

Version:
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DIRECT

Electronics Tech.

(BWL)

Power Low

Resistance Resistor

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▶ Product Introduction**Direct's low resistance current sensing (BWL) resistor minimizes power consumption.****Features :**

- Low inductance.
- Excellent load life stability.
- Low temperature coefficient.
- Cooler operation for high power to size ratio.
- Proprietary processing technique produces extremely low resistance values

Applications :

- Switching and linear power supplies.
- Notebook power management.
- Power amplifiers.
- Instruments.

In response to demand for more energy efficient products, Direct Electronics has expanded its current sensing series offering with the launch of the BWL series, its lowest resistance value resistor, to minimize power consumption.

The BWL series has been designed for current sensing in power electronic systems and the resistors are available in 0.5W to 10W power ratings, with a wide Ohmic range starting from as low as 0.005Ω.

Products in the economical, low-inductance BWL resistors are axial leads with high temperature mold compound, making them well-suited to the industry trend and are ideal for all types of current sensing applications including switching and linear power supplies, instruments and power amplifiers

In addition, the BWL series utilizes metal strip technology, essential for those involved in constructing devices and circuits for the detection of currents.

Direct's BWL standard series is lead-free and RoHS compliant and can be a replacement for Vishay, IRC, KOA, Panasonic current sense resistor with more competitive price and short lead time. Contact us with your specific needs. Or link to our official website "[Current Sensing Resistors](#)" to get more information.

Material:

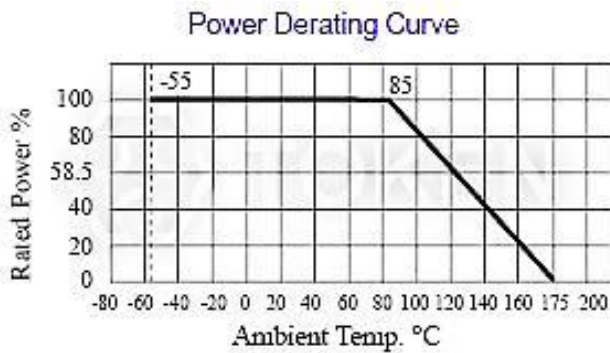
- Encapsulation: High temperature mold compound.
- BWL metal strip technology utilizes manganin.
- Element: Self-supporting nickel-chrome alloy.
- Terminals: Tinned copper.



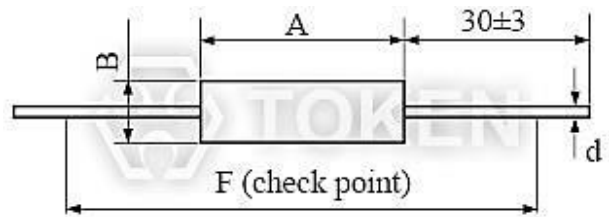
► Technical Specifications & Dimensions

Technical Specifications & Dimensions (BWL)

Type	Rated Watts at 25°C (W)	Resistance Range (Ω)		Tolerance	Dimensions (Unit: mm)			
		Min	Max		A±0.25	ΦB±0.25	Φd	F
BWL-0.5	0.5	0.01	1	±1% ±2% ±5%	7.0	3.0	0.8	27.0
BWL-1	1.0	0.005	2		11.0	3.0	0.8	31.0
BWL-3	3.0	0.005	2		15.0	5.2	0.8	35.0
BWL-4	4.0	0.005	5		18.0	6.5	0.8	38.0
BWL-5	5.0	0.005	1		24.0	8.4	1.0	44.0
BWL-10	10.0	0.01	1		46.5	10.0	1.0	66.0



(BWL) Power Derating Curve



► Electrical Performance

Electrical Performance (BWL)

Test Items	Test Conditions	Specifications
Operating Temp. Range		-55°C ~ 175°C
Insulation Resistance	500V	>1GΩ
Dielectric Withstanding Voltage	500V AC 1 Min.	ΔR ≤ ±0.1%R
Load Life	70°C on~off cycle 1000 Hrs.	ΔR ≤ ±1%R
Moisture-Proof Load Life	40°C 95% RH on~off cycle 21 Hrs.	ΔR ≤ ±0.2%R
Resistance to soldering heat	350°C, 3.5s	ΔR ≤ ±0.1%R
Solderability	235±5°C, 5s(solder bath method)	IEC68-2-20(1968)



Order Codes

Order Codes (BWL)

BWL	-	1W	R01	F	P				
Part Number		Power Rating (W)	Resistance (Ω)	Resistance Tolerance (%)	Package				
		0.5W	0.5	R01	0.01	F	± 1	P	Bulk
		1W	1.0	0R1	0.1	G	± 2		
		3W	3.0	1R	1	J	± 5		
		4W	4.0						
		5W	5.0						
		10W	10.0						

General Information

Your Current Options - Direct Current Sense

As the world becomes more and more technology-driven, the uses for current sensing components will continue to increase. The need for even lower resistance value ranges is already becoming evident, as is the need for these resistors to handle more power. The industry-wide trend is the emergence of smaller and smaller products.

Direct Electronics offers a wide variety of current sensing products from the industry to military standards, such as current sense in Thin-Film / Thick-Film Technology, Bare Element Resistors, and Open Air Shunts. This enables Direct to present an astounding number of possible solutions for any circuit design needs.

Applications of Current Detecting Components

Direct's TCS and CS Series unique form factor provides automotive designers with several advantages. Both TCS and CS Series are ideal for applications involving window lift motors, fuel pump systems, seat belt pretensioners, and pulse width modulator feedback.

The wider resistive element and lower resistance enables higher current to pass through the device. Direct's LRC ultra low Ohmic metal strip chip series provides the inherent ability to flex slightly and offers stress relief during extreme temperature cycling on typical or metal substrates. This LRC series is suitable for switch power supply applications (DC-DC Converter, Charger, and Adaptor) and power management of monitor.

The open air design of bare element resistor LRA and LRB Series provide a far cooler operation by allowing more air flow under the resistive element to keep excess heat from being transmitted to the PC board. They are suitable for high power AC/DC detection of power supply circuit.

Direct axial moulded BWL series provides power rating up to 10 watts and lower resistance 0.005 Ω , is ideal for all types of current sensing applications including switching and linear power supplies, instruments and power amplifiers.

Direct standard current sensing components can be replacement for Vishay, IRC, Ohmite, KOA, Yageo devices with fast delivery and more competitive price. Contact us with your specific needs.

