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# **(BOX) Enclosure of High Energy and High Voltage Resistors**

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## ▶ Product Introduction

### Power grid box high voltage resistors (BOX) quick build dynamic braking resistors and enclosures.

#### Features :

- Excellent heat dissipation,
- High power load capability and durability,
- Low temperature coefficient that is directly proportional.

#### Applications :

- Electric Power Distribution Resistor,
- Suitable for educational modeling applications,
- Load Testing, Industrial Machinery, Dynamic Braking Resistor,
- Instruments and Automation Control Installations.

Token offers power resistors mounted in BOX type enclosures and can be pre-wired for easy installation both at the OEM's factory and at an industrial job-site.

(BOX) series is able to absorb high energy at high voltage while remaining non-inductive (for non-inductance version). Sizes up to 4800 watts are available for shipment depending on the resistance value required. Token engineering staff can assist customers in meeting their design needs. Our production capabilities allow us to design and manufacture some of the most unique resistor packages offered. Custom is standard at Token Electronics. Contact us with your specific needs. Or you can link to Token official website "[High Power Resistors](http://www.token.com.tw)" to get more information.



#### Construction:

- An assembly-type enclosure contains DR (Round-Wound Power Units) series or DQ (Wave-Shape Ribbon-Wound Power Units) series.
- The BOX (grid, screened cover or solid bottom plates) Series offers excellent protection and safety.
- A welded frame construction for large applications is utilized to provide a robust design for resistor mounting in both indoor and outdoor environments.
- The design of Token's BOX Series provides to enclosure unlimited combinations of power wirewound resistor units to meet customer requirements.

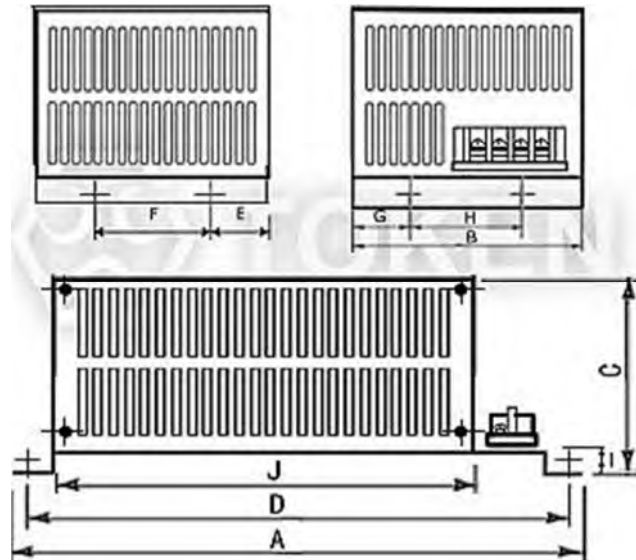
#### Options:

- Terminal blocks, thermal switches, conduit knockouts, fusing, fans, and other customer specified requirements are available on request.
- Accommodates a flexible range of assembly options for convenient utilization and installation. Refer to the DR and DQ features for exact specifications.

## ► BDR Dimensions

### Round-Wound Enclosure Dimensions (BDR 200W - 3200W)

Power Rating	Dimensions (Unit: mm)											Resistance Range( $\Omega$ )
	CASE	A	B	C	D	E	F	G	H	I	J	
200W	A	345	90	76	325	45		43		8	268	5.5~20K $\Omega$
400W	A	345	90	76	325	45		43		8	268	5~40K $\Omega$
400W	B	450	152	100	428	30	90	74		10	355	4.5~40K $\Omega$
800W	B	450	152	100	428	30	90	74		10	355	4~80K $\Omega$
1200W	C	450	300	100	428	74	146	74	146	10	355	3.5~120K $\Omega$
1600W	C	450	300	100	428	74	146	74	146	10	355	3~160K $\Omega$
2000W	D	560	250	195	535	27	190	122		10	420	2.5~200K $\Omega$
2400W	D	560	250	195	535	27	190	122		10	420	2~240K $\Omega$
2800W	D	560	250	195	535	27	190	122		10	420	1.5~280K $\Omega$
3200W	D	560	250	195	535	27	190	122		10	420	1~320K $\Omega$

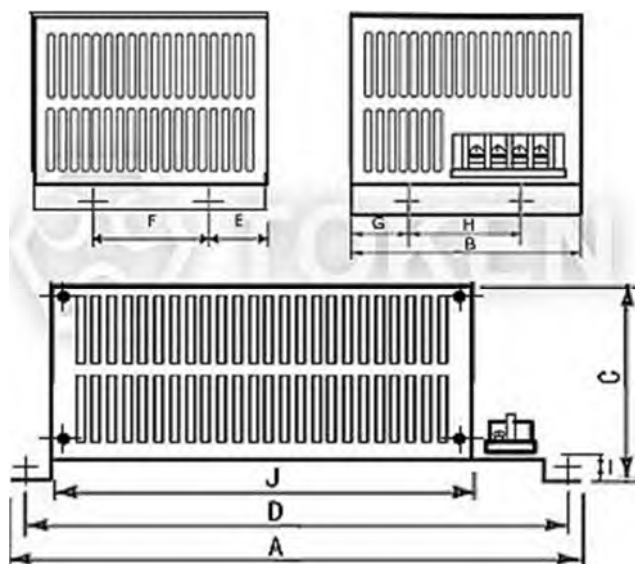


Round-Wound Resistor Enclosure (BDR) Dimensions

## ► BQR Dimensions

### Ribbon-Wound Enclosure Dimensions (BQR 300W - 4800W)

Power Rating	Dimensions (Unit: mm)											Resistance Range(Ω)
	CASE	A	B	C	D	E	F	G	H	I	J	
300W	A	345	90	76	325	45		43		8	268	5.5~30Ω
600W	A	345	90	76	325	45		43		8	268	5~60Ω
600W	B	450	152	100	428	30	90	74		10	355	4.5~60Ω
1200W	B	450	152	100	428	30	90	74		10	355	4~120Ω
1800W	C	450	300	100	428	74	146	74	146	10	355	3.5~180Ω
2400W	C	450	300	100	428	74	146	74	146	10	355	3~240Ω
3000W	D	560	250	195	535	27	190	122		10	420	2.5~300Ω
3600W	D	560	250	195	535	27	190	122		10	420	2~360Ω
4200W	D	560	250	195	535	27	190	122		10	420	1.5~420Ω
4800W	D	560	250	195	535	27	190	122		10	420	1~480Ω



Ribbon-Wound Resistor Enclosure (BQR) Dimensions

- Notice: All dimensions might be changed or modified, please refer to last updating specification.

▶ **Order Codes**

**Order Codes (BOX)**

<b>BDR</b>	<b>2400W</b>	<b>13.6R</b>	<b>K</b>
Part Number	Rated Power (W)	Resistance Value ( $\Omega$ )	Resistance Tolerance (%)
BDR	200W~3200W	Indicates resistance value in units of ohms.	J
BQR	300W~4800W		K
			$\pm 5\%$
			$\pm 10\%$



## ► General Information

### Benefits & Features

Providing design engineers with an economical resistor with high quality performance, Token Electronics offers industry grade power wire wound devices.

Token provide terminal blocks, thermal switches, fusing, fans, junction boxes, screened or solid bottom plates, conduit knockouts, and customer specified requirements. For large applications a welded frame construction is utilized to provide a robust design for power resistor mounting in both indoor and outdoor environments.

Products range from large capacity metal clad, nonflammable fixed and adjustable, wave ribbon wire-wound, slide, starter, box type, to nonflammable flat type. Token extends a complete line for both military and commercial applications.

### Utilization Notes

1. Smoke emitted from non-flammable resistors on initial use in powered circuits is a normal phenomenon and the component can be safely utilized.
2. All resistors manufactured by Token Electronics Industry Corporation comply with the U.S. UL-94 non-flammability test, Class V-0, a continuous combustion period of zero seconds.
3. Never use organic solvents to clean non-flammable resistors.
4. Non-flammable resistors cannot be utilized in oil.
5. Non-flammable resistors cannot be used in high frequency machinery because of the inductance produced by the windings. A suitable type of resistor must be selected. Contact us for details.
6. In applications where resistors are subject to intermittent current surges and spikes, be sure in advance that the components selected are capable of withstanding brief durations of increased load.
7. Do not exceed the recommended usable load. Resistors must use within the rated voltage range to prevent the shortening of service life and/or failure of the wound resistance elements.
8. Minimum load. Resistors must be utilized at 1/10 or more of the rated voltage to prevent poor conductance due to oxidation build-up.
9. Although the hardness exceeds that of a 3H pencil lead, do not nick the resistor coating with screw drivers or other pointed objects.
10. Avoid touching non-flammable resistors in operation; the surface temperature ranges from approximately 350°C ~ 400°C when utilized at the full rated value. Maintaining a surface temperature of 200°C or less will extend resistor service life.
11. Keep temperature from rising by choosing a resistor with a higher rated capacity; do not use a component having the exact load value required. For considerations of safety in extended period applications, the resistor rating should be more than four times higher than the actual wattage involved, but never use a resistor at less than 25% of its rated power.
12. Application and Placement: Wire-wound resistors use different gauges of wire as resistance elements. Sometimes the gauge is extremely thin (finer than a strand of human hair) and very susceptible to breakage in environments containing salts, ash, dust and corrosives. Avoid utilization in such environments. Do not install in dusty areas because the accumulation will cause shorts and poor conductance.

