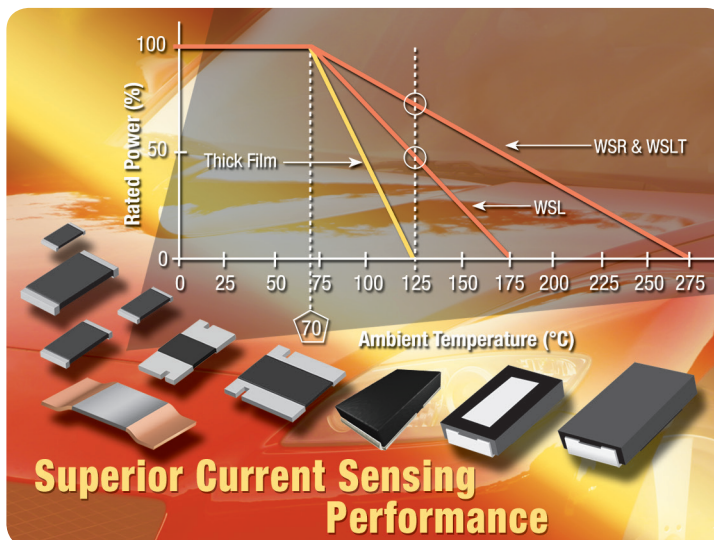




POWER METAL STRIP® RESISTORS

Vishay Dale

Power Metal Strip® Surface-Mount Resistors



INTRODUCTION

Vishay's Power Metal Strip® current sensing resistors combine superior performance in high-temperature applications with a wide range of package sizes and a choice of resistance values from 0.0002 Ω to 1 Ω . These patented, state-of-the-art products deliver overload capabilities equivalent to wirewound devices and temperature coefficients as low as 30 ppm/°C.

Current sensing Power Metal Strip® resistors allow control circuitry to monitor the level of current in a circuit by translating current into a voltage that can be monitored easily. The devices work by resisting the current flow in a circuit to a calibrated level, thus allowing a voltage drop to be detected and monitored by control circuitry. The low resistance values of Power Metal Strip® resistors allow this function to be carried out with exceptional efficiency.

KEY BENEFITS

- Wide range of package sizes (0603 to 5931)
- Wide resistance range (0.0002 Ω to 1 Ω)
- High-temperature performance (up to 275 °C)
- Tight tolerances (down to ± 0.1 %)
- Low temperature coefficients (down to ± 30 ppm/°C)
- Excellent overload capability (equivalent to wirewound)
- Automotive Grade qualified

RESOURCES

















- For technical questions contact ww2bresistors@vishay.com
- Sales Contacts: <http://www.vishay.com/doc?99914>





POWER METAL STRIP® RESISTORS

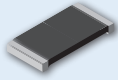


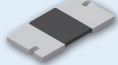
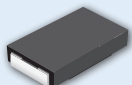
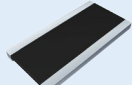
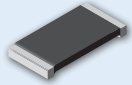


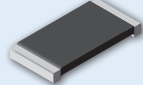
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Global Model	Power Rating	Resistance Range (Ω)	TCR (ppm/ $^{\circ}$ C)	Tolerance	Dimensions	Applications
WSL0603 	0.1 W	0.01 to 0.1	± 75	0.5 %, 1 %	L = 0.060 in. (1.52 mm) W = 0.030 in. (0.76 mm) H = 0.013 in. (0.33 mm)	<ul style="list-style-type: none"> Cell phone battery fuel gages Disk drive motor controls DC/DC converters in cell phones, pagers
WSL0805 	0.125 W	0.005 to 0.0069 0.007 to 0.2	± 110 ± 75	0.5 %, 1 %	L = 0.080 in. (2.03 mm) W = 0.050 in. (1.27 mm) H = 0.013 in. (0.33 mm)	
WSL0603-18 	0.2 W	0.01 to 0.1	± 75	0.5 %, 1 %	L = 0.060 in. (1.52 mm) W = 0.030 in. (0.76 mm) H = 0.013 in. (0.33 mm)	
WSK1206 	0.25 W	0.01 to 0.05	± 75	0.1 % 0.5 %, 1 %	L = 0.126 in. (3.20 mm) W = 0.063 in. (1.60 mm) H = 0.025 in. (0.635 mm)	
WSL0805-18 	0.25 W	0.005 to 0.0069 0.007 to 0.2	± 110 ± 75	0.1 % 0.5 %, 1 %	L = 0.080 in. (2.03 mm) W = 0.050 in. (1.27 mm) H = 0.013 in. (0.33 mm)	
WSL1206 	0.25 W	0.001 to 0.0029 0.003 to 0.0049 0.005 to 0.0069 0.007 to 0.2	± 275 ± 150 ± 110 ± 75	1 % 1 % 0.5 %, 1 % 0.5 %, 1 %	L = 0.126 in. (3.20 mm) W = 0.063 in. (1.60 mm) H = 0.025 in. (0.64 mm)	
WSLP0603 	0.4 W	0.01 to 0.1	± 75	0.5 %, 1 %	L = 0.060 in. (1.52 mm) W = 0.030 in. (0.76 mm) H = 0.013 in. (0.33 mm)	
WSK1206-18 	0.5 W	0.01 to 0.05	± 75	0.1 % 0.5 %, 1 %	L = 0.126 in. (3.20 mm) W = 0.063 in. (1.60 mm) H = 0.025 in. (0.635 mm)	
WSL1206-18 	0.5 W	0.001 to 0.0029 0.003 to 0.0049 0.005 to 0.0069 0.007 to 0.2	± 275 ± 150 ± 110 ± 75	1 % 1 % 0.5 %, 1 % 0.5 %, 1 %	L = 0.126 in. (3.20 mm) W = 0.063 in. (1.60 mm) H = 0.025 in. (0.64 mm)	
WSL2010 	0.5 W	0.001 to 0.0029 0.003 to 0.0049 0.005 to 0.0069 0.007 to 0.5	± 275 ± 150 ± 110 ± 75	1 % 1 % 0.5 %, 1 % 0.5 %, 1 %	L = 0.200 in. (5.08 mm) W = 0.100 in. (2.54 mm) H = 0.025 in. (0.64 mm)	
WSLP0805 	0.5 W	0.01 to 0.05	± 75	0.5 %, 1 %	L = 0.080 in. (2.03 mm) W = 0.050 in. (1.27 mm) H = 0.013 in. (0.33 mm)	
WSK0612 	1.0 W	0.0005, 0.00075, 0.0008 0.001 0.002 0.003, 0.004, 0.005	± 600 ± 275 ± 225 ± 150	1 %	L = 0.060 in. (1.50 mm) W = 0.120 in. (3.05 mm) H = 0.015 in. (0.38 mm)	
WSL0612 	1.0 W	0.001 to 0.003	-275 -225 -150	1 %, 5 %	L = 0.120 in. (3.05 mm) W = 0.060 in. (1.50 mm) H = 0.015 in. (0.381 mm)	
WSLP1206 	1.0 W	0.001 to 0.0029 0.003 to 0.0049 0.005 to 0.0069 0.007 to 0.05	± 275 ± 150 ± 110 ± 75	1 % 1 % 0.5 %, 1 % 0.5 %, 1 %	L = 0.126 in. (3.20 mm) W = 0.063 in. (1.60 mm) H = 0.025 in. (0.64 mm)	
WSLP0805-18 	1.0 W	0.005 to 0.01	± 110 ± 75	1 %, 5 %	L = 0.080 in. (2.03 mm) W = 0.050 in. (1.27 mm) H = 0.013 in. (0.330 mm)	
WSL2010-18 	1.0 W	0.001 to 0.0029 0.003 to 0.0049 0.005 to 0.0069 0.007 to 0.5	± 275 ± 150 ± 110 ± 75	1 % 1 % 0.5 %, 1 % 0.5 %, 1 %	L = 0.200 in. (5.08 mm) W = 0.100 in. (2.54 mm) H = 0.025 in. (0.64 mm)	



POWER METAL STRIP® RESISTORS












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Global Model	Power Rating	Resistance Range (Ω)	TCR (ppm/°C)	Tolerance	Dimensions	Applications
WSL2512 	1.0 W	0.0005 to 0.00099 0.001 to 0.0029 0.003 to 0.0049 0.005 to 0.0069 0.007 to 0.5	± 400 ± 275 ± 150 ± 110 ± 75	1 % 1 % 1 % 0.5 %, 1 % 0.5 %, 1 %	L = 0.250 in. (6.35 mm) W = 0.125 in. (3.18 mm) H = 0.025 in. (0.64 mm)	<ul style="list-style-type: none"> Li-Ion battery management DC/DC converters in switching power supplies VRMs in notebooks PCs Disk drive motor controls Automotive controls for body and powertrain
WSLT2010-18 	1.0 W	0.01 to 0.5	± 75	0.5 %, 1 %	L = 0.200 in. (5.08 mm) W = 0.100 in. (2.54 mm) H = 0.025 in. (0.64 mm)	<ul style="list-style-type: none"> High temperature (+275 °C) Automotive controls for body and powertrain
WSLT2512 	1.0 W	0.01 to 0.5	± 75	0.5 %, 1 %	L = 0.250 in. (6.35 mm) W = 0.125 in. (3.18 mm) H = 0.025 in. (0.64 mm)	<ul style="list-style-type: none"> Down-hole oil well monitor / testing
WSK2512 	1.0 W	0.0005 to 0.00099 0.001 to 0.0029 0.003 to 0.0049 0.005 to 0.2	± 350 ± 250 ± 75 ± 35	1 % 0.5 %, 1 % 0.5 %, 1 % 0.5 %, 1 %	L = 0.250 in. (6.35 mm) W = 0.125 in. (3.18 mm) H = 0.025 in. (0.64 mm)	<ul style="list-style-type: none"> DC/DC converters in switching power supplies VRMs in notebooks, desktop PCs Instrumentation
WSR2 	2.0 W	0.001 to 0.0019 0.002 to 0.0029 0.003 to 0.0039 0.004 to 0.0049 0.005 to 0.0099 0.01 to 1.0	± 750 ± 600 ± 450 ± 300 ± 110 ± 75	1 % 1 % 1 % 1 % 0.5 %, 1 % 0.5 %, 1 %	L = 0.455 in. (11.56 mm) W = 0.275 in. (6.98 mm) H = 0.095 in. (2.41 mm)	<ul style="list-style-type: none"> DC/DC converters in switching power supplies VRMs in notebooks, desktop PCs Instrumentation Automotive controls for body and powertrain
WSL1020 	2.0 W	0.001 to 0.006	± 175	0.5 %, 1 % 1 %, 5 %	L = 0.200 in. (5.08 mm) W = 0.060 in. (1.50 mm) H = 0.015 in. (0.381 mm)	<ul style="list-style-type: none"> Li-Ion battery management DC/DC converters in switching power supplies VRMs in notebooks PCs Disk drive motor controls Automotive controls for body and powertrain
WSLP2010 	2.0 W	0.001 to 0.0029 0.003 to 0.0049 0.005 to 0.0069 0.007 to 0.01	± 275 ± 150 ± 110 ± 75	1 % 1 % 0.5 %, 1 % 0.5 %, 1 %	L = 0.200 in. (5.08 mm) W = 0.100 in. (2.54 mm) H = 0.025 in. (0.635 mm)	<ul style="list-style-type: none"> Li-Ion battery management DC/DC converters in switching power supplies VRMs in notebooks, desktop PCs Automotive controls for body and powertrain
WSL2512-18 	2.0 W	0.0005 to 0.00099 0.001 to 0.0029 0.003 to 0.0049 0.005 to 0.0069 0.007 to 0.04	± 400 ± 275 ± 150 ± 110 ± 75	1 % 0.5 %, 1 % 0.5 %, 1 % 0.5 %, 1 %	L = 0.250 in. (6.35 mm) W = 0.125 in. (3.18 mm) H = 0.025 in. (0.64 mm)	<ul style="list-style-type: none"> Li-Ion battery management DC/DC converters in switching power supplies VRMs in notebooks, desktop PCs Automotive controls for body and powertrain
WSL2816 	2.0 W	0.002 to 0.0029 0.003 to 0.0049 0.005 to 0.0069 0.007 to 0.1	± 275 ± 150 ± 110 ± 75	1 % 0.5 %, 1 % 0.5 %, 1 % 0.5 %, 1 %	L = 0.280 in. (7.10 mm) W = 0.165 in. (4.20 mm) H = 0.020 in. (0.50 mm)	<ul style="list-style-type: none"> Automotive controls for body and powertrain
WSLP2512 	3.0 W	0.0005 to 0.00099 0.001 to 0.0029 0.003 to 0.0049 0.005 to 0.0069 0.007 to 0.01	± 400 ± 275 ± 150 ± 110 ± 75	1 % 1 % 0.5 %, 1 % 0.5 %, 1 % 0.5 %, 1 %	L = 0.250 in. (6.35 mm) W = 0.125 in. (3.18 mm) H = 0.025 in. (0.635 mm)	<ul style="list-style-type: none"> Li-Ion battery management DC/DC converters in switching power supplies VRMs in notebooks PCs Disk drive motor controls Automotive controls for body and powertrain



POWER METAL STRIP® RESISTORS


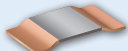
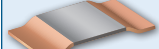
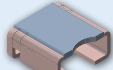
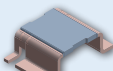
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Global Model	Power Rating	Resistance Range (Ω)	TCR (ppm/°C)	Tolerance	Dimensions	Applications
WSL2726 	3.0 W	0.0003, 0.0005, 0.001 0.002, 0.003 0.004, 0.005	± 75	1 %	L = 0.272 in. (6.9 mm) W = 0.260 in. (6.6 mm) H = 0.117 in. (3.0 mm)	<ul style="list-style-type: none"> DC/DC converter in switching power supplies Instrumentation Automotive controls for EHPS / EPS / EPAS and brushless DC motors
WSL4026 	3.0 W	0.0003, 0.0005, 0.001 0.002, 0.003 0.004, 0.005	± 75	1 %	L = 0.400 in. (10.1 mm) W = 0.260 in. (6.6 mm) H = 0.117 in. (3.0 mm)	<ul style="list-style-type: none"> DC/DC converters in switching power supplies VRMs in notebooks, desktop PCs Automotive controls for EHPS / EPS / EPAS and brushless DC motors
WSL3637 	3.0 W	0.001 to 0.0029 0.003 to 0.01	± 75 ± 50	0.5 %, 1 % 0.5 %, 1 %	L = 0.360 in. (9.14 mm) W = 0.370 in. (9.40 mm) H = 0.025 in. (0.64 mm)	<ul style="list-style-type: none"> DC/DC converters in switching power supplies VRMs in notebooks, desktop PCs Automotive controls for EHPS / EPS / EPAS and brushless DC motors
WSL3921 	3.0 W	0.0003, 0.0005, 0.001 0.002, 0.003, 0.004	± 175 ± 75	1 %, 5 %	L = 0.394 in. (10.0 mm) W = 0.205 in. (5.20 mm) H = 0.020 in. (0.50 mm)	<ul style="list-style-type: none"> High temperature (+275 °C) Automotive controls for EHPS / EPS / EPAS and brushless DC motors Down-hole oil well monitor / testing
WSLT3921 	3.0 W	0.0005 0.001, 0.002, 0.003, 0.004	± 175 ± 75	1 %, 5 %	L = 0.394 in. (10.0 mm) W = 0.205 in. (5.20 mm) H = 0.020 in. (0.50 mm)	<ul style="list-style-type: none"> DC/DC converters in switching power supplies VRMs in notebooks, desktop PCs Instrumentation Automotive controls for body and powertrain
WSR3 	3.0 W	0.001 to 0.0019 0.002 to 0.0029 0.003 to 0.0039 0.004 to 0.0049 0.005 to 0.0099 0.01 to 0.2	± 750 ± 600 ± 450 ± 300 ± 110 ± 75	1 % 1 % 1 % 1 % 0.5 %, 1 % 0.5 %, 1 %	L = 0.455 in. (11.56 mm) W = 0.275 in. (6.98 mm) H = 0.095 in. (2.41 mm)	<ul style="list-style-type: none"> High temperature (+275 °C) DC/DC converter in switching power supplies Instrumentation Automotive controls for EHPS / EPS / EPAS and brushless DC motors
WSLT2726 	3.0 W	0.002, 0.003 0.004, 0.005	± 75	1 %	L = 0.272 in. (6.9 mm) W = 0.260 in. (6.6 mm) H = 0.117 in. (3.0 mm)	<ul style="list-style-type: none"> DC/DC converters in switching power supplies VRMs in notebooks, desktop PCs Instrumentation Automotive controls for body and powertrain
WSLT4026 	3.0 W	0.002, 0.003 0.004, 0.005	± 75	1 %	L = 0.400 in. (10.1 mm) W = 0.260 in. (6.6 mm) H = 0.117 in. (3.0 mm)	<ul style="list-style-type: none"> DC/DC converters in switching power supplies VRMs in notebooks, desktop PCs Automotive controls for EHPS / EPS / EPAS and brushless DC motors
WSL5931 	5.0 W	0.0002 0.0003, 0.0005 0.001, 0.002, 0.003	± 225 ± 175 ± 75	1 %, 5 %	L = 0.591 in. (15.0 mm) W = 0.305 in. (7.75 mm) H = 0.020 in. (0.50 mm)	<ul style="list-style-type: none"> High temperature (+275 °C) Automotive controls for EHPS / EPS / EPAS and brushless DC motors Down-hole oil well monitor/testing
WSLT5931 	5.0 W	0.0003, 0.0005 0.001, 0.002 0.003	± 175 ± 75	1 %, 5 %	L = 0.591 in. (15.0 mm) W = 0.305 in. (7.75 mm) H = 0.020 in. (0.50 mm)	<ul style="list-style-type: none"> DC/DC converters in switching power supplies VRMs in notebooks, desktop PCs Instrumentation Automotive controls for body and powertrain
WSR5 	5.0 W	0.001 to 0.0019 0.002 to 0.0029 0.003 to 0.0039 0.004 to 0.0049 0.005 to 0.0099 0.01 to 0.3	± 750 ± 600 ± 450 ± 300 ± 110 ± 75	1 % 1 % 1 % 1 % 1 % 0.5 %, 1 %	L = 0.455 in. (11.56 mm) W = 0.275 in. (6.98 mm) H = 0.095 in. (2.41 mm)	<ul style="list-style-type: none"> High temperature (+275 °C) Automotive controls for EHPS / EPS / EPAS and brushless DC motors Down-hole oil well monitor/testing



POWER METAL STRIP® RESISTORS

Vishay Dale

Global Model	Power Rating	Resistance Range (Ω)	TCR (ppm/°C)	Tolerance	Dimensions	Applications
WSHM2818 	7.0 W	0.001 to 0.00599 0.006 to 0.1	± 200 ± 75	1.0 %, 5.0 %	L = 0.280 in. (7.10 mm) W = 0.180 in. (4.60 mm) H = 0.059 in. (1.50 mm) max.	<ul style="list-style-type: none"> DC/DC converters in switching power supplies VRMs in notebooks, desktop PCs Automotive controls for EHPS / EPS / EPAS and brushless DC motors
WSLP3921 	5.0 W 9.0 W	0.002, 0.003, 0.004 0.0002, 0.0003, 0.0005, 0.001	± 175 ± 75 ± 75	1 %, 5 %	L = 0.394 in. (10.0 mm) W = 0.205 in. (5.20 mm) H = 0.020 in. (0.50 mm)	<ul style="list-style-type: none"> DC/DC converters in switching power supplies VRMs in notebooks, desktop PCs Automotive controls for EHPS / EPS / EPAS and brushless DC motors
WSLP5931 	7.0 W 10.0 W	0.001, 0.002, 0.003 0.0002, 0.0003, 0.0005	± 175 ± 75	1 %, 5 %	L = 0.591 in. (15.0 mm) W = 0.305 in. (7.75 mm) H = 0.020 in. (0.50 mm)	<ul style="list-style-type: none"> Automotive controls for EHPS / EPS / EPAS and brushless DC motors
WSLP2726 	5.0 W 7.0 W	0.002 0.0005, 0.001	± 75	1 %, 5 %	L = 0.272 in. (6.9 mm) W = 0.260 in. (6.6 mm) H = 0.117 in. (3.0 mm)	<ul style="list-style-type: none"> DC/DC converter in switching power supplies Instrumentation Automotive controls for EHPS / EPS / EPAS and brushless DC motors
WSLP4026 	5.0 W 7.0 W	0.002 0.0005, 0.001	± 75	1 %, 5 %	L = 0.400 in. (10.1 mm) W = 0.260 in. (6.6 mm) H = 0.117 in. (3.0 mm)	<ul style="list-style-type: none"> Automotive controls for EHPS / EPS / EPAS and brushless DC motors

Applications

Industrial

- Power supplies
- Power tools
- Bar code scanners
- HVAC
- Other current detection

Consumer Goods

- Home electronics
- White goods
- Gaming systems
- Lighting controls
- Video cameras
- Television

Automotive

- Engine controls
- Anti-lock brakes
- Airbag

Automotive

- Traction controls
- Multimedia
- Climate controls
- Electronic power steering
- Electric/hybrid vehicles

Medical and Instrumentation

- Monitoring systems
- Defibrillators
- Implantables
- Electronic scales
- Diagnostic equipment

Telecom

- Cell phones
- Modems
- Pagers

Telecom

- Base stations
- Bluetooth
- Switching circuits

Military and Aerospace

- Guidance systems
- Satellites
- Missiles
- Surveillance equipment

Computer

- DC/DC converter
- Disk drives
- Power supplies
- Graphic cards
- PCMCIA
- Li-Ion battery management