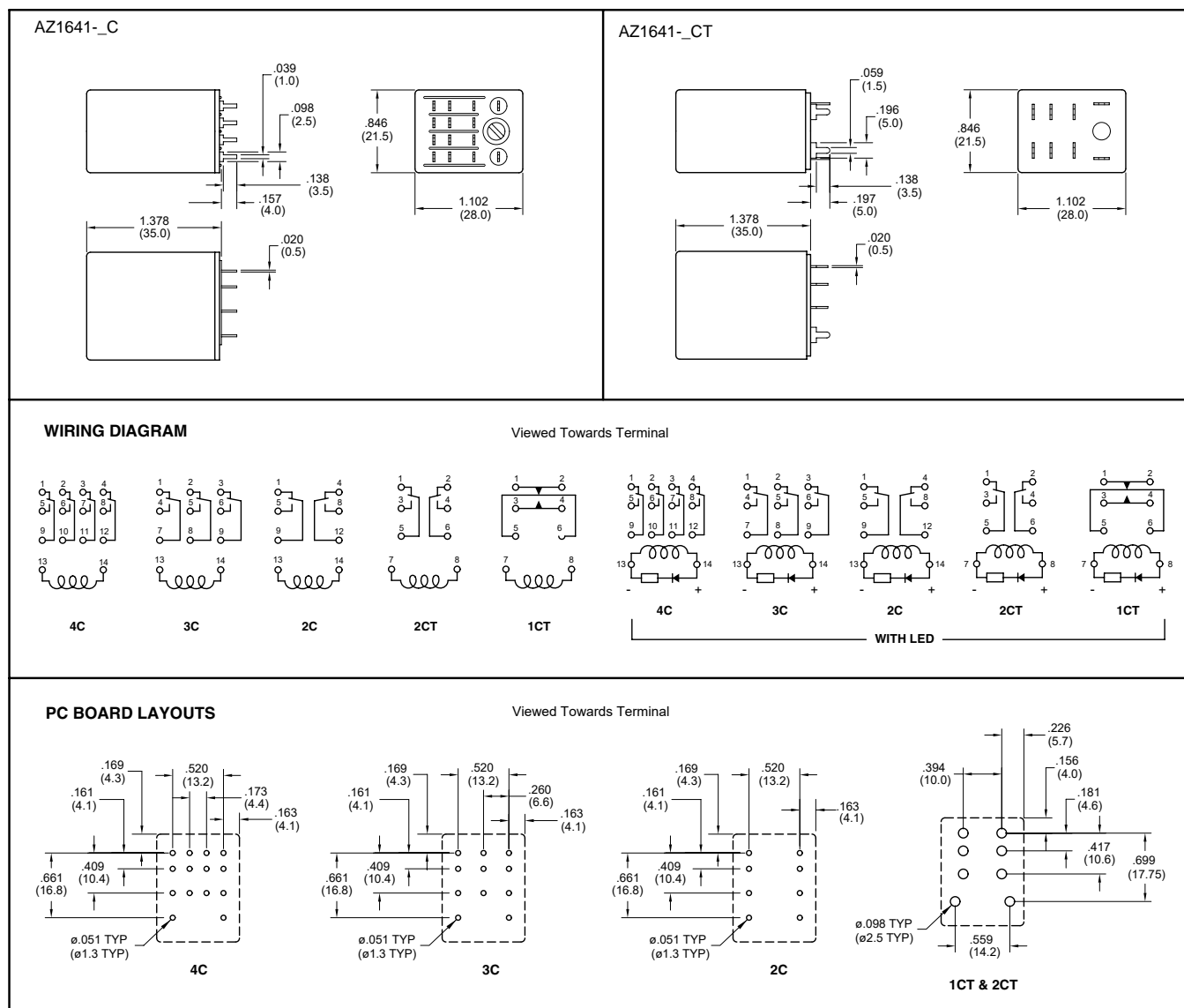
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## CONTACT RATINGS

|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                       |                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Maximum Ratings</b> | <p><b>SPDT Heavy duty, resistive load:</b><br/> Max. Switched Power: 560 W, 5540 VA<br/> Max. Switched Current: 20 A<br/> Max. Switched Voltage: 28 VDC, 277 VAC</p> <p><b>DPDT Heavy duty, resistive load:</b><br/> Max. Switched Power: 560 W, 5540 VA<br/> Max. Switched Current: 10 A<br/> Max. Switched Voltage: 28 VDC, 277 VAC</p> <p><b>DPDT, 3PDT Standard duty, resistive load:</b><br/> Max. Switched Power: 280 W, 2500 VA<br/> Max. Switched Current: 10 A<br/> Max. Switched Voltage: 28 VDC, 220 VAC</p> <p><b>4PDT, Standard duty, resistive load:</b><br/> Max. Switched Power: 280 W, 2500 VA<br/> Max. Switched Current: 5 A<br/> Max. Switched Voltage: 28 VDC, 220 VAC</p> | <b>UL/CUR Ratings</b> | <p><b>SPDT Heavy duty:</b><br/> 20 A, 277 VAC, General use<br/> 20 A, 28 VDC, General use</p> <p><b>DPDT Heavy duty:</b><br/> 10 A, 277 VAC, General use<br/> 10 A, 28 VDC, General use<br/> 1/2 HP, (9.8A) 125 VAC, Motor load</p> <p><b>DPDT, 3PDT, Standard duty:</b><br/> 10 A, 220 VAC, General use<br/> 10 A, 28 VDC, General use</p> <p><b>4PDT, Standard duty:</b><br/> 5A, 220 VAC, General use<br/> 5A, 28 VDC, General use</p> |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## MECHANICAL DATA



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## RELAY ORDERING DATA

| STANDARD RELAYS: DC Coil |                  |                     |                               |                                 |                |
|--------------------------|------------------|---------------------|-------------------------------|---------------------------------|----------------|
| COIL SPECIFICATIONS      |                  |                     |                               |                                 | ORDER NUMBER*  |
| Nominal Coil VDC         | Must Operate VDC | Max. Continuous VDC | Nominal Current mA $\pm 10\%$ | Coil Resistance Ohms $\pm 10\%$ |                |
| 6                        | 4.8              | 6.6                 | 150.0                         | 40                              | AZ1641-2C-6D   |
| 12                       | 9.6              | 13.2                | 75.0                          | 160                             | AZ1641-2C-12D  |
| 24                       | 19.2             | 26.4                | 36.9                          | 650                             | AZ1641-2C-24D  |
| 48                       | 38.4             | 52.8                | 18.5                          | 2600                            | AZ1641-2C-48D  |
| 110                      | 88.0             | 121.0               | 10.0                          | 11,000                          | AZ1641-2C-110D |

| STANDARD RELAYS: AC Coil (50/60 Hz) |                  |                     |                               |                                 |                |
|-------------------------------------|------------------|---------------------|-------------------------------|---------------------------------|----------------|
| COIL SPECIFICATIONS                 |                  |                     |                               |                                 | ORDER NUMBER*  |
| Nominal Coil VAC                    | Must Operate VAC | Max. Continuous VAC | Nominal Current mA $\pm 10\%$ | Coil Resistance Ohms $\pm 10\%$ |                |
| 6                                   | 4.8              | 7.1                 | 200.0                         | 11.5                            | AZ1641-2C-6A   |
| 12                                  | 9.6              | 14.3                | 100.0                         | 46                              | AZ1641-2C-12A  |
| 24                                  | 19.2             | 28.6                | 50.0                          | 184                             | AZ1641-2C-24A  |
| 48                                  | 38.4             | 57.1                | 25.0                          | 735                             | AZ1641-2C-48A  |
| 120                                 | 96.0             | 143.0               | 10.0                          | 4,550                           | AZ1641-2C-120A |
| 220                                 | 176.0            | 261.0               | 5.5                           | 14,400                          | AZ1641-2C-220A |

\* For 3PDT or 4PDT substitute "-3C" or "-4C" for "-2C". For LED add "1" to the end of p/n.

## RELAY ORDERING DATA

| HEAVY DUTY RELAYS: DC Coil |                  |                     |                               |                                 |                 |
|----------------------------|------------------|---------------------|-------------------------------|---------------------------------|-----------------|
| COIL SPECIFICATIONS        |                  |                     |                               |                                 | ORDER NUMBER*   |
| Nominal Coil VDC           | Must Operate VDC | Max. Continuous VDC | Nominal Current mA $\pm 10\%$ | Coil Resistance Ohms $\pm 10\%$ |                 |
| 6                          | 4.8              | 6.6                 | 150.0                         | 40                              | AZ1641-1CT-6D   |
| 12                         | 9.6              | 13.2                | 75.0                          | 160                             | AZ1641-1CT-12D  |
| 24                         | 19.2             | 26.4                | 36.9                          | 650                             | AZ1641-1CT-24D  |
| 48                         | 38.4             | 52.8                | 18.5                          | 2600                            | AZ1641-1CT-48D  |
| 110                        | 88.0             | 121.0               | 10.0                          | 11,000                          | AZ1641-1CT-110D |

| HEAVY DUTY RELAYS: AC Coil (50/60 Hz) |                  |                     |                               |                                 |                 |
|---------------------------------------|------------------|---------------------|-------------------------------|---------------------------------|-----------------|
| COIL SPECIFICATIONS                   |                  |                     |                               |                                 | ORDER NUMBER*   |
| Nominal Coil VAC                      | Must Operate VAC | Max. Continuous VAC | Nominal Current mA $\pm 10\%$ | Coil Resistance Ohms $\pm 10\%$ |                 |
| 6                                     | 4.8              | 7.1                 | 200.0                         | 11.5                            | AZ1641-1CT-6A   |
| 12                                    | 9.6              | 14.3                | 100.0                         | 46                              | AZ1641-1CT-12A  |
| 24                                    | 19.2             | 28.6                | 50.0                          | 184                             | AZ1641-1CT-24A  |
| 48                                    | 38.4             | 57.1                | 25.0                          | 735                             | AZ1641-1CT-48A  |
| 120                                   | 96.0             | 143.0               | 10.0                          | 4,550                           | AZ1641-1CT-120A |
| 220                                   | 176.0            | 261.0               | 5.5                           | 14,400                          | AZ1641-1CT-220A |
| 240                                   | 192.0            | 288.0               | 5.0                           | 22,000                          | AZ1641-1CT-240A |

\* For DPDT substitute "-2CT" for "-1CT". For LED add "1" to the end of p/n.

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This 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.