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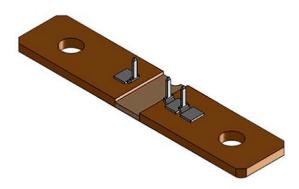
Vishay Dale

HALOGEN FREE

<u>GREEN</u>

(5-2008)

Power Metal Strip[®] Shunt Resistor With Three Sense Pins, Very Low Value (50 $\mu\Omega$, 100 $\mu\Omega$, and 125 $\mu\Omega$)



LINKS TO ADDITIONAL RESOURCES



FEATURES

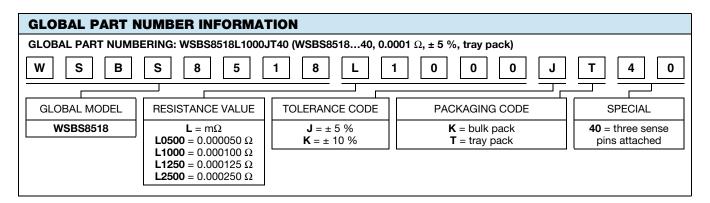
- High power to resistor size ratio
- · Sense pins allow for consistent contact location
- Proprietary processing technique produces extremely low resistance values
- Welded terminal to element construction
- Solid metal manganese-copper alloy resistive element with low TCR (< 20 ppm/°C)
- Very low inductance (< 5 nH)
- Low thermal EMF (< 1 μV/°C available)
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>

STANDARD ELECTRICAL SPECIFICATIONS							
GLOBAL MODEL	SIZE	POWER RATING P _{70 °C} W	TOLERANCE ± %	$\begin{array}{c} \textbf{RESISTANCE VALUE} \\ \textbf{RANGE} \\ \Omega \end{array}$	RESISTANCE VALUES CURRENTLY AVAILABLE (1) Ω	WEIGHT (typical) g	
WSBS851840	8518	36	5, 10	50μ to 1000μ	50μ, 100μ, 125μ	50μ = 38.6, 100μ / 125u = 37.1	

Note

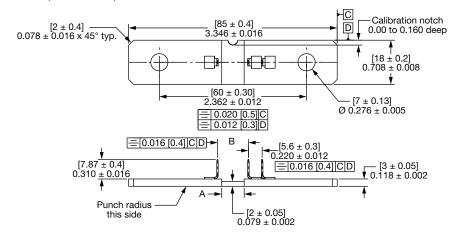
⁽¹⁾ Other values may be available, contact factory

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





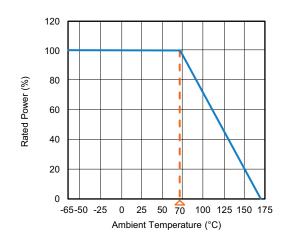
DIMENSIONS in inches (millimeters)



Note

· Minimum pull strength of sense pins is 200 N

DERATING



TOLERANCES ON DECIMALS .xxx \pm 0.005 [.x \pm 0.1]

UNLESS OTHERWISE LISTED

RESISTANCE VALUE ($\mu\Omega$)	ELEMENT MATERIAL	A REFERENCE	B ± 0.005 [± 0.13]
50	Mn-Cu	0.145 [3.68]	0.135 [3.43]
100	Mn-Cu	0.370 [9.40]	0.495 [12.57]
125	Mn-Cu	0.480 [12.19]	0.585 [14.86]

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	5 x 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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