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Vishay Dale

Power Metal Strip[®] Battery Shunt Resistor W/Molded Enclosure Very Low Value (50 $\mu\Omega$, 100 $\mu\Omega$, 125 $\mu\Omega$, and 500 $\mu\Omega$)



DESIGN TOOLS (click logo to get started)



FEATURES

- High power to resistor size ratio
- Proprietary processing technique produces extremely low resistance values
- All welded construction
- Solid metal manganese-copper alloy or nickel-chrome alloy resistive element with low TCR (< 20 ppm/°C)



RoHS

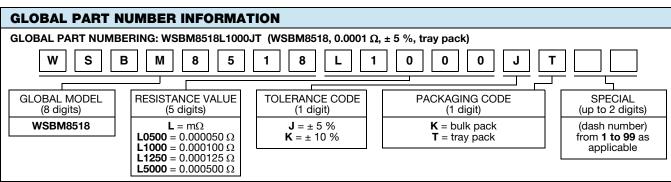
- Molded enclosure allows for easy PCB connection
- Includes 4-pin male connector that mates with a Molex type MX150 #33472-4001 female connector
- Very low inductance (< 5 nH)
- Low thermal EMF (as low as < 1 μV/°C)
- Material categorization: for definitions of compliance please see www.vishav.com/doc?99912

STANDARD ELECTRICAL SPECIFICATIONS								
GLOBAL MODEL	SIZE	POWER RATING P _{70 °C} W	TOLERANCE ± %	RESISTANCE VALUE RANGE Ω	RESISTANCE VALUES CURRENTLY AVAILABLE $^{(1)}$ Ω	WEIGHT (typical) g		
WSBM8518	8518	36	5, 10	50μ to 500μ	50µ, 100µ, 125µ	50μ = 61.3, 100μ / 125u = 59.8		
WSBM8518	8518	25	5, 10	50μ to 500μ	500µ	56.8		

Note

⁽¹⁾ Other values may be available, contact factory

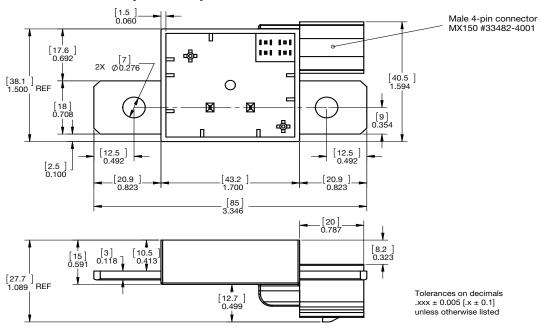
TECHNICAL SPECIFICATIONS						
PARAMETER	UNIT	RESISTOR CHARACTERISTICS				
		\pm 200 for 50 μ Ω				
Temperature coefficient	ppm/°C	\pm 175 for 100 μ Ω / 125 μ Ω				
		\pm 10 for 500 μ Ω				
Temperature coefficient (element material)	ppm/°C	± 20				
Operating temperature range	°C	-65 to +170				
Thermal EMF	μV/°C	< 1 for 50 μ Ω and < 3 for 100 μ Ω , 125 μ Ω , 500 μ Ω				
Inductance	nH	< 5				
Maximum current rating	Α	(P/R) ^{1/2}				



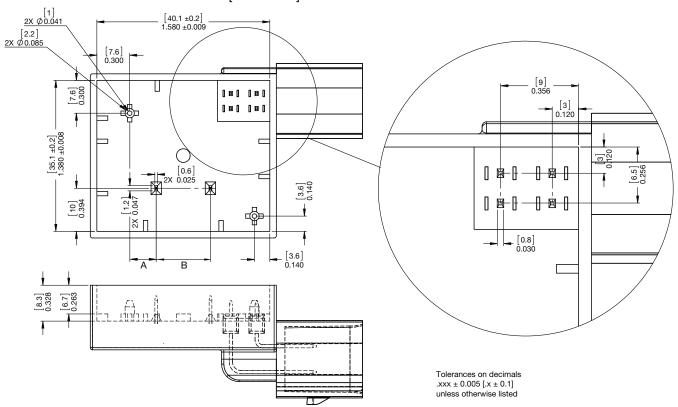
Revision: 15-Feb-17 1 Document Number: 31094



EXTERNAL DIMENSIONS in inches [millimeters]



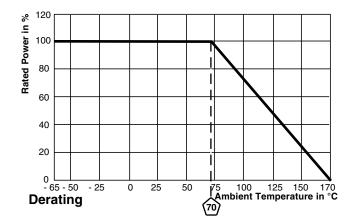
INTERNAL DIMENSIONS in inches [millimeters]



RESISTANCE VALUE ($\mu\Omega$)	ELEMENT MATERIAL	A REF.	B ± 0.005 [± 0.13]
50	Mn-Cu	0.423 [10.74]	0.135 [3.43]
100	Mn-Cu	0.242 [6.15]	0.495 [12.57]
125	Mn-Cu	0.197 [5.00]	0.585 [14.86]
500	Ni-Cr	0.143 [3.63]	0.695 [17.65]

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PERFORMANCE						
TEST	CONDITIONS OF TEST	TEST LIMITS				
Thermal shock	-55 °C to +150 °C, 1000 cycles, 15 min at each extreme	± 0.5 % ΔR				
Short time overload	5x rated power for 5 s	± 0.5 % ΔR				
Low temperature storage	-65 °C for 24 h	± 0.5 % ΔR				
High temperature exposure	1000 h at +170 °C	± 1.0 % ΔR				
Bias humidity	+85 °C, 85 % RH, 10 % bias, 1000 h	± 0.5 % ΔR				
Mechanical shock	100 g's for 6 ms, 5 pulses	± 0.5 % ΔR				
Vibration	Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h	± 0.5 % ΔR				
Load life	1000 h at +70 °C, 1.5 h "ON", 0.5 h "OFF"	± 1.0 % ΔR				
Moisture resistance	MIL-STD-202, method 106, 0 % power, 7b not required	± 0.5 % ΔR				



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