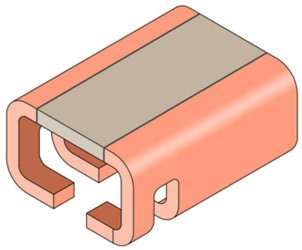
SBI - 1216Series

Low Ohmic EB Welded SMD Precision Resistor



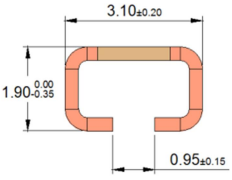
Features

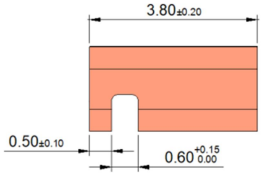
- 5-Watts Permanent Power
- Constant Current up to 100 amps (0.5 mΩ)
- Four Terminal Configuration
- Excellent Long Term Stability
- Max. Solder Temperature up to 350°C / 30 sec
- RoHS and REACH Compliant
- AEC-Q200 Compliant

Applications

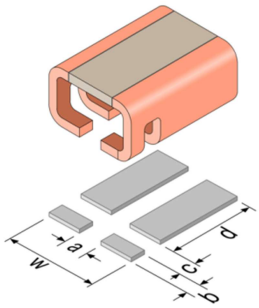
- Current Sensing/ Feedback
- Automotive Applications
- Power Modules
- Frequency Convertors

Technical Data				
Resistance Values	0.5	1		mΩ
Tolerance	3, 5			(%)
Applicable Temperature Range	-65 to +170			ºC
Load Capacity	See table below			
Inductance	< 2			nH
Stability Deviation * T_t = Terminal Temperature	< 0.5 after 2000 Hours, T_t^* = 100ºC			%
Stability Deviation * T_t = Terminal Temperature	< 1.0 after 2000 Hours, T_t^* = 130ºC			%





Type	Resistance mΩ	Material	TCR ppm	$P_{100ºC}$ W
SBI-CM4-R0005	0.5	Copper Manganese Tin Alloy	< 50	5
SBI-CM2-R001	1.0	Copper Manganese Alloy	< 50	3



Solder Pad Dimensions					
Type	w	a	b	c	d
SBI-CM4-R0005	3.6	0.6	0.7	0.5	2.95

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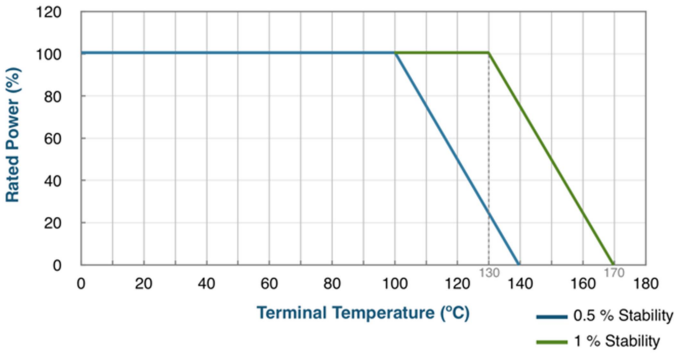
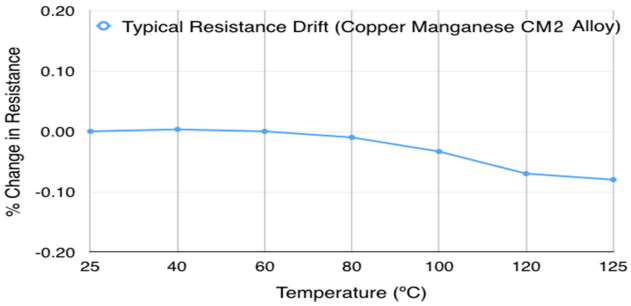
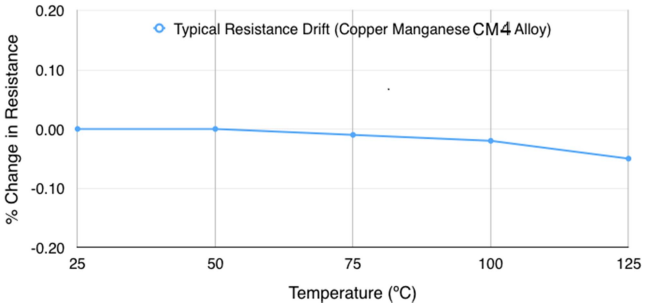
Power Derating Curve



Resistance Change vs Temperature



Resistance Change vs Temperature



Performance:

Type of Test	Reference STD	Test Specifications	Acceptance Criteria
High Temperature Exposure	MIL-STD-202 Method 108	2000 hrs. @ T=170°C.Unpowered.	ΔR +/-1%
Temperature Cycling	JESD22 Method JA-104	-55°C to 150°C, 2000Cycles, 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 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-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 +/-0.5%
Low Temperature Storage	--	-65°C for 250 hrs.	ΔR +/-0.1%

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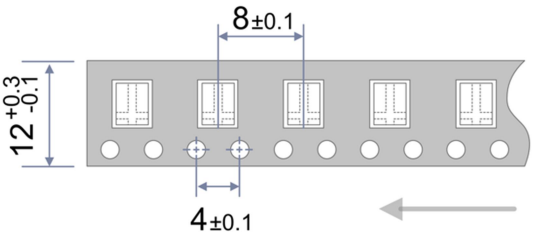
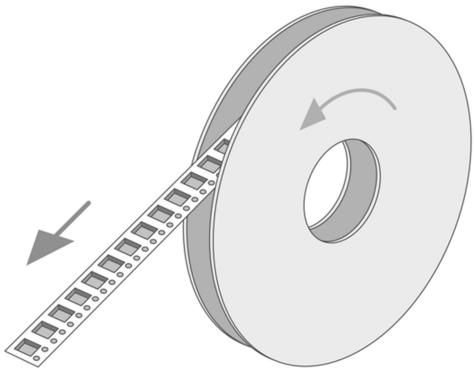
Reel Information	
Reference Standard	DIN EN 60286-3
Width of Reel	12 mm
Number of parts per Reel	2000 pcs
Diameter of Reel	330 mm / 13”





Example of Ordering Code

SBI-CM4-R0005-3-TR

SBI	CM4	R0005	3	TR

SERIES	MATERIAL	RESISTANCE	TOLERANCE	PACKING TYPE
SBI	CM4	0.5 mΩ	± 3%	TR
	CM2 = Copper Manganese Alloy CM4 = Copper Manganese Tin Alloy	R0005 = 0.5 mΩ R001 = 1.0 mΩ	3 = ± 3% 5 = ± 5%	TR = Tape & Reel BK = Bulk Packing