

**Power Metal Plate™ Current Sense Resistors,  
Low Value (5 mΩ to 500 mΩ), Surface-Mount, High Power**



**KEY BENEFITS**

- The WFM / WFMB resistor has a wide resistance range of 5 mΩ to 500 mΩ and a power capability up to 3 W

**APPLICATIONS**

- Automotive:
  - Electronic controls (engine controls, climate controls, anti-lock brakes, etc.)
  - Brushless DC motor controls (electronic power steering, electric – water pump / oil pump / air conditioning / etc.)
  - Electric and hybrid controls (battery management)
- Industrial:
  - Oil / gas well drilling (down-hole test / measurement equipment)
  - Air conditioning / heat pump (inverter control)
- Consumer:
  - Air conditioning / heat pump (inverter control)
  - White-goods (inverter control)
- Computer:
  - DC/DC converter, VRMs for servers
  - Power management / safety

**RESOURCES**

- Datasheet: WFM - [www.vishay.com/ppg?30387](http://www.vishay.com/ppg?30387)
- For technical questions contact [ww2bresistors@vishay.com](mailto:ww2bresistors@vishay.com)
- Material categorization: for definitions, please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



## Power Metal Plate™ Current Sense Resistors, Low Value (5 mΩ to 500 mΩ), Surface-Mount, High Power



### FEATURES

- 2010 and 2512 size package
- Ideal for all types of current sensing and pulse applications including switching and linear power supplies, instruments, power amplifiers, shunts, power inverters, and battery management
- Proprietary processing technique produces low resistance values (5 mΩ to 500 mΩ)
- Solid metal manganese-copper and nickel-chromium-aluminum alloy resistive element with low TCR (< 20 ppm/°C)
- Very low inductance 0.5 nH to 5 nH
- Low thermal EMF (< 3 μV/°C)
- AEC-Q200 qualified <sup>(1)</sup>
- PATENT(S): [www.vishay.com/patents](http://www.vishay.com/patents)
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT

HALOGEN  
**FREE**

**GREEN**  
(5-2008)

### Note

<sup>(1)</sup> Flame retardance test may not be applicable to some resistor technologies

STANDARD ELECTRICAL SPECIFICATIONS					
GLOBAL MODEL	SIZE	POWER RATING <sup>(1)</sup> W	TOLERANCE %	RESISTANCE VALUE RANGE Ω	WEIGHT (typical) g/1000 pieces
WFMA2010	2010	2.0 at 110 °C	± 1.0	0.005 to 0.0329	32
WFMB2010	2010	2.0 at 110 °C	± 1.0	0.033 to 0.500	32
WFMA2512	2512	3.0 at 95 °C	± 1.0	0.010 to 0.0329	41
WFMB2512	2512	3.0 at 95 °C	± 1.0	0.033 to 0.500	41

### Note

<sup>(1)</sup> Terminal temperature

GLOBAL PART NUMBER INFORMATION																	
Global Part Numbering example: WFMB2512R5000FEA																	
W	F	M	B	2	5	1	2	R	5	0	0	0	F	E	A		
GLOBAL MODEL (3 digits)	ELEMENT MATERIAL (1 digit)			CASE SIZE (4 digits)				RESISTANCE VALUE <sup>(1)</sup> (5 digits)			TOLERANCE CODE (1 digit)		PACKAGING CODE <sup>(2)</sup> (2 digits)		SPECIAL (2 digits)		
WFM	A = CuMn B = NiCrAl			2010 2512				L = mΩ* R = decimal 5L000 = 0.005 Ω R0100 = 0.01 Ω  * Use "L" for resistance values < 0.01 Ω			F = ± 1.0 % J = ± 5.0 %		EA = lead (Pb)-free, tape / reel EK = lead (Pb)-free, bulk		Dash numbers 1 thru 99 as applicable		

### Notes

- <sup>(1)</sup> Resistance values available according to WSL decade values ([www.vishay.com/doc?30117](http://www.vishay.com/doc?30117))
- <sup>(2)</sup> Packaging code: EB (lead (Pb)-free) is a non-standard packaging code designating 1000 piece reels. This non-standard packaging code is identical to our standard EA (lead (Pb)-free), except that it has a package quantity of 1000 pieces

PATENT(S): [www.vishay.com/patents](http://www.vishay.com/patents)

This Vishay product is protected by one or more United States and international patents.