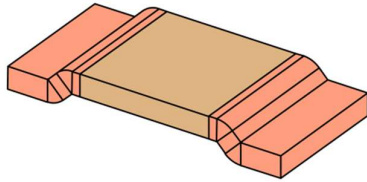




# SBA -2512 Series

Low Ohmic EB Welded SMD Precision Resistor



### Features

- 6-Watts Permanent Power (0.2 to 1.0 mΩ)
- Constant Current up to 110 amps (0.5 mΩ)
- High Conductivity Copper Connectors
- Excellent Long Term Stability
- High Application Temperature Range -65°C to +170°C
- Max. Solder Temperature up to 350°C / 30Sec
- Flame Resistant
- Solid Metal Construction
- RoHS and REACH Compliant
- AEC-Q200 Compliant

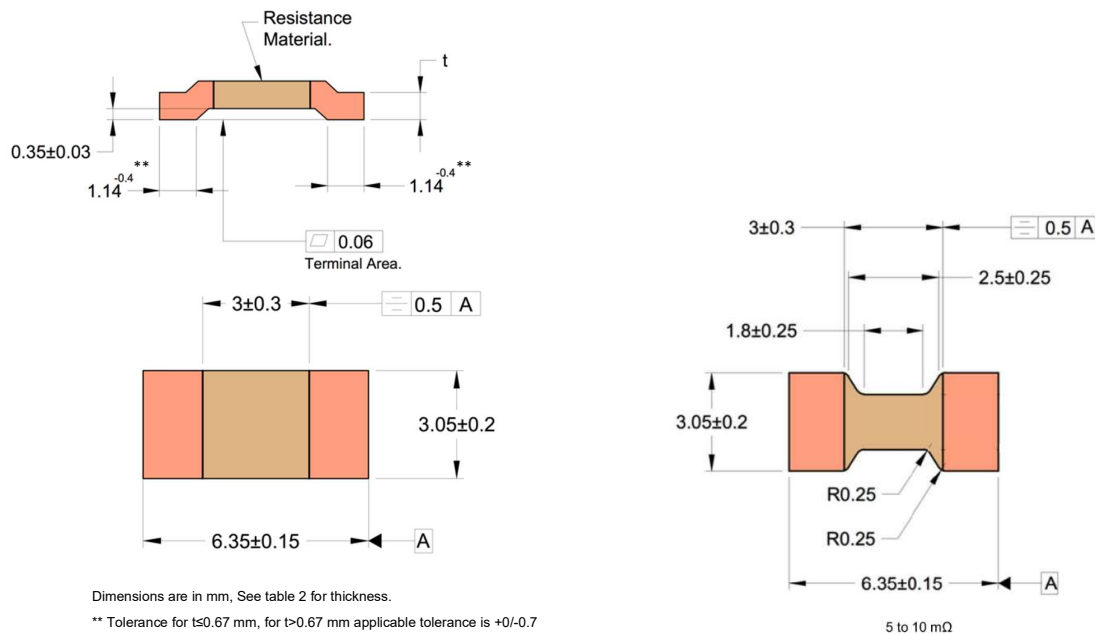
### Applications

- Current Sensing/ Feedback
- Automotive Applications
- Power Modules
- Frequency Convertors
- Inverters
- Low Inductance Applications



Technical Data		
Resistance Values	0, 0.2, 0.3, 0.5, 1, 1.3, 2, 3, 4, 5, 6.8, 10	(mΩ)
Tolerance	1, 2, 5	(%)
TCR - Temperature Coefficient (Resistive Alloy)	<+20 (Copper Manganese Alloys), < -35 (Aluchrom Alloy) < ±20 (Nickel Chromium Alloy)	(ppm/K)
Applicable Temperature Range	-65 to +170	°C
Load Capacity	See Table 2	-
Inductance	<2	nH
Stability Deviation	< 0.5 after 2000 Hours, T <sub>i</sub> = 110°C	%
* T <sub>i</sub> = Terminal Temperature	< 1.0 after 2000 Hours, T <sub>i</sub> = 140°C	%

Table 1

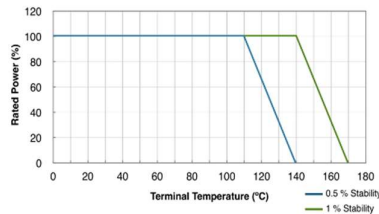




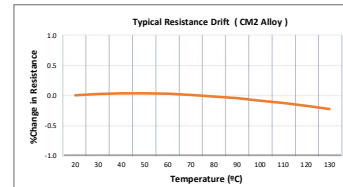
# SBA – 2512 Series

Low Ohmic EB Welded SMD Precision Resistor

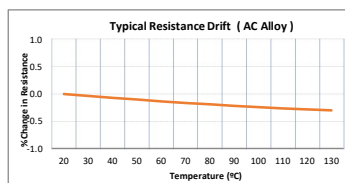
**Power Derating Curve at 70°C ,**  
( SBA-CM2-R0005)



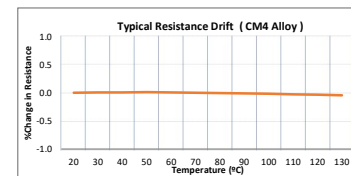
**Resistance Change vs Temperature**



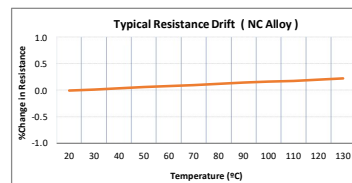
**Resistance Change vs Temperature**



**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	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 atrated 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 +/-1%
Low Temperature Storage	--	-65°C for 24 hrs.	ΔR +/-0.2%

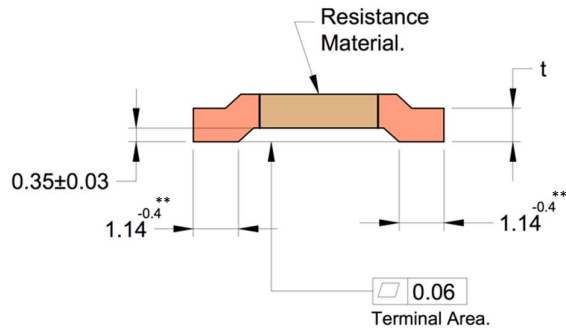
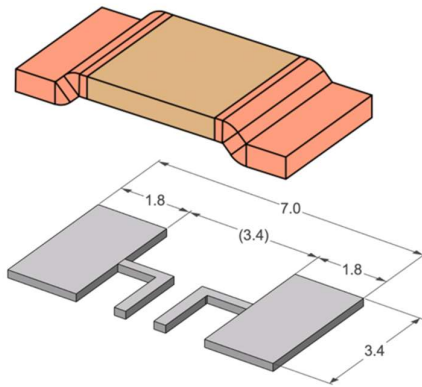


# SBA – 2512 Series

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Type	Resistance Value (mΩ)	Material	R <sub>thi</sub> (°C/W)	t +/- 0.1 (mm)	TCR (ppm)	P <sub>70°C</sub> (W) At Ambient	Wt. (nom.) gm	
SBA-Cu-R000	0.0	Tin Plated Copper	-	0.42	-	-	0.07	
SBA-CM4-R0002	0.2	Copper Manganese Tin Alloy	4	1.0	< 225	6	0.16	
SBA-CM4-R0003	0.3	Copper Manganese Tin Alloy	4	0.95	< 175	6	0.16	
SBA-CM2-R0005	0.5	Copper Manganese Alloy	7	0.85	< 120	6	0.15	
SBA-CM2-R001	1.0	Copper Manganese Alloy	12	0.42	< 100	6	0.07	
SBA-CM2-R0013	1.3	Copper Manganese Alloy	15	0.33	< 100	5	0.06	
SBA-AC-R002	SBA-NC-R002	Aluchrom Alloy	NiCr Alloy	17	0.67	< 50	5	0.11
SBA-AC-R003		Aluchrom Alloy		20	0.45	< 50	4	0.08
SBA-AC-R004		Aluchrom Alloy		25	0.33	< 50	3	0.06
SBA-AC-R005		Aluchrom Alloy		40	0.33	< 50	2.5	0.06
SBA-AC-R0068		Aluchrom Alloy		55	0.33	< 50	2.0	0.06
SBA-AC-R010		Aluchrom Alloy		65	0.33	< 50	1.5	0.06

Table 2



\*\* Tolerance for t≤0.67 mm, for t>0.67 mm applicable tolerance is +0/-0.7

### Solder Pad Layout

**Note:**

- 1) Recommended Solder Reflow Profile:

<http://www.shivalikbimetals.com/SRP-01.pdf>

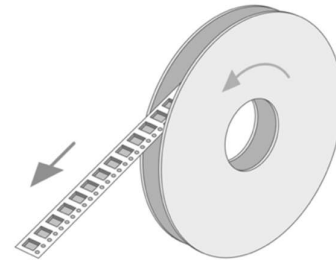
- 2) Aluchrom is ferro -magnetic and is not recommended for AC applications. For AC applications ,use NiCr(NC) variant .



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Reel Information	
Reference Standard	DIN EN 60286-3
Width of Reel	12 mm
Number of parts per Reel	5000 pcs



## Example of Ordering Code

**SBA-CM2-R0005-1-TR**

