



### FEATURES

**1. Low profile type with height of 15.7 mm**

Slim, low profile type with dimensions of 28.8 (L) × 12.5 (W) × 15.7 (H) mm  
1.134 (L) × .492 (W) × .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. Low operating power**

Power saved with a nominal operating power of only 400 mW.

**5. Conforms to the various safety standards:**

UL, C-UL, VDE approved.

**6. Superior heat resistance and tracking resistance**

EN60335-1 GWT compliant (Tested by VDE) type available

### TYPICAL APPLICATIONS

**1) Household electrical appliances**

TV, CATV, Audio equipment, Microwave ovens, and Heaters, etc.

**2) Office equipment**

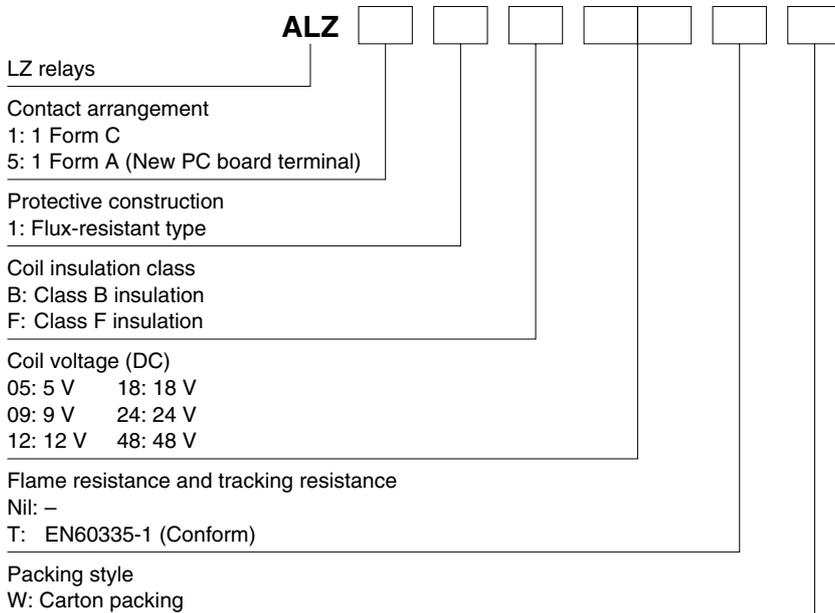
Copy machines, Packaged air conditioners, and Vending machines

**3) Industrial equipment**

Machine tools, Robots, and Temperature controllers

Compliance with RoHS Directive

### ORDERING INFORMATION



Notes: 1. UL, C-UL, VDE approved type is standard.  
2. Sealed type is also available. Please consult us.  
3. If you desire tube packaging, please order without adding the packaging symbol "W" to the end of the part number.

# LZ (ALZ)

## TYPES

Contact arrangement	Coil voltage	Flux-resistant type		Packing style			
		Class B insulation	Class F insulation	Tube packing		Carton packing	
		Part No.	Part No.	Inner carton	Case	Inner carton	Case
1 Form C	5 V DC	ALZ11B05W	ALZ11F05W	20 pcs.	800 pcs.	100 pcs.	500 pcs.
	9 V DC	ALZ11B09W	ALZ11F09W				
	12 V DC	ALZ11B12W	ALZ11F12W				
	18 V DC	ALZ11B18W	ALZ11F18W				
	24 V DC	ALZ11B24W	ALZ11F24W				
	48 V DC	ALZ11B48W	ALZ11F48W				
1 Form A (New PC board terminal)	5 V DC	ALZ51B05W	ALZ51F05W				
	9 V DC	ALZ51B09W	ALZ51F09W				
	12 V DC	ALZ51B12W	ALZ51F12W				
	18 V DC	ALZ51B18W	ALZ51F18W				
	24 V DC	ALZ51B24W	ALZ51F24W				
	48 V DC	ALZ51B48W	ALZ51F48W				

Notes: 1. If you desire tube packaging, please order without adding the packaging symbol "W" to the end of the part number.

2. Carton packing symbol "W" is not marked on the relay.

3. Sealed type is also available. Please consult us.

4. EN60335-1 GWT compliant types available. When ordering, please add suffix "T".

Ex. ALZ51B12T, ALZ51F12TW

## RATING

### 1. Coil data

Nominal coil voltage	Pick-up voltage (at 20°C 68°F)	Drop-out voltage (at 20°C 68°F)	Nominal operating current [±10%] (at 20°C 68°F)	Coil resistance [±10%] (at 20°C 68°F)	Nominal operating power (at 20°C 68°F)	Max. applied voltage (at 20°C 68°F)
5 V DC	Max. 70%V nominal voltage (Initial)	Min. 10%V nominal voltage (Initial)	80 mA	63Ω	400 mW	130%V of nominal voltage
9 V DC			44.4 mA	203Ω		
12 V DC			33.3 mA	360Ω		
18 V DC			22.2 mA	810Ω		
24 V DC			16.7 mA	1,440Ω		
48 V DC			8.3 mA	5,760Ω		

### 2. Specifications

Characteristics	Item	Specifications	
Contact	Arrangement	1 Form C, 1 Form A	
	Contact resistance (Initial)	Max. 100 mΩ (By voltage drop 6V DC 1A)	
	Contact material	AgSnO <sub>2</sub> type	
Rating	Nominal switching capacity (resistive load)	16A 250V AC	
	Max. switching power (resistive load)	4,000V A	
	Max. switching voltage	440V AC	
	Max. switching current	16A	
	Nominal operating power	400mW	
	Min. switching capacity*1	100mA 5V DC	
Electrical characteristics	Insulation resistance (Initial)	Min. 1,000 MΩ (at 500V DC)	
	Breakdown voltage (Initial)	Between open contacts	1,000 Vrms for 1 min. (Detection current: 10mA)
		Between contacts and coil	5,000 Vrms for 1 min. (Detection current: 10mA)
	Temperature rise	Max. 55°C 131°F [with nominal coil voltage and at 16A contact carrying current (resistance method) at 20°C 68°F]	
	Surge breakdown voltage*2 (Between contacts and coil)	10,000 V (Initial)	
	Operate time (at nominal voltage) (at 20°C 68°F)	Max. 15ms (excluding contact bounce time)	
Release time (at nominal voltage) (at 20°C 68°F)	Max. 5ms (excluding contact bounce time, without diode)		
Mechanical characteristics	Shock resistance	Functional	Min. 100 m/s <sup>2</sup> {10G} (Half-wave pulse of sine wave: 11ms; detection time: 10μs)
		Destructive	Min. 1,000 m/s <sup>2</sup> {100G} (Half-wave pulse of sine wave: 6ms)
	Vibration resistance	Functional	10 to 55Hz at double amplitude of 1.5mm (Detection time: 10μs) (Only the N.C. side of 1 Form C is 0.8mm)
		Destructive	10 to 55Hz at double amplitude of 1.5mm
Expected life	Mechanical (at 180 cpm)	Min. 10 <sup>7</sup>	
	Electrical (at 20 cpm)	N.O.: Min. 10 <sup>5</sup> , N.C.: Min. 5 × 10 <sup>4</sup>	
Conditions	Conditions for operation, transport and storage*3, *4	Ambient temperature: -40°C to +85°C -40°F to +185°F (Class B), Humidity: 5 to 85% R.H. (Not freezing and condensing at low temperature)	
	Max. operating speed	20 cpm (at nominal switching capacity)	
Unit weight		Approx. 12 g .42 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  $\pm 1.2 \times 50\mu s$  according to JEC-212-1981.

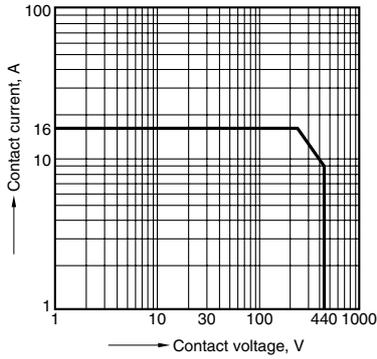
\*3. Class F type is ambient temperature 105°C 221°F.

\*4. The upper operation ambient temperature limit is the maximum temperature that can satisfy the coil temperature rise value. Refer to Conditions for operation, transport and storage mentioned in AMBIENT ENVIRONMENT.

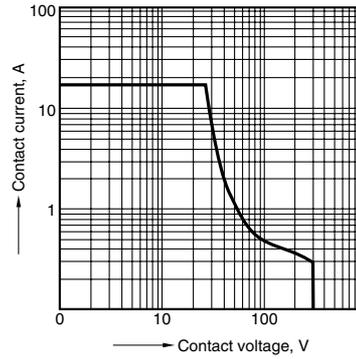
\*Please note that some of the specifications listed above may not comply with overseas standards.

**REFERENCE DATA**

1. Max. switching power (AC resistive load)

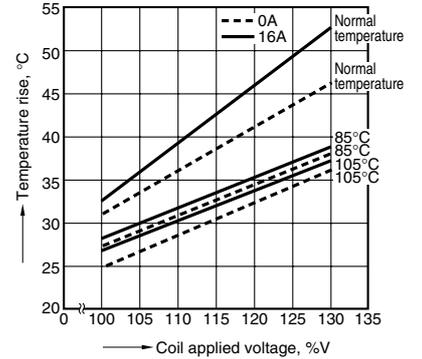


2. Max. switching power (DC resistive load)



3. Coil temperature rise

Sample: ALZ11F12, 5pcs.  
Measured portion: coil inside  
Contact current: 0 A, 16 A



**DIMENSIONS (mm inch)**

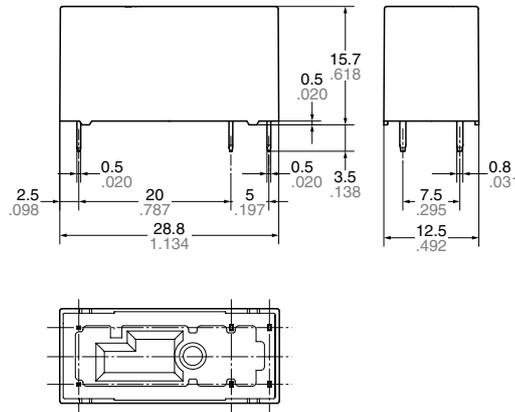
The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://panasonic-electric-works.net/ac>

**1. 1 Form A type (New PC board terminal)**

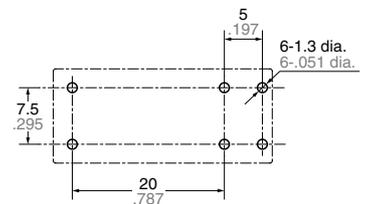
**CAD Data**



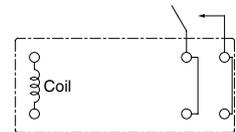
External dimensions



PC board pattern



Schematic (Bottom view)

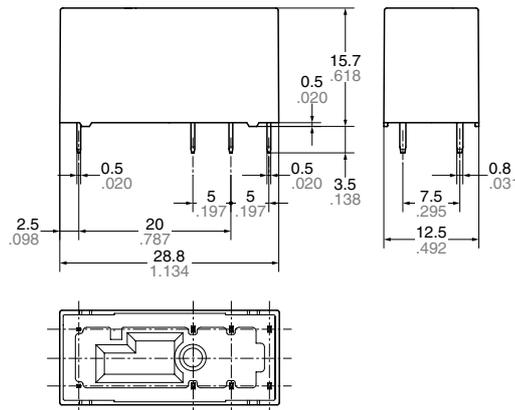


**2. 1 Form C type**

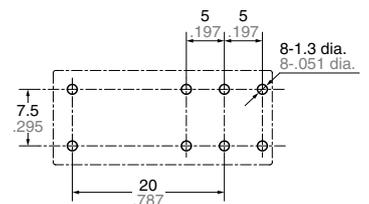
**CAD Data**



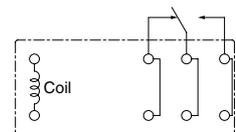
External dimensions



PC board pattern



Schematic (Bottom view)



**For Cautions for Use, see Relay Technical Information.**