

# AZ7709

## SPST MINIATURE POWER RELAY

### FEATURES

- 4 kV dielectric strength
- Proof tracking index (PTI/CTI) 250
- 5 Amp switching capability (version "T" 10 Amp)
- Epoxy sealed version available
- Class F insulation available
- UL, CUR file E365652
- TUV B0887930007
- CQC 14002105344



### CONTACTS

<b>Arrangement</b>	SPST-NO. (1 Form A)
<b>Ratings (max.)</b> switched power	(resistive load) 150W or 1250 VA
switched current	(Version "T": 300W or 2500VA ) 5 A (Version "T" : 10A )
continuous current	5 A (Version "T" : 10A )
switched voltage	30VDC* or 250VAC
<b>Rated Loads</b> <b>UL/CUR</b>	Standard Coil
	5A at 250VAC, resistive, 100k cycles 85°C
	5A at 30VDC, resistive, 100k cycles 85°C
	1/6HP at 125/250 VAC, 100k cycles 85°C
	Sensitive Coil
	3A at 250VAC, Res. 100k cycles 85°C
3A at 30VDC, Res. 100k cycles 85°C	
High capacity version "T"	
Standard Coil	
10A at 250VAC, Res. 100k cycles 85°C	
10A at 30VDC, Res. 100k cycles 85°C	
1/6HP at 125/250 VAC, 100k cycles 85°C	
TV5 at 120VAC, 25k cycles 25°C Silver tin contacts only	
Sensitive Coil	
8A at 250VAC, 85°C, 100k cycles	
8A at 30VDC, Res. 100k cycles 85°C	
<b>TÜV/CQC</b>	Standard Coil
	5A at 250VAC/ 30VDC, Res., 100k cycles 85°C
	10A at 250VAC/ 30VDC, Res., 100k cycles 85°C( "T Ver.)
	Sensitive Coil
	3A at 250VAC/ 30VDC, Res. 100k cycles 85°C
	8A at 250VAC/ 30VDC, Res., 100k cycles 85°C( "T Ver.)
(All TUV ratings 105°C Class F only)	

### Contact material

Silver cadmium oxide,  
Silver alloy (UL only),  
Silver tin oxide, gold plating available  
(UL/TUV only)

### Contact resistance

(load contact)

Initial ≤ 100 mΩ  
typical < 3 mΩ

### COIL

#### Nominal coil DC voltages

3,5,6, 9, 12, 18, 24

#### Dropout voltage

> 5% of nominal coil voltage

#### Coil power

(at 20 °C)

Nominal 0.45 W (standard coil)  
0.2W (sensitive coil)

#### at pickup voltage

220mW (standard coil)  
113 mW (sensitive coil)

#### Temperature Rise

standard

41°C (74°F) at nominal coil voltage, 85°C  
sensitive  
22°C (40°F) at nominal coil voltage, 85°C

#### Max. temperature

Max. 105°C (221°F) Standard  
Max. 155°C (311°F) available

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## GENERAL DATA

<b>Life Expectancy</b>	(minimum operations)
mechanical	1 x 10 <sup>7</sup>
electrical	see UL/CUR/TÜV/CQC ratings
<b>Operate Time</b>	8 ms (max.) at nominal coil voltage
<b>Release Time</b>	4 ms (max.) at nominal coil voltage, (without coil suppression)
<b>Dielectric Strength</b>	(at sea level for 1 min.)
coil to load contacts	4000 V <sub>RMS</sub>
open load contacts	1000 V <sub>RMS</sub>
<b>Insulation Resistance</b>	1000 MΩ (min.) at 20°C, 500 VDC, 50% RH
<b>Temperature Range operating</b>	(at nominal coil voltage) -40°C (-40°F) to 85°C (185°F) -40°C (-40°F) to 105°C (221°F) Class F only
<b>Vibration resistance</b>	0.062" (1.5 mm) DA at 10–55 Hz
<b>Shock</b>	10 g
<b>Enclosure</b>	P.B.T. polyester
protection category	RT II, flux proof
material group	IIIa
flammability	UL94 V-0
<b>Terminals</b>	Tinned copper alloy, P. C.
<b>Soldering</b>	
max. temperature	270 °C
max. time	5 s
<b>Dimensions</b>	
length	18.4 mm (0.724")
width	10.2 mm (0.401")
height	15.5 mm (0.610")
<b>Weight</b>	6 grams (approx.)
<b>Compliance</b>	UL 508, IEC 61810-1, RoHS, REACH
<b>Packing unit in pcs</b>	100 per plastic tray / 1000 per carton box

## COIL VOLTAGE SPECIFICATIONS

### STANDARD COIL

Nominal Coil VDC	Must Operate VDC	Max. Cont. VDC	Resistance Ohm ± 10%
3	2.1	3.9	20
5	3.5	6.5	55
6	4.2	7.8	80
9	6.3	11.7	180
12	8.4	15.6	320
18	12.6	23.4	720
24	16.8	31.2	1280
48	33.6	62.4	5120

### SENSITIVE COIL

Nominal Coil VDC	Must Operate VDC	Max. Cont. VDC	Resistance Ohm ± 10%
3	2.25	3.9	45
5	3.75	6.5	125
6	4.5	7.8	180
9	6.75	11.7	400
12	9.0	15.6	720
18	13.5	23.4	1620
24	18.0	31.2	2800

Note: All values at 20°C (73°F), upright position, terminals downward.

## ORDERING DATA

**AZ7709 - 1A E -12DS E F G (XXX)**

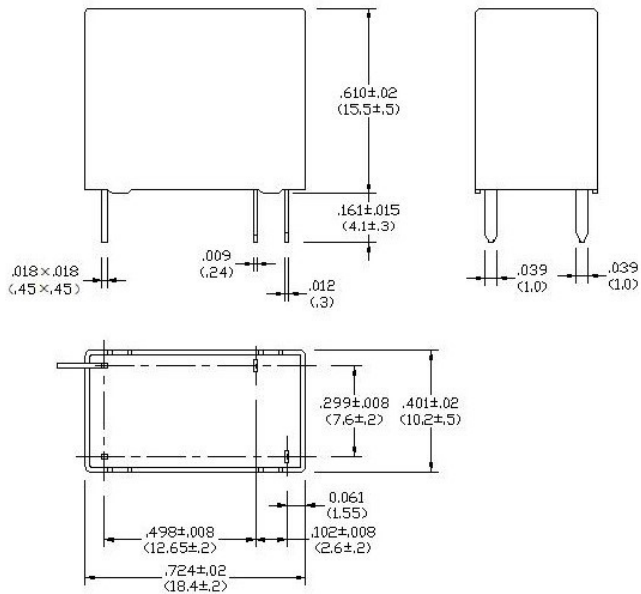
	I	II	III	IV	V	VI	VII	VIII
I. Basic Series	AZ7709 : standard contacts AZ7709T : High capacity version							
II. Contact Form	1A: 1 form A							
III. Contact Material	Blank: Silver cadmium oxide E: Silver tin oxide B: Silver alloy (UL only)							
IV. Coil Voltage	D (standard coil) 3,5,6, 9, 12, 18,24,48VDC. DS (sensitive coil) 3,5,6,9,12,18,24VDC.							
V. Construction	Blank: no epoxy seal E: epoxy seal							
VI. Insulation System	Blank: standard version F: Class F 155°C Version							
VII. Gold plated contacts	Blank: no gold plated contacts G: gold plated contacts. (UL/TUV only)							
VIII. Special code	Additional numbers or letters, which does not Designate construction features or ratings							

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## MECHANICAL DATA

Dimensions in mm. Tolerance:  $\pm 0.3\text{mm}$



## Example ordering data

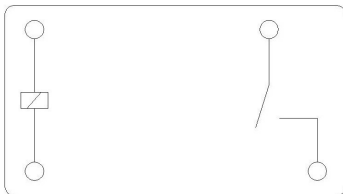
AZ7709-1AE-12DF With  
AZ7709 standard series  
AgSnO<sub>2</sub> Contact Material  
12 VDC standard coil  
No epoxy seal  
Class F Insulation System  
No gold plated contacts

## NOTES

1. All values at 20°C (68°F).
2. Relay may pull in with less than "Must Operate" value.
3. Provide sufficient PCB cross section as heat spreader on terminals.
4. Specifications subject to change without notice.

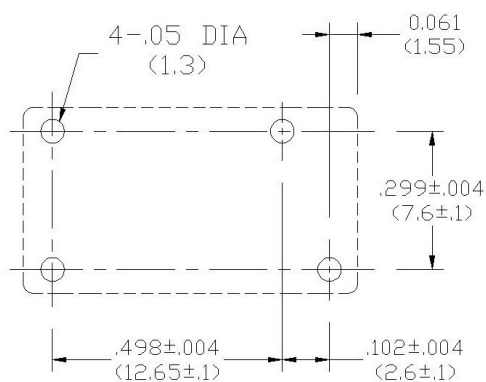
## WIRING DIAGRAMS

Viewed towards terminals



## PC BOARD LAYOUT

Viewed towards terminals. Dimensions in mm. Tolerance:  $\pm 0.3\text{mm}$



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## 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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