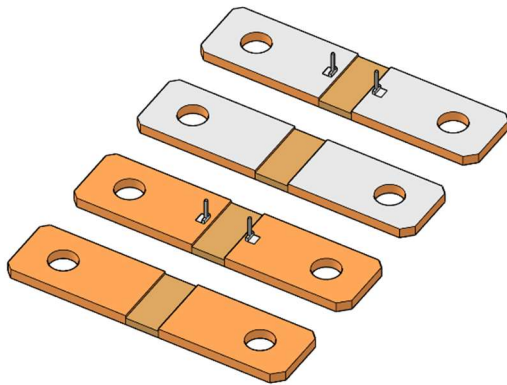




SBZ 8420 / 8518 Series

Low Ohmic EB Welded Precision Resistor



Features

- High Conductivity Copper Terminals (C102 – CuOF)
- Excellent Long Term Stability
- RoHS and REACH Compliant
- AEC-Q200 Compliant
- Customised versions available on request
- Pin Variants** available on request
- Tinned Terminals** 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 mΩ and 0.05 mΩ								(ppm/K)
	± 50 for 0.1 mΩ to 0.25 mΩ								
Applicable Temperature Range	- 55 to +170								°C
Power Rating	See Table 2(a), 2(b)								W
Inductance	< 1								nH
Thermal EMF	< 1 (< 3 for 0.5 mΩ and 1 mΩ)								μV/°C
Stability Deviation	< 0.5 after 2000 Hours, T _t *= 110°C								%
* T _t = Terminal Temperature	< 1.0 after 2000 Hours, T _t *= 140°C								%

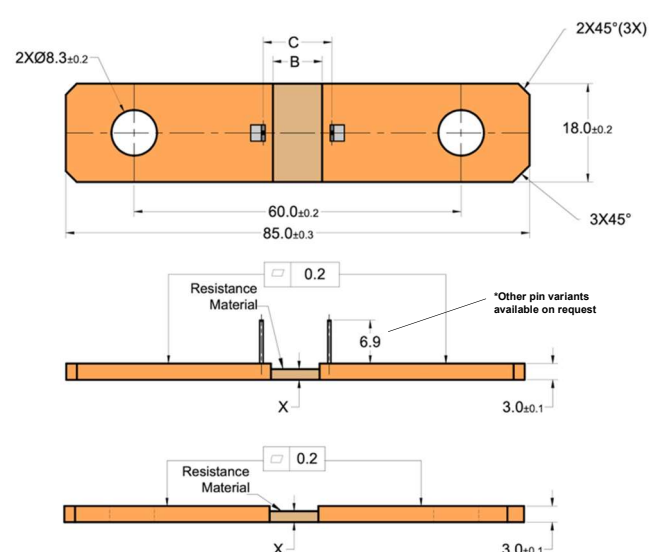
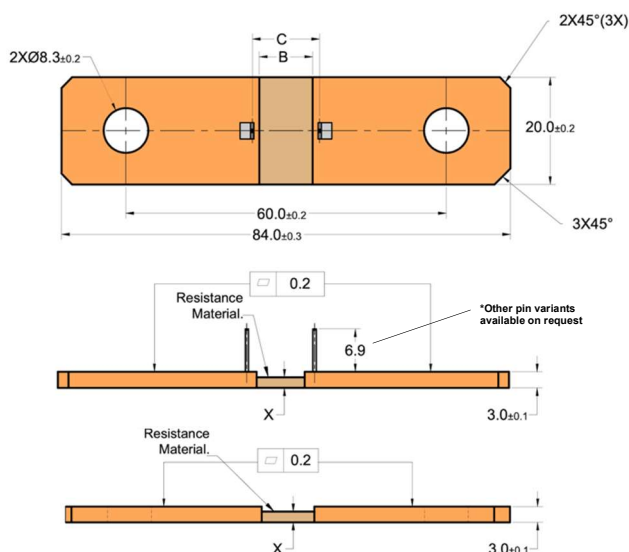
* T_t = Terminal Temperature

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

Table 1

8420

8518

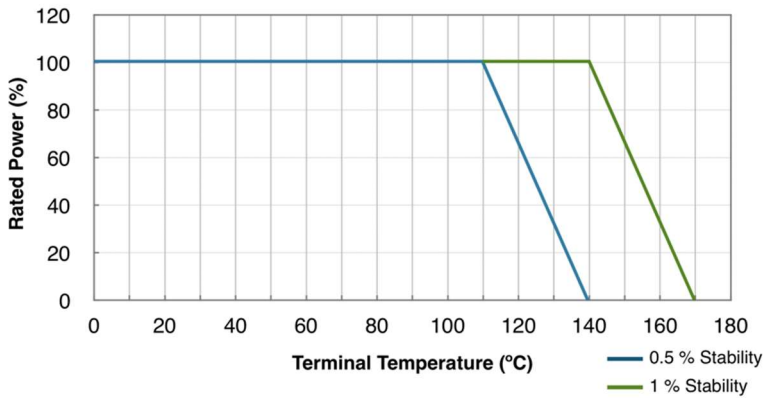




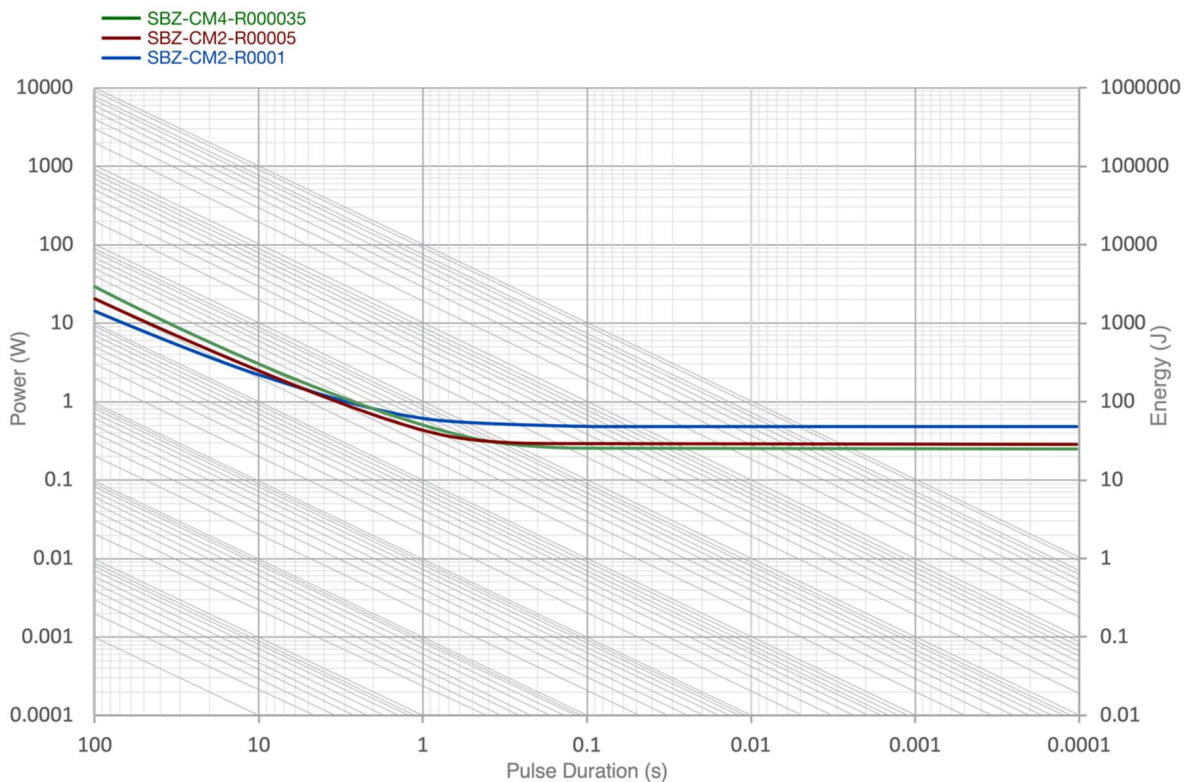
SBZ 8420 / 8518 Series

Low Ohmic EB Welded Precision Resistor

Power Derating Curve R: 0.1mΩ



Maximum Pulse Energy Curve



Power curve for continuous operation at 140°C

Packaging Options

Bulk Packaging	Tray Packaging	Tube Packaging
100 pcs per bag: vacuum sealed in plastic bags with dry nitrogen (NP - without sense pins)	35 Shunts per tray	140 Shunts per tube (NP - without sense pins)

**SBZ 8420 / 8518 Series**

Low Ohmic EB Welded Precision Resistor

SBZ 8420

Part Code	Resistance Value (mΩ)	Dimension X (+/-0.20)	Dimension B (+/-0.50)	Dimension C (+/-0.20)	R _{thi} (K/W)	Resistance Alloy	P _{100°C} (W)	P _{70°C} (W)
SBZ-8420-CM4-R000035	0.035	2.0	4.8	8.00	1.0	Copper Manganese Tin Alloy	30	36
SBZ-8420-CM2-R00005	0.05	2.20	5.00	8.20	1.5	Copper Manganese Alloy	20	36
SBZ-8420-CM2-R0001	0.10	2.20	10.00	13.20	2.0	Copper Manganese Alloy	15	36
SBZ-8420-CM2-R0002	0.20	2.00	18.00	21.20	3.0	Copper Manganese Alloy	10	24
SBZ-8420-CM2-R00025	0.25	2.00	23.00	26.20	3.0	Copper Manganese Alloy	10	24
SBZ-8420-AC-R0005	0.50	2.00	14.00	17.20	7.0	Aluchrom Alloy	4	10
SBZ-8420-AC-R001	1.00	2.00	28.00	31.20	12.0	Aluchrom Alloy	3	7

Table 2(a)

SBZ 8518

Part Code	Resistance Value (mΩ)	Dimension X (+/-0.20)	Dimension B (+/-0.50)	Dimension C (+/-0.20)	R _{thi} (K/W)	Resistance Alloy	P _{100°C} (W)	P _{70°C} (W)
SBZ-8518-CM2-R00005	0.05	2.20	4.50	7.70	1.0	Copper Manganese Alloy	20	36
SBZ-8518-CM2-R0001	0.10	2.20	9.00	12.20	1.5	Copper Manganese Alloy	15	36
SBZ-8518-CM2-R000125	0.125	2.00	10.30	13.50	2.0	Copper Manganese Alloy	15	36
SBZ-8518-CM2-R0002	0.20	2.00	16.50	19.70	3.0	Copper Manganese Alloy	10	24
SBZ-8518-CM2-R00025	0.25	2.00	21.00	24.20	3.0	Copper Manganese Alloy	10	24
SBZ-8518-AC-R0005	0.50	2.00	12.80	15.80	7.0	Aluchrom Alloy	4	10

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, 1000 Cycles, 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 internal 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 3 orientations.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-002E	As per IPC J-STD-002E	>95% Coverage in 10x Magnification
Electrical Characterization	User Specification	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%

Table 3

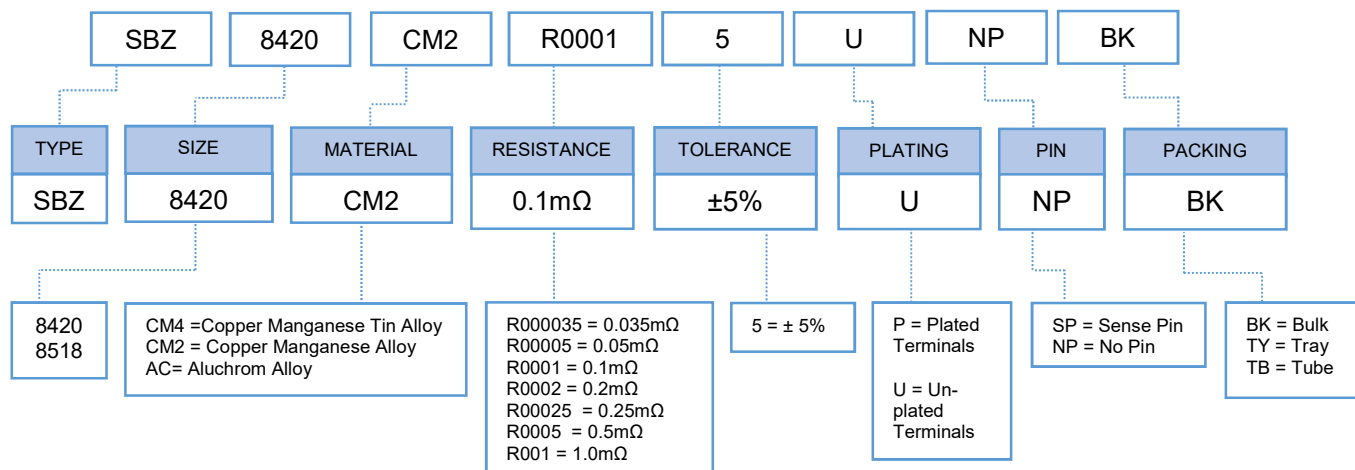


SBZ 8420 / 8518 Series

Low Ohmic EB Welded Precision Resistor

Example of Ordering Code: SBZ-8420-CM2-R0001-5-U-NP-BK

(Example: 0.1mΩ SBZ 8420 without sense pins on un-plated terminals, shipped in bulk packing)

**Tinned Variant**

- RoHS Compliant Plating
- Sn : 2.5 to 8 μm
- Ni : 0.5 to 4 μm Inter-liner
- Available **without Ni inter-liner** on request

