

# AZSR165

## 65 AMP POWER RELAY

### FEATURES

- Up to 80 Amp switching capability
- Wide contact gap of  $\geq 3.0$  mm
- Clearance and creepage of  $\geq 10$  mm
- 5 kV dielectric strength, 10 kV surge withstand voltage
- UL Class F insulation(155°C)
- UL / CUR E365652
- TÜV B0887930008
- CQC 17002178200



### CONTACTS

<b>Arrangement</b>	SPST-N.O. (1 Form A)
<b>Ratings (max.)</b> switched power switched current continuous current switched voltage	(resistive load) 43200 VA 80A 65A 690VAC
<b>Rated Loads</b> UL/CUR/TÜV/CQC	80A at 540 VAC, resistive, 85°C, 1k cycles <sup>[1][2]</sup> 10 A make - 65 A carry - 10 A break at 690 VAC, resistive, 85°C, 100k cycles <sup>[1]</sup> 20 A make - 65 A carry - 20 A break at 690 VAC, resistive, 85°C, 30k cycles <sup>[1]</sup> 20 A make - 65 A carry - 20 A break at 690 VAC, resistive, 85°C, 100k cycles <sup>[2]</sup>
<b>Contact material</b>	AgNi - silver nickel <sup>[1]</sup> AgSnO <sub>2</sub> - silver tin oxide <sup>[2]</sup>
<b>Contact gap</b>	$\geq 3.0$ mm
<b>Contact resistance</b> initial	(load contact) $\leq 100$ m $\Omega$ (at 6V, 1A, voltage drop method ) $\leq 10$ m $\Omega$ (at 10A, voltage drop method )
typical	$< 3$ m $\Omega$ (at 6V, 1A, voltage drop method )

### COIL

<b>Nominal coil DC voltages</b>	6, 9, 12, 24,
<b>Dropout voltage</b>	$\geq 5\%$ of nominal coil voltage
<b>Holding voltage</b>	$\geq 40\%$ of nominal coil voltage
<b>Coil power</b> nominal holding power at pickup voltage	2.2 W 360mW 1.25 W
<b>Temperature Rise</b>	70 K (126°F) at nom. coil voltage, 85°C
<b>Max. temperature</b>	Class F insulation - 155°C (311°F)

### GENERAL DATA

<b>Life Expectancy</b> mechanical electrical	(minimum operations) $1 \times 10^6$ see UL/CUR/TÜV/CQC ratings
<b>Operate Time</b> max. typical	(at nominal coil voltage) 40 ms $< 25$ ms
<b>Release Time</b> max. typical	(at nominal coil voltage) 10 ms (without coil suppression) $< 5$ ms (suppression with Z-diode at 2 x Unom.)
<b>Dielectric Strength</b>	(at sea level for 1 min.) 5000 V <sub>RMS</sub> coil to contact 2500 V <sub>RMS</sub> between open contacts
<b>Surge Voltage</b> coil to contact	10 kV ( at 1.2 x 50 $\mu$ s )
<b>Insulation Resistance</b>	1000 M $\Omega$ (min.) at 23°C, 500 VDC, 50% RH
<b>Creepage</b> coil to contact	$\geq 10.0$ mm
<b>Clearance</b> coil to contact	$\geq 10.0$ mm
<b>Temperature Range</b> operating	(at nominal coil voltage) -40°C (-40°F) to 85°C (185°F)
<b>Vibration resistance</b>	0.062" (1.5 mm) DA at 10–55 Hz
<b>Shock</b>	10 g
<b>Enclosure</b> protection category material group flammability	P.B.T. polyester RT II, flux proof Illa UL94 V-0
<b>Terminals</b>	Tinned copper alloy, P. C.
<b>Soldering</b> max. temperature max. time	270 °C (518°F ) 5 seconds
<b>Dimensions</b> length width height	38.0 mm (1.50") 33.0 mm (1.30") 41.5 mm (1.63")
<b>Weight</b>	76 grams (approx.)
<b>Compliance</b>	UL 508, IEC 61810-1, RoHS, REACH
<b>Packing unit in pcs</b>	10 per plastic tube / 150 per carton box

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# AZSR165

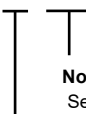
## COIL VOLTAGE SPECIFICATIONS

Nominal Coil VDC	Must Operate VDC	Min. Holding VDC	Max. Cont. VDC	Resistance Ohm $\pm$ 10%
6	4.5	2.4	6.6	16.5
9	6.75	3.6	9.9	37
12	9	4.8	13.2	65
24	18	9.6	26.4	260

Note: All values at 23°C (73°F), upright position, terminals downward.

## ORDERING DATA

AZSR165-1A□-□DL



**Nominal coil voltage**  
See coil voltage specifications table

**Contact material**  
Nil: silver nickel  
E: silver tin oxide

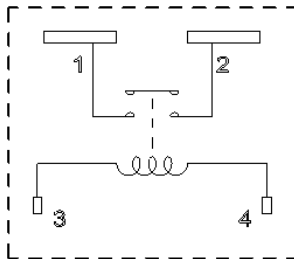
### Example ordering data

AZSR165-1A-12DL Contact material: silver nickel, 12 VDC nom. coil voltage  
AZSR165-1AE-9DL Contact material: silver tin oxide, 9 VDC nom. coil voltage

## WIRING DIAGRAMS

Viewed towards terminals.

Note: Provide sufficient PCB cross section on load terminals. Recommended cross section according to IEC 61810-1 at 65A is 16 mm<sup>2</sup>

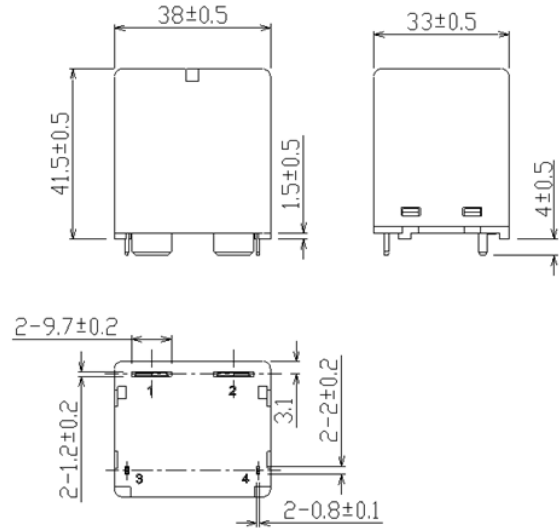


## NOTES

- Specifications subject to change without notice.
- All values at 23°C (73°F).
- Relay may pull in with less than "Must Operate" value.
- Provide sufficient PCB cross section on load terminals.  
Recommended cross section according to IEC 61810-1 at 65A: 16mm<sup>2</sup>
- Coil suppression circuits such as diodes, etc. in parallel to the coil will lengthen the release time.

## MECHANICAL DATA

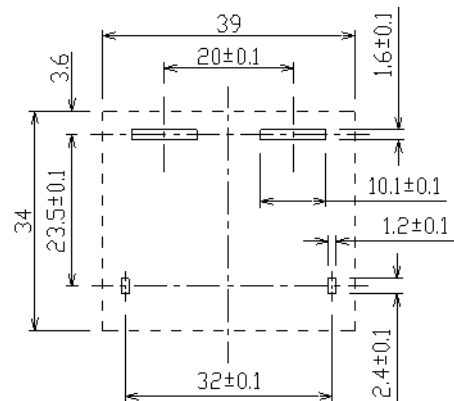
Dimensions in mm. Tolerance:  $\pm$  0.5 mm unless otherwise stated



## PC BOARD LAYOUT

Recommendation for PC board layout.

Dimensions in mm. Viewed towards terminals.



# AZSR165

## DISCLAIMER

This product specification is to be used in conjunction with the application notes which can be downloaded from the regional ZETTLER relay websites. 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.

## ZETTLER GROUP

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