Version:
January 12, 2017

(AL)
Aluminum Chassis Mount Resistors

Token Electronics Industry Co., Ltd.

Taiwan: No.137, Sec. 1, Zhongxing Rd., Wugu District,
New Taipei City, Taiwan, R.O.C. 24872
Tel: +886 2981 0109 Fax: +886 2988 7487

China: 12F, Zhong Xing Industry Bld., Chuang Ye Road,
Nan Shan District, Shen Zhen City,
Guang Dong, China 518054
Tel: +86 755 26055363; Fax: +86 755 26055365

Web: www.token.com.tw

Email: rfq@token.com.tw

Product Introduction

Low profile aluminum encased wire wound power resistors boost up high energy applications.

Token's flat core winding technology allows for aluminum chassis mount heat sinkable resistor affording a very low profile, and superior thermal transfer characteristics when compared to conventional power wire wound resistors.

(AL) Low Profile Aluminum Encased Series is durable, vibration-proof, dissipates heat well and low temperature coefficient with resistance varying in direct proportion.

The rugged structure, economic price aluminum housed resistor (AL) is easy to utilize and install, and suitable for a wide range applications. Key applications include industrial machinery resistor, load testing resistor, electric power distribution resistors, instruments, and automated control installations.

The (AL) series is RoHS compliant and lead free. For non-standard technical requirements and custom special applications, please contact us to discuss the details, or link to Token official website "High Power Resistors" to get more information.

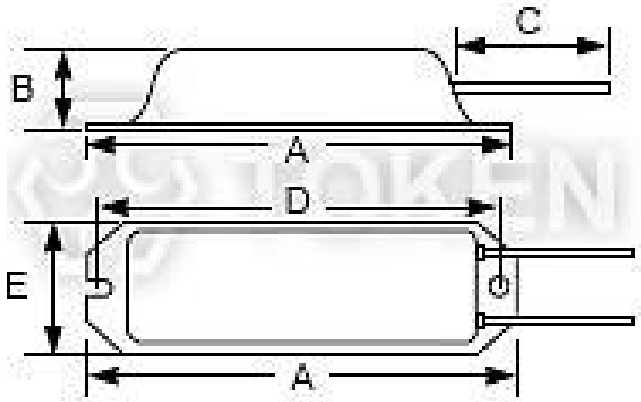
Construction:

- Insulation is applied through a high-temperature process.
- An aluminum encased consists of an alloy metal coil-type resistance element assembled into an aluminum enclosure.
- After high-temperature anodization, the enclosure is filled with a special non-flammable cement paste and hardening.
- Since this component is embedded in the heat-proof cement, it is not affected by external mechanical force, and dusty environments.

ASQ Dimensions

Dimensions (ASQ 60W ~ 120W)

Power Rating	Dimensions (Unit: mm)					Resistance Range(Ω)
	A	B	C	D	E	
60W	100	13	100	90	30	0.1~10K
80W	130	19	100	116	42	0.1~10K
100W	130	19	100	116	42	0.1~10K
120W	130	19	100	116	42	0.1~10K
120W	182	19	100	172	42	0.1~10K

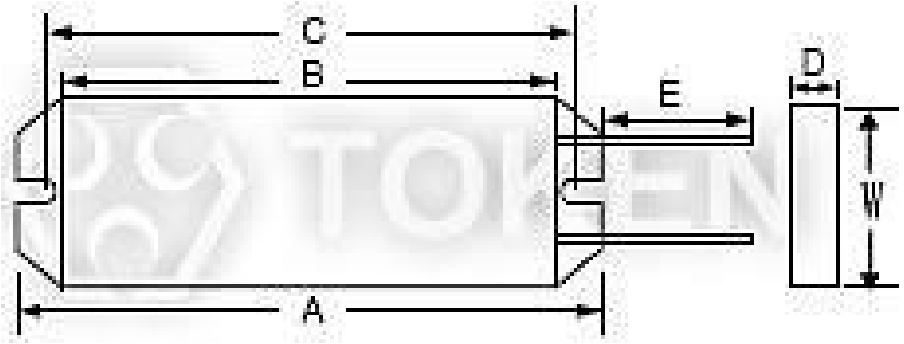


(ASQ 60W ~ 120W) Dimensions

ASP Dimensions

Dimensions (ASP 60W - 150W)

Power Rating	Dimensions (Unit: mm)						Resistance Range(Ω)
	A	B	C	D	E	W	
60W	100	75	85	8	100	45	0.1~10K
80W	120	95	105	8	100	45	0.1~10K
100W	120	95	105	8	100	45	0.1~10K
120W	150	125	135	8	100	45	0.1~10K
150W	215	190	200	8	100	45	0.1~10K

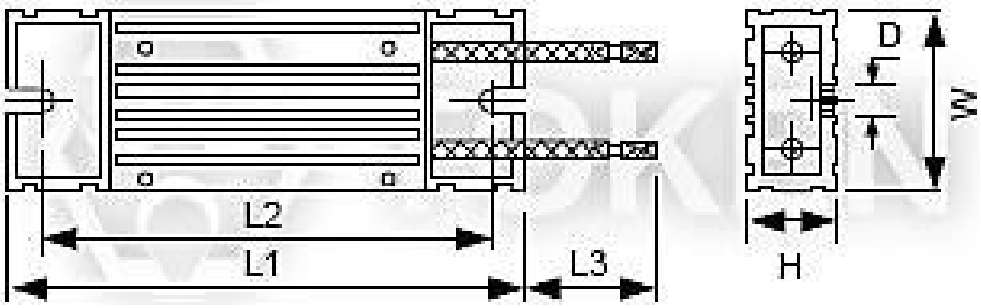


(ASP 60W - 150W) Dimensions

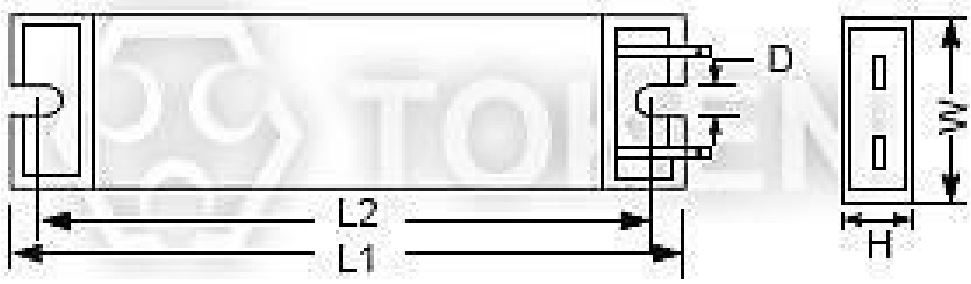
ASZ Dimensions

Dimensions (ASZ 40W ~ 2000W)

Power Rating	Dimensions (Unit: mm)							Resistance Range(Ω)
	W±1.5	H±1.5	L1±2	L2±2	D±0.5	L3±10	TYPE	
40W	40	20	90	75	5.2	300	A	0.1~2K
60W	40	20	115	100	5.2	300	A	0.1~2K
80W	40	20	140	125	5.2	300	A	0.1~2K
100W	40	20	140	125	5.2	300	A	0.1~3K
120W	40	20	185	170	5.2	300	A	0.1~5K
150W	40	20	185	170	5.2	300	A	0.1~5K
200W	60	30	165	150	5.2	300	A	0.1~5K
250W	60	30	165	150	5.2	300	A	0.1~10K
300W	60	30	215	200	5.2	300	A	0.1~10K
400W	60	30	265	250	5.2	300	A	0.1~10K
500W	60	30	335	320	5.2	300	A	0.1~10K
600W	60	30	335	320	5.2	300	A	0.1~10K
800W	60	30	365	350	5.2	300	A	0.1~10K
1000W	70/76/100	45/44/50	335/400	320/385	5.2		B	0.1~10K
1200W	70/76/100	45/44/50	400	385	5.2		B	0.1~10K
1500W	70/76/100	45/44/50	450	435	5.2		B	0.1~10K
1800W	70/76/100	45/44/50	500	485	5.2		B	0.1~10K
2000W	70/76/100	45/44/50	500	485	5.2		B	0.1~10K
2500W	70/76/100	45/44/50	550	535	5.2		B	0.1~10K
3000W	70/76/100	45/44/50	600	585	5.2		B	0.1~10K



(ASZ-A Type) Dimensions



(ASZ-B Type) Dimensions

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

Performance Specifications

Performance Specifications (AL)

Test Item	Test Methods	Characteristics
Resistance tolerance	JIS-C-5202 5-1	Resistance Nominal Tolerance 1≤R 1>R ±5%(J) ±10%(K)
Temperature coefficient	JIS-C-5202 5-2	±400PPM/℃ MAX
Power rating load	JIS-C-5202 5-4	ΔR/R≤ ±(0.5%+0.1Ω) Surface temperature up 350℃ MAX
Short-term overload	JIS-C-5202 5-5 1000% rated power 5 seconds	Free of appearance or structural irregularity ΔR/R≤ ±(2%+0.1Ω)
Insulation resistance	JIS-C-5202 5-6 1000VDC	100MΩ min
Dielectric withstanding voltage	JIS-C-5202 5-7 2000VDC 1 minute	Free of appearance or structural irregularity ΔR/R≤ ±(0.1%+0.05Ω)
Terminal strength	JIS-C-5202 6-1 8kg 30 seconds	Free of appearance or structural irregularity
Resistor strength	JIS-C-5202 6-2 30kg 30 seconds	Free of appearance or structural irregularity
Vibration	JIS-C-5202 6-3 1.5m/m 10 ~ 50 ~ 10 Hz/min X-Y-Z 2 hours each	Free of appearance or structural irregularity Surface coating crack ΔR/R≤ ±(1%+0.05Ω)
Thermal shock	JIS-C-5202 7-3 Room temp 30 minutes ON-55℃ 15 minutes OFF	Resistor free of structural irregularity ΔR/R≤±(2%+0.1Ω)
Humidity	JIS-C-5202 7-5 40℃ 90%RH 240 hours	Free of appearance or structural irregularity Surface coating crack ΔR/R≤±(3%+0.1Ω)
Load life	JIS-C-5202 7-10 90 minutes ON - 30 minutes OFF, 500 hours	Free of appearance or structural irregularity Surface coating crack ΔR/R≤ ±(3%+0.1Ω)
Flame retardation	JIS-C-5202 7-13-3-2 100% - 600% rated power load	US UL-94 flame retardation test V-0 grade noncombustible
Remarks	1. Resistance and resistance tolerance were tested in-house with micro resistance meter. 2. Resistor coating refers to UL-certified data provided by supplier	

Order Codes

Order Codes (AL)

ASQ	400W	20R	K

Part Number	Rated Power (W)	Resistance Value (Ω)	Resistance Tolerance (%)	
ASQ	60W~120W	Indicates resistance value in units of ohms.	J	±5%
ASP	60W~150W		K	±10%
ASZ-A, ASZ-B	40W~2000W			

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℃ ~ 400℃ when utilized at the full rated value. Maintaining a surface temperature of 200℃ 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.