### **AZ935**\_

# 20 AMP MINIATURE DUAL AUTOMOTIVE RELAY – QUIET

#### **FEATURES**

- Extremely silent operation
- Up to 20 Amp switching capability in a compact size
- Sealed
- Two separate relays in one package
- Vibration and shock resistant
- ISO/TS 16949, ISO 14000
- Cost effective
- Designed for power windows, power seats and wiper applications



#### **CONTACTS**

| Arrangement         | DPDT (2x1-Form C)                                                                             |
|---------------------|-----------------------------------------------------------------------------------------------|
| Ratings continuous: | Max. switched power: 280 W Max. switched voltage: 100 VDC Max. switched current (make/break), |
|                     | 2 Form C: 25A/20A, 20A                                                                        |
| Material            | Silver tin oxide (silver nickel available - contact factory)                                  |
| Resistance          | < 100 milliohms at 1A, 5 VDC                                                                  |
|                     |                                                                                               |

#### COIL

| Power                          |                              |  |  |
|--------------------------------|------------------------------|--|--|
| At Pickup Voltage (typical)    | 203 mW                       |  |  |
| Max. Continuous<br>Dissipation | 1.9 W 20°C (68°F) ambient    |  |  |
| Temperature Rise               | 32°C (58°F) nominal coil VDC |  |  |
| Max. Temperature               | 155°C (311°F)                |  |  |

#### **NOTES**

- 1. All values at 20°C (68°F).
- 2. Maximum make current refers to in-rush current of lamp load.
- 3. Relay may pull in with less than "Must Operate" value.
- 4. Specifications subject to change without notice.

#### **GENERAL DATA**

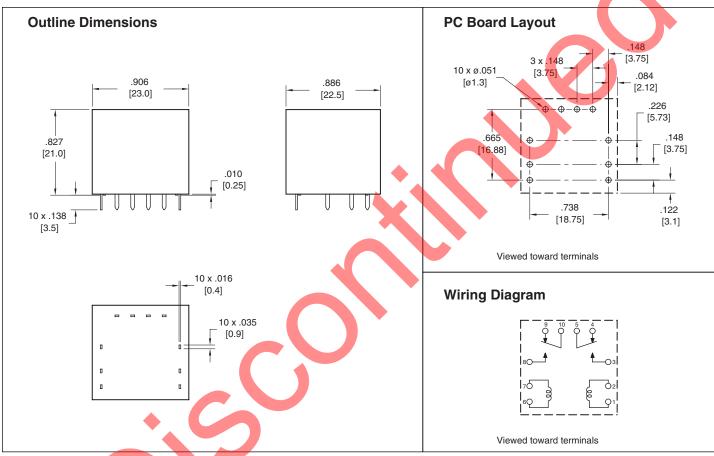
| Life Expectancy Mechanical Electrical  Ninimum operations 1 x 107 operations 2 x 105 operations at 20 A 14 VDC Res.  Operate Time (typical)  Release Time (typical)  1.5 ms at nominal coil voltage (with no coil suppression)  Dielectric Strength (at sea level for 1 min.)  Insulation Resistance  Insulation Resistance  Operating Storage  At nominal coil voltage -40°C (-40°F) to 85°C (185°F) -40°C (-40°F) to 155°C (311°F)  Vibration  O.062" DA at 10–55Hz, 10 g at 55-200 Hz  Shock  30 g, 11 ms, functional  Terminals  Tinned copper alloy, P.C.  Max. Solder Temp.  5 seconds  Max. Solvent Temp.  80°C (176°F)  Max. Immersion Time  Moight  10 grams                                                                                                                                                                                                                  |                        |                                         |  |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------------------------------|--|--|
| Release Time (typical)  1.5 ms at nominal coil voltage (with no coil suppression)  Dielectric Strength (at sea level for 1 min.)  Insulation Resistance  Dropout  Ambient Temperature Operating Storage  Vibration  O.062" DA at 10–55Hz, 10 g at 55-200 Hz  Shock  Terminals  Tinned copper alloy, P.C.  Max. Solder Time  Max. Solvent Temp.  80°C (176°F)  Max. Immersion Time  1.5 ms at nominal coil voltage (with no coil suppression)  1.5 ms at nominal coil voltact (with no coil suppression)  500 Vrms between open contacts  100 megohms min. at 20°C, 500 VDC, 50% RH  Dropout  > 8.3% of nominal coil voltage  -40°C (-40°F) to 85°C (185°F)  -40°C (-40°F) to 155°C (311°F)  Vibration  0.062" DA at 10–55Hz, 10 g at 55-200 Hz  Shock  30 g, 11 ms, functional  Terminals  Tinned copper alloy, P.C.  Max. Solder Temp.  80°C (176°F)  Max. Immersion Time  30 seconds | Mechanical             | 1 x 10 <sup>7</sup> operations          |  |  |
| (with no coil suppression)  Dielectric Strength (at sea level for 1 min.)  Insulation Resistance  Dropout  Ambient Temperature Operating Storage  Vibration  O.062" DA at 10–55Hz, 10 g at 55-200 Hz  Shock  30 g, 11 ms, functional  Terminals  Tinned copper alloy, P.C.  Max. Solder Temp.  Max. Solvent Temp.  80°C (176°F)  Max. Immersion Time  Mover Condoc Suppression)  500 Vrms coil to contact 500 Vrms between open contacts  100 megohms min. at 20°C, 500 VDC, 50% RH  20°C, 500 VDC, 50% RH  At nominal coil voltage -40°C (-40°F) to 85°C (185°F) -40°C (-40°F) to 155°C (311°F)  Vibration  0.062" DA at 10–55Hz, 10 g at 55-200 Hz  Shock 30 g, 11 ms, functional  Terminals  Tinned copper alloy, P.C.  Max. Solder Temp.  90°C (176°F)  Max. Immersion Time  30 seconds                                                                                            | Operate Time (typical) | 3 ms at nominal coil voltage            |  |  |
| (at sea level for 1 min.)  Insulation Resistance  100 megohms min. at 20°C, 500 VDC, 50% RH  Dropout  > 8.3% of nominal coil voltage  Ambient Temperature Operating Storage  At nominal coil voltage -40°C (-40°F) to 85°C (185°F) -40°C (-40°F) to 155°C (311°F)  Vibration  0.062" DA at 10–55Hz, 10 g at 55-200 Hz  Shock 30 g, 11 ms, functional  Terminals  Tinned copper alloy, P.C.  Max. Solder Temp.  270°C (518°F)  Max. Solder Temp.  80°C (176°F)  Max. Immersion Time  30 seconds                                                                                                                                                                                                                                                                                                                                                                                         | Release Time (typical) |                                         |  |  |
| Dropout   > 8.3% of nominal coil voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | _                      |                                         |  |  |
| Ambient Temperature Operating Storage  At nominal coil voltage -40°C (-40°F) to 85°C (185°F) -40°C (-40°F) to 155°C (311°F)  Vibration  0.062" DA at 10–55Hz, 10 g at 55-200 Hz  Shock 30 g, 11 ms, functional  Terminals  Tinned copper alloy, P.C.  Max. Solder Temp.  270°C (518°F)  Max. Solder Time  5 seconds  Max. Solvent Temp.  80°C (176°F)  Max. Immersion Time  30 seconds                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Insulation Resistance  |                                         |  |  |
| Operating Storage         -40°C (-40°F) to 85°C (185°F) -40°C (-40°F) to 155°C (311°F)           Vibration         0.062" DA at 10–55Hz, 10 g at 55-200 Hz           Shock         30 g, 11 ms, functional           Terminals         Tinned copper alloy, P.C.           Max. Solder Temp.         270°C (518°F)           Max. Solvent Temp.         80°C (176°F)           Max. Immersion Time         30 seconds                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Dropout                | > 8.3% of nominal coil voltage          |  |  |
| Shock  30 g, 11 ms, functional  Terminals  Tinned copper alloy, P.C.  Max. Solder Temp.  270°C (518°F)  Max. Solder Time  5 seconds  Max. Solvent Temp.  80°C (176°F)  Max. Immersion Time  30 seconds                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Operating              | -40°C (-40°F) to 85°C (185°F)           |  |  |
| Terminals Tinned copper alloy, P.C.  Max. Solder Temp. 270°C (518°F)  Max. Solder Time 5 seconds  Max. Solvent Temp. 80°C (176°F)  Max. Immersion Time 30 seconds                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Vibration              | 0.062" DA at 10-55Hz, 10 g at 55-200 Hz |  |  |
| Max. Solder Temp. 270°C (518°F)  Max. Solder Time 5 seconds  Max. Solvent Temp. 80°C (176°F)  Max. Immersion Time 30 seconds                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Shock                  | 30 g, 11 ms, functional                 |  |  |
| Max. Solder Time 5 seconds  Max. Solvent Temp. 80°C (176°F)  Max. Immersion Time 30 seconds                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Terminals              | Tinned copper alloy, P.C.               |  |  |
| Max. Solvent Temp. 80°C (176°F)  Max. Immersion Time 30 seconds                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Max. Solder Temp.      | 270°C (518°F)                           |  |  |
| Max. Immersion Time 30 seconds                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Max. Solder Time       | 5 seconds                               |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Max. Solvent Temp.     | 80°C (176°F)                            |  |  |
| Woight 10 grams                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Max. Immersion Time    | 30 seconds                              |  |  |
| Weight 10 grains                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Weight                 | 10 grams                                |  |  |

## **AZ935**

#### **RELAY ORDERING DATA**

| COII                | ORDER NUMBER     |                        |                      |                    |
|---------------------|------------------|------------------------|----------------------|--------------------|
| Nominal Coil<br>VDC | Must Operate VDC | Max. Continuous<br>VDC | Coil Resistance ±10% | 2 Form C<br>(SPDT) |
| 12                  | 7.2              | 22.0                   | 255                  | AZ935-2C-12DET     |

#### **MECHANICAL DATA**



Dimensions in inches with metric equivalents in parentheses. Tolerance: ± 0.010"