

## Type CJN Series

### Key Features

Up to 2000W power rating

Aluminium enclosure

Vibration resistant

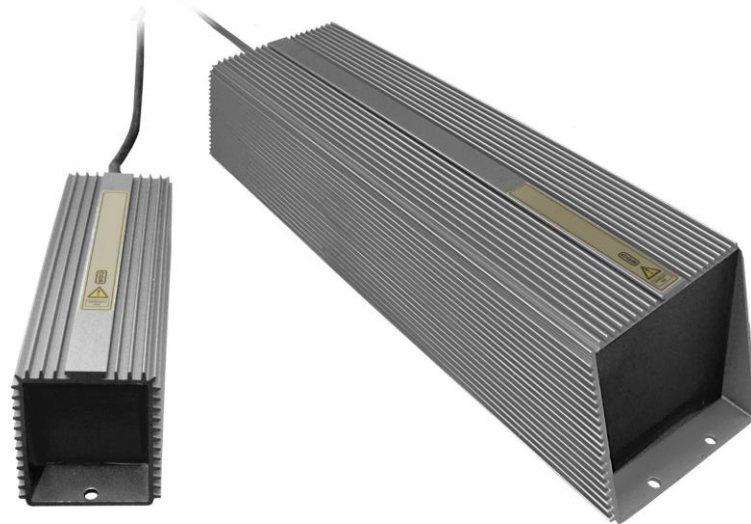
### Applications

Power supplies

Inverters

Servo systems

Electrical systems in difficult environments



The CJN Series of resistors are advantageous to conventional ceramic resistors in the terms of weather proofing, oscillation-resistance and safety. They are widely applied to a range of electrical circuits including power supplies, inverters and servo systems. With easy airtight fitting and the ability to fit a heatsink the resistor is highly suited to challenging environmental conditions.

### Characteristics – Electrical

Type	CJN60	CJN80	CJN100	CJN120	CJN150	CJN200	CJN300
Rated Power (free air) W	60	80	100	120	150	200	300
Ohmic Value (Min.) Ω	2.0	1.0	1.0	1.0	1.0	1.0	1.0
Ohmic Value (Max.) Ω	2.5K	3.0K	4.0K	5.0K	6.0K	7.0K	8.0K
Tolerance	5%						
Temperature Coefficient of Resistance (TCR)	±350PPM/°C						
Limiting element voltage	1kV						
Dielectric Strength	2500VAC						
Insulation resistance	100MΩ min.						
Max. Surface temp at rated power (free air)	206°C	221°C	254°C	267°C	286°C	306°C	334°C
Weight	150g	185g	240g	280g	300g	445g	600g

Operating Voltage= $\sqrt{P \cdot R}$  or Max. operating voltage listed above, whichever is lower.

Overload Voltage= $2.5 \cdot \sqrt{P \cdot R}$  or Max. overload voltage listed above, whichever is lower

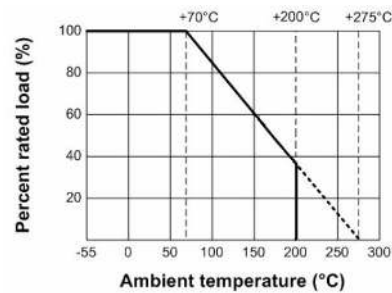
## Characteristics – Electrical (continued)

Type	CJN400	CJN500	CJN800	CJN1000	CJN1200	CJN1500	CJN2000
Rated Power (free air) W	400	500	800	1000	1200	1500	2000
Ohmic Value (Min.) $\Omega$	0.5	0.5	1.0	1.0	1.0	1.0	1.0
Ohmic Value (Max.) $\Omega$	10K	12K	12K	15K	15K	15K	15K
Tolerance	5%						
Temperature Coefficient of Resistance (TCR)	$\pm 350\text{PPM}/^\circ\text{C}$						
Limiting element voltage	1kV						
Dielectric Strength	2500VAC						
Insulation resistance	100M $\Omega$ min.						
Max. Surface temp at rated power (free air)	370 $^\circ\text{C}$	358 $^\circ\text{C}$	311 $^\circ\text{C}$	372 $^\circ\text{C}$	406 $^\circ\text{C}$	419 $^\circ\text{C}$	453 $^\circ\text{C}$
Weight	765g	965g	1.18kg	3.46kg	3.885kg	4.31kg	4.86kg

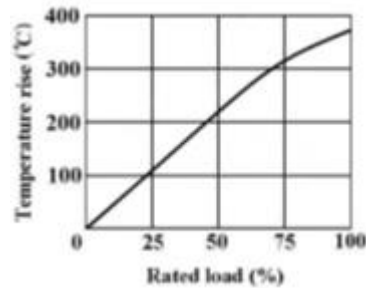
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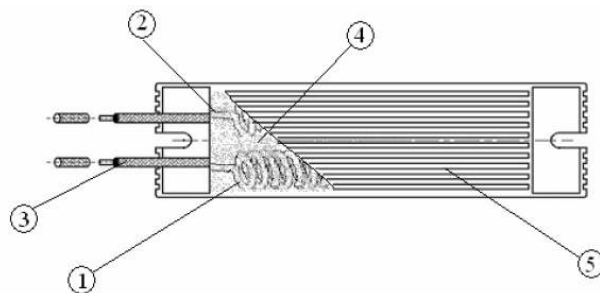
### Derating Curve



### Temperature rise chart



### Construction



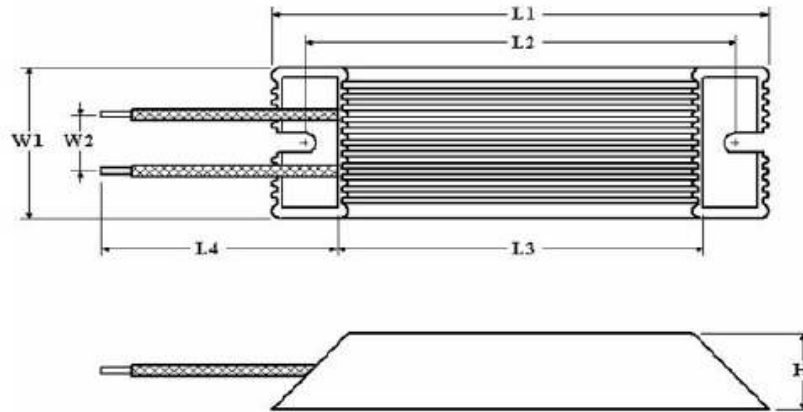
No.	Subpart Name	Material
1	Resistance wire	NiCr or FeCr
2	Crimp	Brass
3	Cable Wire	Single core cable with silicon rubber insulation
4	Cement Filling	Quartz mixed sand
5	Aluminium Case	Aluminium casting

Characteristics	Limits	Test Methods (JIS-C-5201-1)															
Insulation Resistance	Insulation resistance is 100MΩ min.	Resistors shall be clamped in the trough of a 90° metallic V-block or foil method use a metal foil shall be wrapped closely around the body of the resistor. After that shall be tested at DC potential respectively specified in the above list for 60 +10/-0 secs. (Sub-clause 4.6)															
Dielectric Withstand Voltage	No evidence of flashover, mechanical damage, arcing, or insulation breakdown	Resistors shall be clamped in the trough of a 90° metallic V-block or foil method use a metal foil shall be wrapped closely around the body of the resistor. After that shall be tested at AC potential respectively specified in the table 1. for 60 +10/-0 secs. (Sub-clause 4.7)															
Temperature Coefficient	±350 PPM/°C Max.	Natural resistance change per temp. degree centigrade. R2-R1 ----- x10 <sup>6</sup> (PPM/°C) R1(t2-t1) R1: Resistance value at room temperature (t1) R2: Resistance value at room temp. plus 100 °C (t2) (Sub-clause 4.8)															
Short Time Overload	Resistance change rate is ± (2% +0.05Ω) Max. with no evidence of mechanical damage	Permanent resistance change after the application voltage at 5 x Wattage rating for 5 seconds															
Temperature cycling	Resistance change rate is ± (2% +0.05Ω) Max. with no evidence of mechanical damage	Resistance change after continuous 5 cycles for duty shown below: <table border="1" data-bbox="874 1451 1353 1624"> <thead> <tr> <th>Step</th> <th>Temp</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-40°C ±3°C</td> <td>30 mins</td> </tr> <tr> <td>2</td> <td>Room Temp</td> <td>10 – 15 mins</td> </tr> <tr> <td>3</td> <td>+125°C ±2°C</td> <td>30 mins</td> </tr> <tr> <td>4</td> <td>Room Temp</td> <td>10 – 15 mins</td> </tr> </tbody> </table> (Sub Clause 4.19)	Step	Temp	Time	1	-40°C ±3°C	30 mins	2	Room Temp	10 – 15 mins	3	+125°C ±2°C	30 mins	4	Room Temp	10 – 15 mins
Step	Temp	Time															
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Load Life	Resistance change rate is ± (5% +0.05Ω) Max. with no evidence of mechanical damage	Permanent resistance change after 1,000 hours operating at RCWV with duty cycle of (1.5 hours “on”, 0.5 hour “off”) at 70°C ±2°C ambient. (Sub-clause 4.25.1)															

Dimensions:

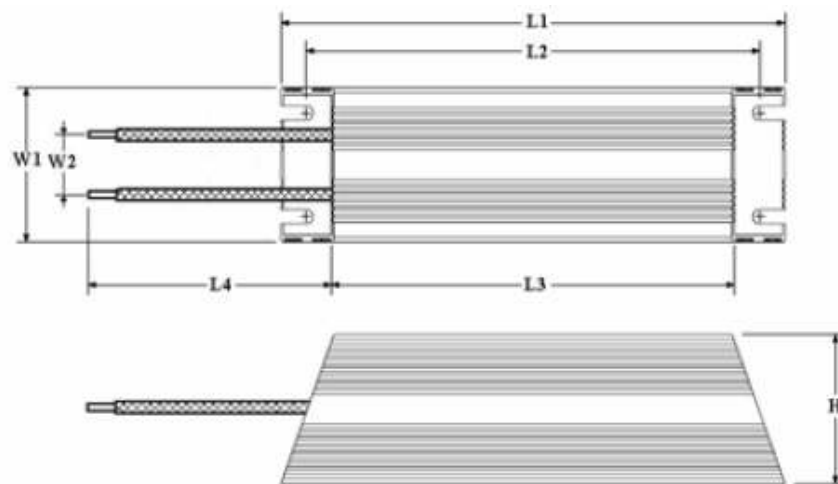
Unit: mm

60W ~ 500W



Type	L1 ± 2	L2 ± 2	L3 ± 2	L4 ± 10	W1 ± 2	W2 ± 5	H ± 2
CJN60	115	100	80	190	40	15	20
CJN80	140	125	105	200	40	15	20
CJN100	140	125	100	240	60	25	30
CJN120	190	175	150	240	40	15	20
CJN150	215	200	175	240	40	15	20
CJN200	165	150	125	255	60	25	30
CJN300	215	200	175	255	60	25	30
CJN400	265	250	225	255	60	25	30
CJN500	335	320	295	255	60	25	30

800W



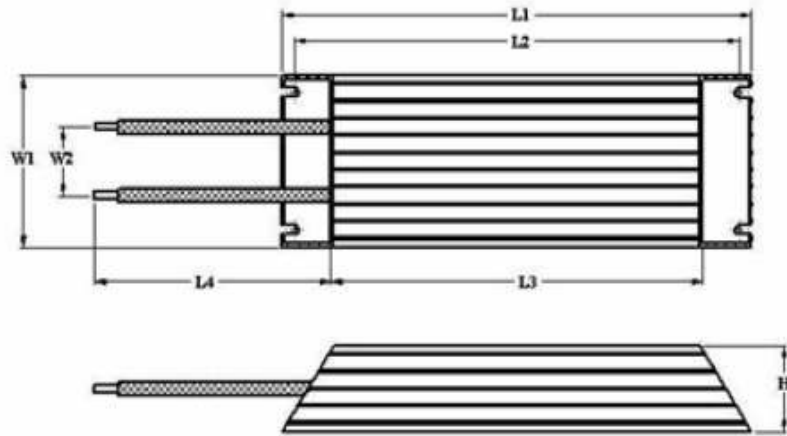
Type	L1 ± 2	L2 ± 2	L3 ± 2	L4 ± 10	W1 ± 2	W2 ± 5	H ± 2
CJN800	400	382	358	255	61	25	59

Dimensions (continued)

Unit:

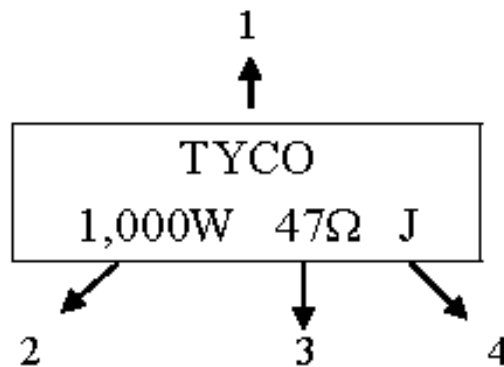
mm

1,000W, 1,200W, 1,500W, 2,000W



Type	L1 ± 2	L2 ± 2	L3 ± 2	L4 ± 10	W1 ± 2	W2 ± 5	H ± 2
CJN1000	400	385	340	255	100	25	50
CJN1200	450	434	390	255	100	25	50
CJN1500	485	470	447	255	100	25	50
CJN2000	550	535	512	255	100	25	50

Marking:



1. Company name or Logo
2. Power Rating (W)
3. Nominal resistance value ( $\Omega$ )
4. Resistance tolerance – J = 5%

Colour of Marking – Black ink

## Environment Related Substance

This product complies to EU RoHS directive, EU PAHs directive, EU PFOS directive and Halogen free.

Ozone layer depleting substances.

Ozone depleting substances are not used in our manufacturing process of this product.

This product is not manufactured using Chloro fluorocarbons (CFCs), Hydrochlorofluorocarbons (HCFCs), Hydrobromofluorocarbons (HBFCs) or other ozone depleting substances in any phase of the manufacturing process.

## Storage Condition

The performance of these products is guaranteed for a year from the date of arrival at your company, provided that they remain packed as they were when delivered and stored at a temperature of  $25^{\circ}\text{C} \pm 10^{\circ}\text{C}$  and a relative humidity of  $60\%RH \pm 10\%RH$ , chemical and dust free atmosphere

Even within the above guarantee periods, do not store these products in the following conditions.

1. In salty air or in air with a high concentration of corrosive gas, such as  $\text{Cl}_2$ ,  $\text{H}_2\text{S}$ ,  $\text{NH}_3$ ,  $\text{SO}_2$ , or  $\text{NO}_2$
2. In direct sunlight

CJN	60	1R0	J	J
<b>Common Part</b>	<b>Power Rating</b>	<b>Resistance Value</b>	<b>Tolerance</b>	<b>Connection</b>
CJN – Aluminium Housed Power resistor	60 60W 80 80W 100 100W Etc.	1 Ω- 1R0 10Ω- 10R 100Ω - 100R 1000Ω (1KΩ)- 1K0	J - ±5%	J - Lead