

SBZ – 8420 / 8518 Series

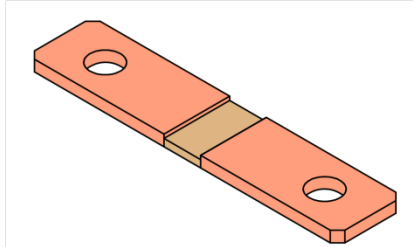
Low Ohmic EB Welded Precision Resistor

Features

- High Conductivity Copper Terminals
- Custom made Shunts available
- Excellent Long Term Stability
- Tinned Terminals available on request
- RoHS and REACH Certified
- AEC-Q200 Compliant
- Customised versions available on request

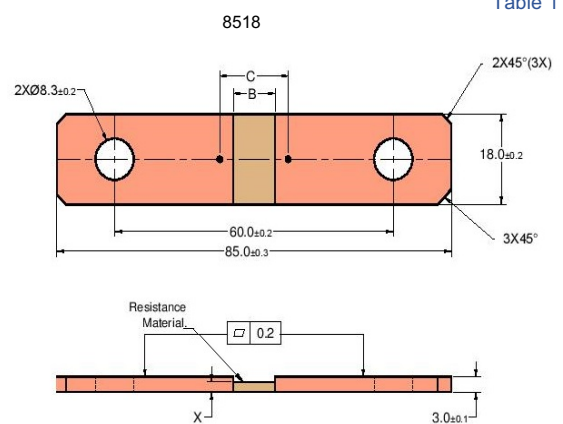
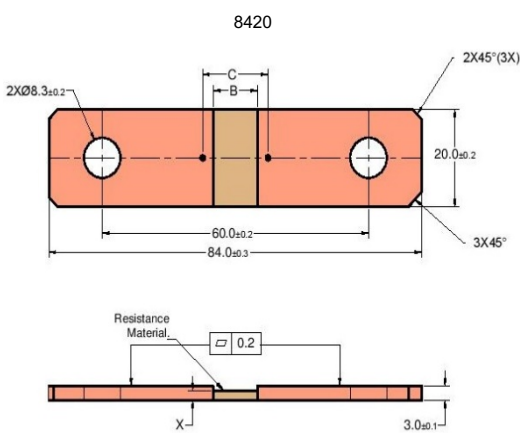
Applications

- Current Sensing for BMS (Battery Management Systems) in hybrid and electric automotive applications.
- Current Sensing for bus bars
- Current Sensing for welding equipment



Technical Data									
Resistance Value	0.035	0.05	0.10	0.125	0.20	0.25	0.50	1.0	(mΩ)
Tolerance (R)	5								(%)
TCR - Temperature Coefficient of Resistance Alloy (20-60°C)	< ± 10 (Copper Manganese Alloys), < - 25 (Aluchrom Alloy)								(ppm/K)
TCR (20-60°C)	± 100 for 0.035 and 0.05mΩ								(ppm/K)
	± 50 for 0.1 mΩ to 0.25 mΩ								
Applicable Temperature Range	-55 to +170								°C
Power Rating (P _{70°C} / P _{100°C}) for 0.1 mΩ	36 / 15								W
Inductance	< 1								nH
Thermal EMF	< 1 (< 3 for 0.5 mΩ and 1mΩ)								µV/°C
Stability Deviation	< 0.5 after 2000 Hours, T _i ⁻ = 110°C								%
* T _i = Terminal Temperature	< 1.0 after 2000 Hours, T _i ⁻ = 140°C								%

Table 1



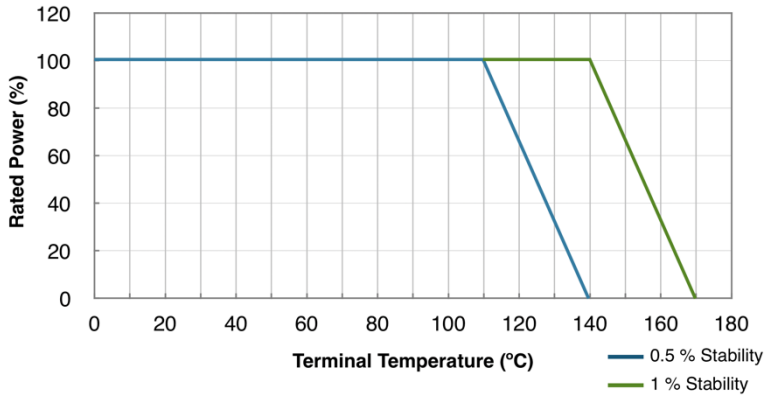
Dimensions are in mm, See table 2(a) and 2(b) for dimensions.



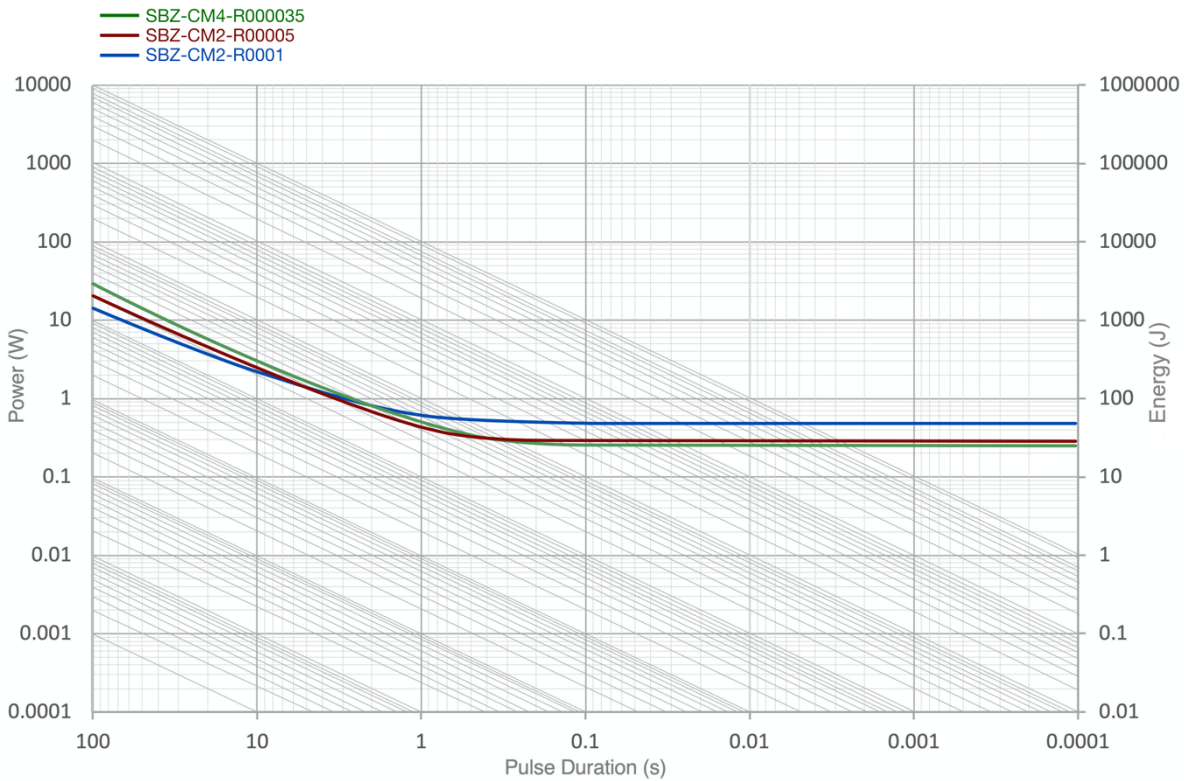
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Power Derating Curve R: 0.1mΩ



Maximum Pulse Energy Curve



Power curve for continuous operation at 140°C

Packing

100 Pieces vacuum packed in plastic bags

Customised packing available on request

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SBZ 8420					
Resistance Value (mΩ)	Dimension X (+/-0.20)	Dimension B (+/-0.50)	Dimension C (+/-0.20)	Resistance Alloy	Ordering Code
0.035	2.0	4.8	8.00	Copper Manganese Alloy	SBZ-CM4-R000035-8420
0.05	2.20	5.00	8.20	Copper Manganese Alloy	SBZ-CM2-R00005-8420
0.10	2.20	10.00	13.20	Copper Manganese Alloy	SBZ-CM2-R0001-8420
0.20	2.00	18.00	21.20	Copper Manganese Alloy	SBZ-CM2-R0002-8420
0.25	2.00	23.00	26.20	Copper Manganese Alloy	SBZ-CM2-R00025-8420
0.50	2.00	14.00	17.20	Aluchrom Alloy	SBZ-AC-R0005-8420
1.00	2.00	28.00	31.20	Aluchrom Alloy	SBZ-AC-R001-8420

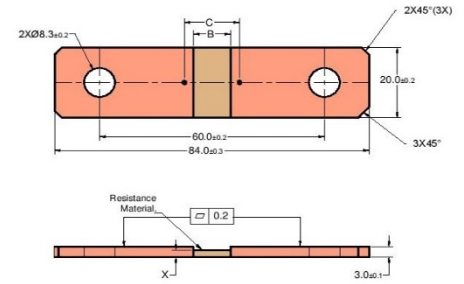


Table 2(a)

SBZ 8518					
Resistance Value (mΩ)	Dimension X (+/-0.20)	Dimension B (+/-0.50)	Dimension C (+/-0.20)	Resistance Alloy	Ordering Code
0.05	2.20	4.50	7.70	Copper Manganese Alloy	SBZ-CM2-R00005-8518
0.10	2.20	9.00	12.20	Copper Manganese Alloy	SBZ-CM2-R0001-8518
0.125	2.00	10.30	13.50	Copper Manganese Alloy	SBZ-CM2-R000125-8518
0.20	2.00	16.50	19.70	Copper Manganese Alloy	SBZ-CM2-R0002-8518
0.25	2.00	21.00	24.20	Copper Manganese Alloy	SBZ-CM2-R00025-8518

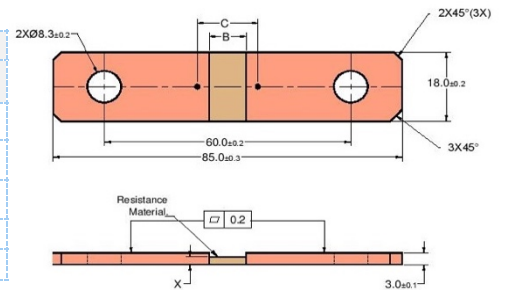


Table 2(b)

Performance:

Type of Test	Reference STD	Test Specifications	Acceptance Criteria
High Temperature Exposure	MIL-STD-202 Method 108	1000 hrs. @ T=170°C.Unpowered.	ΔR +/-1%
Temperature Cycling	JESD22 Method JA-104	-55°C to 150°C, 1000Cycles, 30 minutes at each extreme	ΔR +/-0.5%
Biased Humidity	MIL-STD-202 Method 103	85°C & 85RH with 10% operating power, 1000 hrs.	ΔR +/-0.5%
Operational Life	MIL-STD-202 Method 108	125°C at rated power,1000 hrs.	ΔR +/-1%
External Visual	MIL-STD-883 Method 2009	Visual inspection	Visual
Physical Dimension	JESD22 Method JB-100	Dimensional inspection as per SBCL Specifications	Shall confirm within tolerance limits
Resistance to Solvents	MIL-STD-202 Method 215	Clean with Aqueous chemical	Marking shall be legible
Mechanical Shock	MIL-STD-202 Method 213	100g for 6ms, Half sine	ΔR +/-0.2%
Vibration	MIL-STD-202 Method 204	5g for 20 minutes, 12 cycles each of 3orientations.10-2000Hz	ΔR +/-0.2%
Resistance to Soldering Heat	MIL-STD-202 Method 210	Solder Temp. 260°C, Time 10 seconds	ΔR +/-0.5%
Solderability	J-STD-002	As per J-STD-002	>95% Coverage in 10x Magnification
Electrical Characterization	User Spec.	Resistance as defined	Shall confirm within tolerance limits
Short Time Over Load	--	5x Rated Power for 5 seconds	ΔR +/-1%
Low Temperature Storage	--	-65°C for 24 hrs.	ΔR +/-0.2%