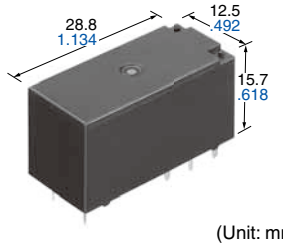
EN60335-1 GWT compliant Low profile: 15.7mm .618inch height 1a/1c 16A power relay

LZ-N RELAYS (ALZN)

Protective construction: Flux-resistant type

New



(Unit: mm inch)

RoHS compliant

FEATURES

1. Low profile type with height of 15.7 mm .618 inch
Slim, low profile type with dimensions of 12.5 (W) × 28.8 (L) × 15.7 (H) mm .492 (W) × 1.134 (L) × .618 (H) inch.

2. High insulation resistance
Superior insulation characteristics have been achieved by maintaining an insulation distance between coil and contacts of at least 10 mm for both creepage distance and clearances. Furthermore, anti-surge voltage is 10 kV and higher. (Supports European reinforced insulation requirement.)

3. Superior heat resistance
Can be used in ambient temperatures up to 85°C 185°F for the class B and 105°C 221°F for the class F.

4. Superior heat resistance and tracking resistance
EN60335-1 GWT compliant

TYPICAL APPLICATIONS

1. Household electrical appliances
2. Office equipment
3. Industrial equipment

ORDERING INFORMATION

ALZN

- Contact arrangement
  1: 1 Form C
  5: 1 Form A
- Rated coil voltage (DC)

Part No.	05	09	12	18	24
Rated coil voltage (V)	5	9	12	18	24

- Coil insulation class
  B: Class B insulation
  F: Class F insulation
- Packing style
  W: Carton packing
- Protective construction
  Nil: Flux-resistant type

Notes: 1. The "W" at the end of the part No. only appears on the inner and outer packaging. It does not appear on the relay itself.
2. Tube packing type is also available. Please consult us.

TYPES

Contact arrangement	Rated coil voltage	Part No.		Standard packing	
		Class B insulation	Class F insulation	Carton	Case
1 Form C	5V DC	ALZN1B05W	ALZN1F05W	100 pcs.	500 pcs.
	9V DC	ALZN1B09W	ALZN1F09W		
	12V DC	ALZN1B12W	ALZN1F12W		
	18V DC	ALZN1B18W	ALZN1F18W		
	24V DC	ALZN1B24W	ALZN1F24W		
1 Form A	5V DC	ALZN5B05W	ALZN5F05W		
	9V DC	ALZN5B09W	ALZN5F09W		
	12V DC	ALZN5B12W	ALZN5F12W		
	18V DC	ALZN5B18W	ALZN5F18W		
	24V DC	ALZN5B24W	ALZN5F24W		

RATING

1. Coil data

Rated coil voltage	Operate voltage *1 (at 20°C 68°F)	Release voltage *1 (at 20°C 68°F)	Rated operating current (±10%, at 20°C 68°F)	Coil resistance (±10%, at 20°C 68°F)	Rated operating power	Max. allowable voltage
5V DC	70%V or less of rated coil voltage (Initial)	10%V or more of rated coil voltage (Initial)	80 mA	63 Ω	400mW	120%V of rated coil voltage (at 85°C 185°F: Class B insulation, at 105°C 221°F: Class F insulation)
9V DC			44.4 mA	203 Ω		
12V DC			33.3 mA	360 Ω		
18V DC			22.2 mA	810 Ω		
24V DC			16.7 mA	1440 Ω		

*1: Square, pulse drive

2. Specifications

Characteristics	Item	Specifications
Contact data	Arrangement	1 Form A, 1 Form C
	Contact resistance (initial)	Max. 100mΩ (By voltage drop 6V DC 1A)
	Contact material	$AgSnO_2$ type
	Contact rating (resistive)	16 A 250 V AC
	Max. switching power (resistive)	4,000 VA
	Max. switching voltage	440 V AC
	Max. switching current	16 A
	Min. switching load (reference value)*1	100 mA 5 V DC
Insulation resistance (initial)		Min. 1,000MΩ (at 500V DC) Measured portion is the same as the case of dielectric strength
Dielectric strength (initial)	Between open contacts	AC 1,000 Vrms for 1 min. (detection current: 10 mA)
	Between contact and coil	AC 5,000 Vrms for 1 min. (detection current: 10 mA)
Surge withstand voltage (initial)*2	Between contact and coil	10,000 V
Operate time (initial)		Max. 15 ms (at rated coil voltage, at 20°C 68°F, without bounce)
Release time (initial)		Max. 5 ms (at rated coil voltage, at 20°C 68°F, without bounce, without diode)
Shock resistance	Functional	100 m/s² (half-sine shock pulse: 11 ms; detection time: 10μs)
	Destructive	1,000 m/s² (half-sine shock pulse: 6 ms)
Vibration resistance	Functional	10 to 55 Hz at double amplitude of 1.5 mm (detection time: 10μs) (Only the NC contact of 1 Form C is 0.82mm)
	Destructive	10 to 55 Hz at double amplitude of 1.5 mm
Expected life	Mechanical	Min. 1×10^6 (at 180 times/min.)
Conditions	Conditions for operation, transport and storage*3	Ambient temperature: –40 to +85°C –40 to +185°F (Class B insulation), –40 to +105°C –40 to +221°F (Class F insulation), Humidity: 5 to 85% R.H. (Not freezing and condensing at low temperature)
Unit weight		Approx. 11 g .39 oz

Notes: *1. This value can change due to the switching frequency, environmental conditions, and desired reliability level, therefore it is recommended to check this with the actual load.
*2. Wave is standard shock voltage of ±1.2×50μs according to JEC-212-1981
*3. For the ambient temperature, please refer to Usage, transport and storage conditions in NOTES.
*Please note that some of the specifications listed above may not comply with overseas standards.

3. Expected electrical life

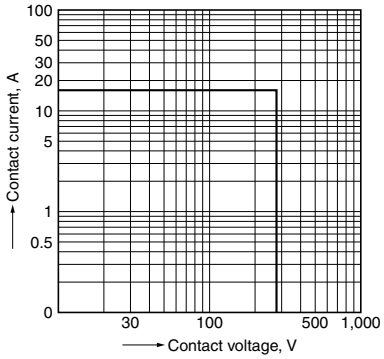
Condition: Resistive, at 20°C 68°F

Type		Switching capacity	Number of operations
1 Form A		16A 250V AC	Min. 1×10^5 (ON:OFF = 1.5s:1.5s)
1 Form C	NO contact	16A 250V AC	Min. 5×10^4 (ON:OFF = 1.5s:1.5s)
	NC contact	16A 250V AC	Min. 1×10^4 (ON:OFF = 1.5s:1.5s)

For the operating ambient temperature, please read the notes

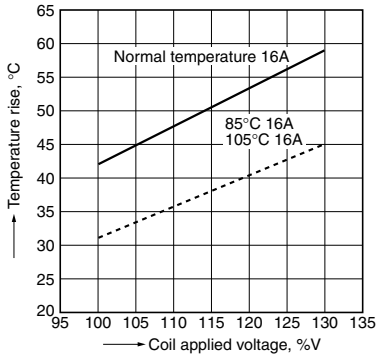
REFERENCE DATA

1. Max. switching capacity (AC resistive load)



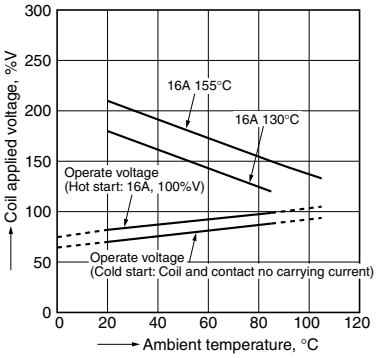
2. Coil temperature rise (Ave.)

Tested sample: ALZN1F12, 6pcs.
Contact current: 16A
Ambient temperature: Normal temperature • 85°C 185°F • 105°C 221°F
Measured portion: inside the coil



3. Ambient temperature characteristics (Ave.)

Tested sample: ALZN1F12, 6pcs.
Contact carrying current: 0A, 16A
Measured portion: inside the coil



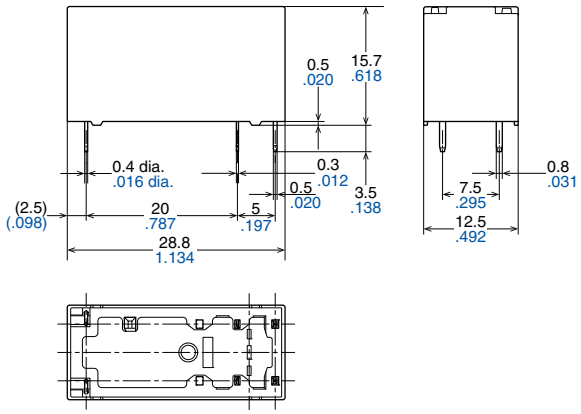
DIMENSIONS (mm inch)

CAD The CAD data of the products with a "CAD" mark can be downloaded from our Website.

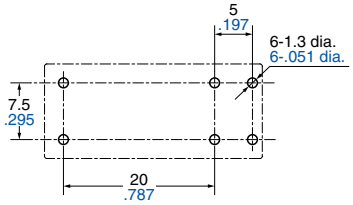
1. 1 Form A type

CAD

External dimensions

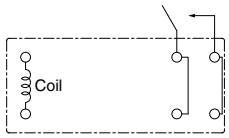


PC board pattern



Tolerance: ±0.1 ±.004

Schematic (Bottom view)

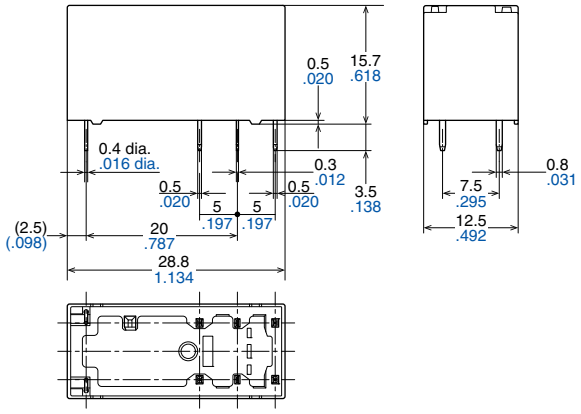


Dimension:	Tolerance
Less than 1mm .039inch:	±0.1 ±.004
Min. 1mm .039inch less than 3mm .118 inch:	±0.2 ±.008
Min. 3mm .118 inch:	±0.3 ±.012

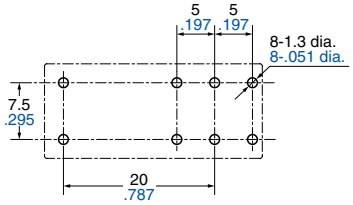
2. 1 Form C type

CAD

External dimensions

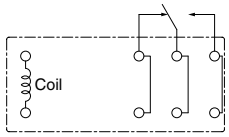


PC board pattern



Tolerance: ±0.1 ±.004

Schematic (Bottom view)



Dimension:	Tolerance
Less than 1mm .039inch:	±0.1 ±.004
Min. 1mm .039inch less than 3mm .118 inch:	±0.2 ±.008
Min. 3mm .118 inch:	±0.3 ±.012

SAFETY STANDARDS

■ UL/C-UL (Recognized)

1 Form A Class B Insulation

File No.	Contact	Contact rating	Cycles	Temperature
E43149	N.O.	16A 277V AC Resistive	10^5	85°C

1 Form A Class F Insulation

File No.	Contact	Contact rating	Cycles	Temperature
E43149	N.O.	25A 277V AC Resistive (Carry only)	10^5	105°C
		17A 277V AC Resistive	10^5	105°C
		16A 277V AC Resistive	10^5	85°C
		16A 277V AC Resistive	3×10^4	105°C

1 Form C Class B Insulation

File No.	Contact	Contact rating	Cycles	Temperature
E43149	N.O.	16A 277V AC Resistive	10^5	85°C
	N.C.	16A 277V AC Resistive	10^4	40°C
		16A 277V AC Resistive	6×10^3	85°C

1 Form C Class F Insulation

File No.	Contact	Contact rating	Cycles	Temperature
E43149	N.O.	16A 277V AC Resistive	10^5	85°C
		16A 277V AC Resistive	3×10^4	105°C
		13A 277V AC Resistive	10^5	85°C
		10A 277V AC Resistive	10^5	105°C
	N.C.	16A 277V AC Resistive	10^4	40°C
		16A 277V AC Resistive	6×10^3	85°C
		16A 277V AC Resistive (Carry only)	10^5	105°C

■ CSA (Certified)

CSA standard certified by C-UL

■ VDE (Certified)

Class B Insulation

File No.	Contact	Contact rating	Cycles	Temperature
40047387	N.O.	16A 250V AC (cosϕ=1.0)	10^5	25°C
		16A 250V AC (cosϕ=1.0)	5×10^4	85°C
		13A 250V AC (cosϕ=1.0)	10^5	85°C
	N.C.	16A 250V AC (cosϕ=1.0)	10^4	25°C

Class F Insulation

File No.	Contact	Contact rating	Cycles	Temperature
40047387	N.O.	16A 250V AC (cosϕ=1.0)	10^5	25°C
		16A 250V AC (cosϕ=1.0)	5×10^4	85°C
		16A 250V AC (cosϕ=1.0)	3×10^4	105°C
		13A 250V AC (cosϕ=1.0)	10^5	85°C
		10A 250V AC (cosϕ=1.0)	10^5	105°C
	N.C.	16A 250V AC (cosϕ=1.0)	10^4	25°C

■ TV rating

1 Form A

File No.	Rating
UL/C-UL: E43149	TV-5

1 Form C (N.O.)

File No.	Rating
UL/C-UL: E43149	TV-5

NOTES

1. For cautions for use, please read “GENERAL APPLICATION GUIDELINES”.

Please contact .....

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