

## 12 AMP MINIATURE POWER RELAY

### FEATURES

- 12 Amp switching capability
- 5 kV dielectric strength, Isolation spacing  $\geq 10$  mm
- Reinforced insulation according IEC 60730-1, IEC 60335-1
- Proof tracking index (PTI/CTI) 250
- AC and DC coils available
- Compact size, low seated height of 15.7 mm
- UL / CUR file E43203
- VDE certificate 40012572



### CONTACTS

<b>Arrangement</b>	SPST-N.O. (1 Form A) SPDT (1 Form C)
<b>Ratings (max.)</b> switched power switched current switched voltage	(resistive load) 300 W or 3000 VA 12 A 300 VDC* or 400 VAC  * Note: If switching voltage is greater than 30 VDC, special precautions must be taken. Please contact the factory.
<b>Rated Loads</b> <b>UL, CUR</b>	12 A at 250 VAC, general use <sup>[1][2]</sup>
<b>VDE</b>	<b>1 Form A - DC coil types</b> 12 A at 250 VAC, 50k cycles, 85°C <sup>[1]</sup> 12 A at 250 VAC, 10k cycles, 85°C <sup>[2]</sup>  <b>1 Form A - AC coil types</b> 12 A at 250 VAC, 60k cycles, 70°C <sup>[1][2]</sup>  <b>1 Form C - DC coil types</b> 12 A at 250 VAC, 50k cycles, 85°C <sup>[1]</sup> 12 A at 250 VAC, 10k cycles, 85°C <sup>[2]</sup>  <b>1 Form C - AC coil types</b> 12 A at 250 VAC, 60k cycles, 70°C <sup>[1]</sup> 12 A at 250 VAC, 10k cycles, 70°C <sup>[2]</sup>
<b>Contact material</b>	AgNi (silver nickel) <sup>[1]</sup> AgNi+Au (silver nickel - gold plated) <sup>[1]</sup> AgSnO <sub>2</sub> (silver tin oxide) <sup>[2]</sup>
<b>Initial resistance</b>	$\leq 100$ m $\Omega$

### COIL

<b>Nominal coil voltages</b>	see coil voltage specifications tables
<b>Dropout</b> DC coil types AC coil types	> 10% of nominal coil voltage > 15% of nominal coil voltage
<b>Coil power</b> DC coil types nominal max. continuous at pickup voltage AC coil types nominal max. continuous at pickup voltage	at 23°C (73°F) ambient temperature  0.4 W (approx.) 1.7 W 200 mW (typ.)  0.75 VA (approx.) 1.7 VA 0.42 VA (typ.)
<b>Temperature Rise</b>	26 K (47°F) at nominal coil voltage
<b>Max. temperature</b>	Class F insulation - 155°C (311°F)

### GENERAL DATA

<b>Life Expectancy</b> mechanical electrical	(minimum operations) $3 \times 10^7$ $1 \times 10^5$ at 12 A 250VAC resistive
<b>Operate Time</b>	7 ms (typ.) at nominal coil voltage
<b>Release Time</b>	3 ms (typ.) at nominal coil voltage, without coil suppression
<b>Dielectric Strength</b>	(at sea level for 1 min.) 5000 V <sub>RMS</sub> coil to contact 1000 V <sub>RMS</sub> between open contacts
<b>Insulation Resistance</b>	$10^5$ M $\Omega$ (min.) at 20°C, 500 VDC, 50% RH
<b>Isolation spacing</b> clearance creepage	(coil to contact) $\geq 10$ mm $\geq 10$ mm
<b>Insulation</b>	B250 (1 Form C, flux proof versions) C250 (other versions) Overvoltage category: III Pollution degree: 3 Nominal voltage: 250 VAC (according to DIN VDE 0110, IEC 60664-1) Reinforced insulation according to IEC 60730-1 (VDE 0631, part 1) IEC 60335-1 (VDE 0700, part 1)
<b>Temperature Range</b> operating DC coil types AC coil types	(at nominal coil voltage) -40°C (-40°F) to 85°C (185°F) -40°C (-40°F) to 70°C (158°F)
<b>Vibration resistance</b> N.O. contacts N.C. contacts	20 g at 30 - 500 Hz 5 g at 20 - 500 Hz
<b>Shock resistance</b>	20 g
<b>Enclosure</b> type material group flammability	P.B.T. polyester flux proof, wash tight IIIa 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>Cleaning</b> max. solvent temp. max. immersion time	80°C (176°F) 30 seconds
<b>Dimensions</b> length width height	29.0 mm (1.142") 12.7 mm (0.500") 15.7 mm (0.618")
<b>Weight</b>	14 grams (approx.)
<b>Packing unit in pcs</b>	20 per carton tube / 1000 per carton box
<b>Compliance</b>	UL 508, IEC 61810-1, RoHS, REACH

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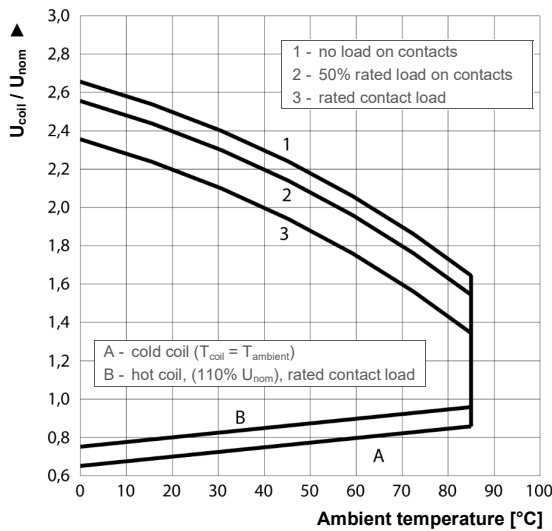
## DC COIL VOLTAGE SPECIFICATIONS

Nominal Coil VDC	Must Operate VDC	Max. Cont. VDC	Nom. Current mA $\pm 10\%$	Resistance Ohm $\pm 10\%$
3	2.1	7.6	136	22
5	3.5	12.7	83.3	60
6	4.2	15.3	66.7	90
9	6.3	22.9	45.0	200
12	8.4	30.6	33.3	360
18	12.6	45.9	25.4	710
24	16.8	61.2	16.7	1440
36	25.2	92.0	11.5	3140
48	33.6	122	8.42	5700
60	42.0	153	8.0	7500
110	77.0	280	4.37	25200

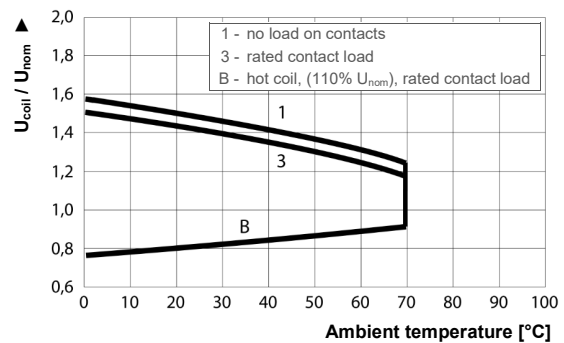
## AC COIL VOLTAGE SPECIFICATIONS

Nominal Coil VAC	Must Operate VAC	Max. Cont. VAC	Nom. Current mA $\pm 10\%$	Resistance Ohm $\pm 10\%$
12	9.0	18.0	63.0	100
24	18.0	36.0	31.3	400
48	36.0	72.0	15.6	1550
60	45.0	90.0	12.5	2600
110	82.5	165.0	6.8	8900
115	86.3	172.5	6.5	9600
120	90.0	180.0	6.3	10200
220	165.0	330.0	3.4	35500
230	172.5	345.0	3.3	38500
240	180.0	360.0	3.1	42500

## DC COIL OPERATING RANGE



## AC COIL OPERATING RANGE



## ORDERING DATA

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**Sealing option**  
nil: flux proof - non sealed  
E: wash tight - sealed

**Coil type**  
D: DC coil type  
A: AC coil type

**Nominal coil voltage**  
see coil voltage specifications tables

**Contact material**  
nil: silver nickel  
G: silver nickel - gold plated  
E: silver tin oxide

**Contact arrangement**  
1A: 1 Form A (SPST-N.O.)  
1C: 1 Form C (SPDT)

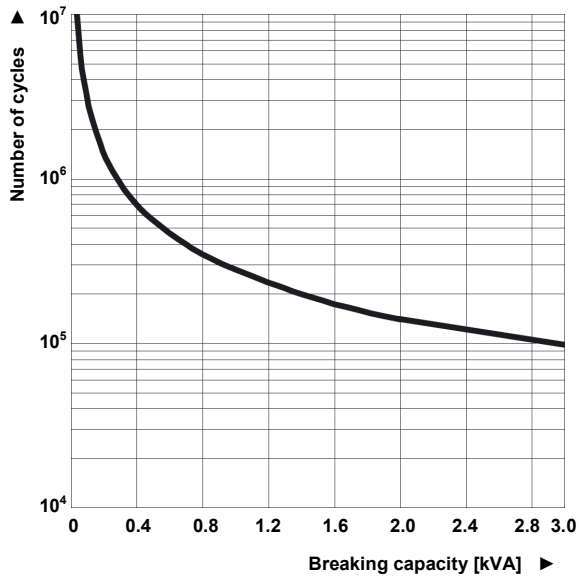
**Pinout/Spacing**  
nil: 3.5mm standard spacing  
L: 5.0mm LEFT spacing  
R: 5.0mm RIGHT spacing

## Example ordering data

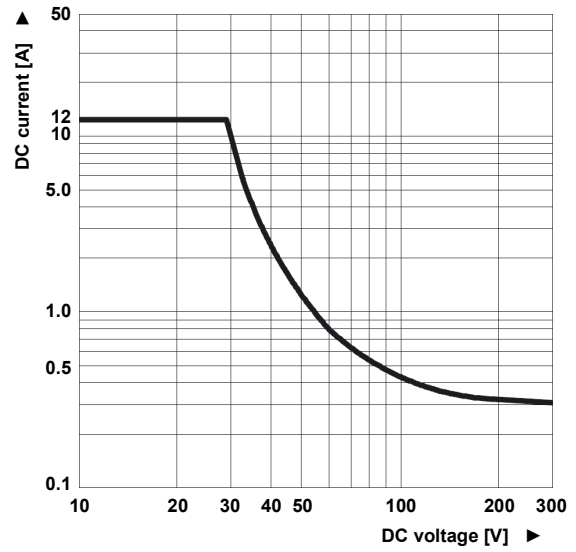
- AZ763-1AE-12D 1 Form A (SPST-N.O.), silver tin oxide, 12 VDC nominal coil voltage, 3.5mm standard spacing, flux tight version
- AZ763R-1CG-24DE 1 Form C (SPDT), gold plated silver nickel, 24 VDC coil, 5.0 mm RIGHT spacing, wash tight version
- AZ763L-1A-230AE 1 Form A (SPST-N.O.), silver nickel, 230 VAC coil, 5.0 mm LEFT spacing, wash tight version

## LIFE EXPECTANCY

Electrical life at 250VAC, resistive load

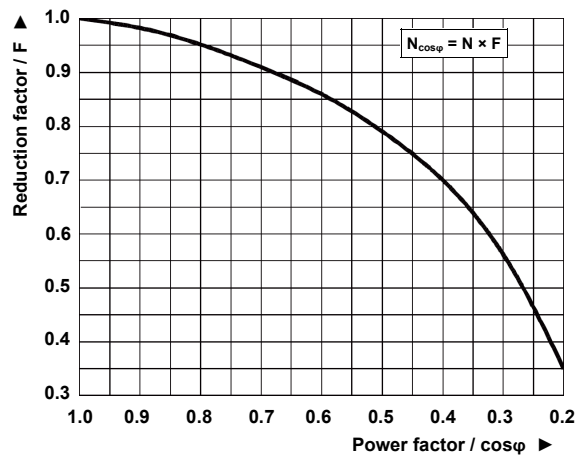


## MAX DC RESISTIVE LOAD BREAKING CAPACITY



## INDUCTIVE LOADS LIFE REDUCTION

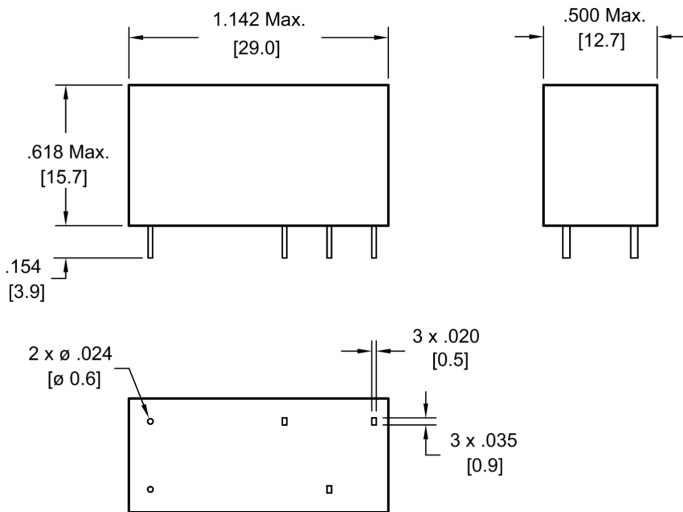
Electrical life reduction factor at inductive AC load



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## MECHANICAL DATA

Dimensions in inches with metric equivalents in parentheses. Tolerance:  $\pm .010$ "



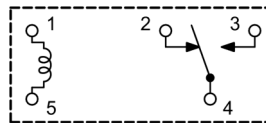
## WIRING DIAGRAMS

Viewed towards terminals.

### 3.5 mm Standard Spacing and 5.0 mm LEFT Spacing



1 Form A

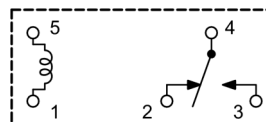


1 Form C

### 5.0 mm RIGHT Spacing



1 Form A



1 Form C

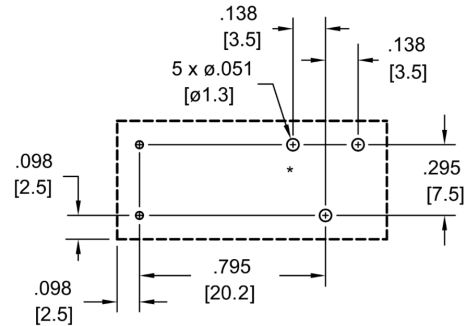
## PC BOARD LAYOUT

Recommendation for PC board layout.

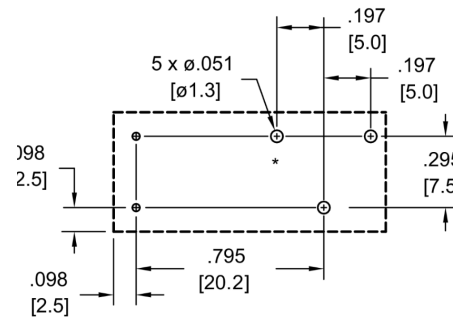
Dimensions in inches with metric equivalents in parentheses. Viewed towards terminals.

\* Note: Pin not used on 1 Form A (SPST-N.O.) contacts

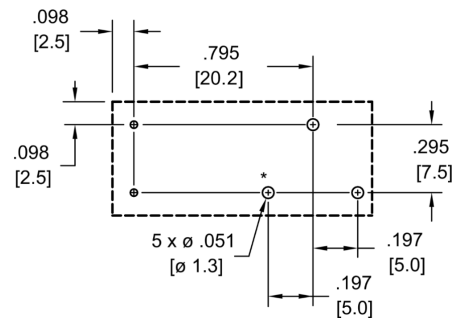
### 3.5 mm Standard Spacing



### 5.0 mm LEFT Spacing



### 5.0 mm RIGHT Spacing



## NOTES

1. Specifications subject to change without notice.
2. All values at 23°C (73°F) unless otherwise stated.
3. Relay may pull in with less than "Must Operate" value.
4. Coil suppression circuits such as diodes, etc. in parallel to the coil will lengthen the release time.

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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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## SITES FOR ZETTLER RELAYS

### NORTH AMERICA

American Zettler, Inc.  
[www.azettler.com](http://www.azettler.com)  
[sales@azettler.com](mailto:sales@azettler.com)

### EUROPE

Zettler Electronics, GmbH  
[www.zettlerelectronics.com](http://www.zettlerelectronics.com)  
[office@zettlerelectronics.com](mailto:office@zettlerelectronics.com)

Zettler Electronics, Poland  
[www.zettlerelectronics.pl](http://www.zettlerelectronics.pl)  
[office@zettlerelectronics.pl](mailto:office@zettlerelectronics.pl)

### CHINA

Zettler Group, China  
[www.zettlercn.com](http://www.zettlercn.com)  
[relay@zettlercn.com](mailto:relay@zettlercn.com)

### ASIA PACIFIC

Zettler Electronics (HK) Ltd.  
[www.zettlerhk.com](http://www.zettlerhk.com)  
[sales@zettlerhk.com](mailto:sales@zettlerhk.com)



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