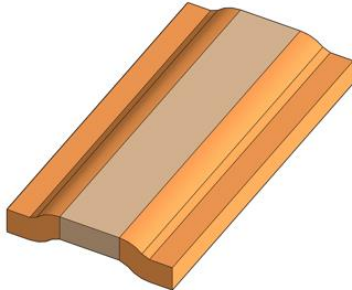




# SBA -2550 Series

Low Ohmic EB Welded SMD Precision Resistor



### Features

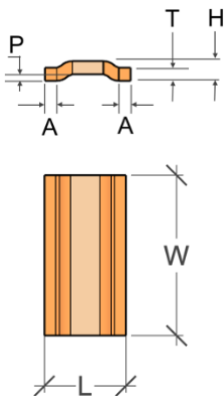
- 12-Watts Permanent Power
- High Conductivity Copper Connectors
- Excellent Long Term Stability
- High Application Temperature Range -55°C to +170°C
- Max. Solder Temperature up to 350°C / 30Sec
- Flame Resistant
- Solid Metal Construction
- RoHS and REACH Compliant
- AEC-Q200 Compliant

### Applications

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



Technical Data		
Resistance Values	0.045, 0.10, 0.50	(mΩ)
Tolerance	See Table 2	-
TCR - Temperature Coefficient (Resistance Alloy)	<±20 (Copper Manganese Alloys) < -25 (Aluchrom Alloy)	(ppm/K)
Applicable Temperature Range	-55 to +170	°C
Load Capacity	See Table 2	-
Inductance	<2	nH
Stability Deviation	< 0.5 after 2000 Hours, T <sub>t</sub> ' = 110°C	%
* T <sub>t</sub> = Terminal Temperature	< 1.0 after 2000 Hours, T <sub>t</sub> ' = 140°C	%



Resistance (mΩ)	L (mm)	W (mm)	H (mm)	T (mm)	A (mm)	P (mm)
<b>0.045</b>	6.50±0.20	12.80±0.40	1.50±0.30	1.0±0.20	0.90±0.30	0.50±0.10
<b>0.10</b>	6.50±0.20	12.80±0.40	1.50±0.30	1.0±0.20	0.90±0.30	0.50±0.10
<b>0.50</b>	6.50±0.30	12.80±0.40	1.10±0.30	0.60±0.15	0.90±0.30	0.50±0.10

Table 1

Type	Resistance (mΩ)	Material	TCR (ppm)	Power Rating (W)	Resistance Tolerance (%)
SBA-2550-CM4-R000045	0.045	Copper Manganese Alloy	< 175	12	±4%
SBA-2550-CM2-R0001	0.1	Copper Manganese Alloy	< 50	12	±2%
SBA-2550-AC-R0005	0.5	Aluchrom Alloy	< 50	12	±1%

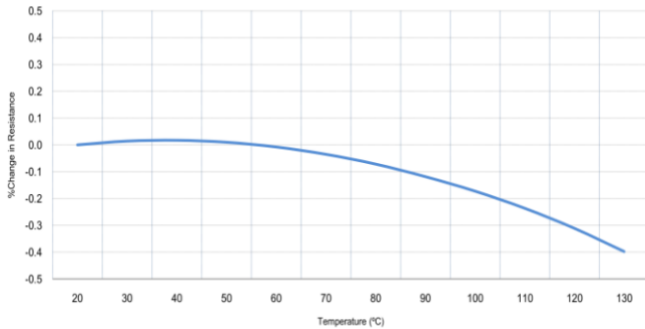
Table 2



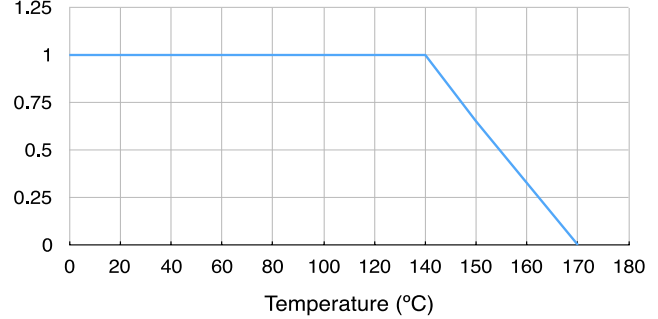
# SBA-2550 Series

Low Ohmic EB Welded SMD Precision Resistor

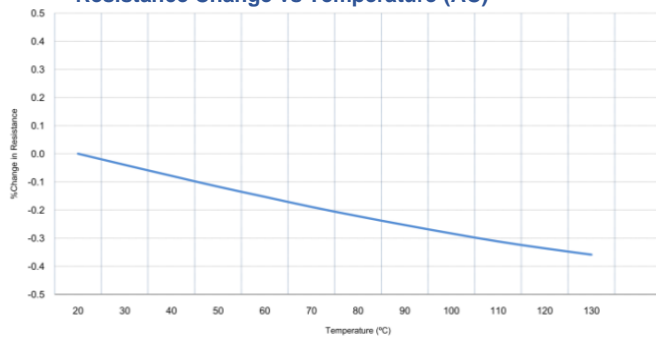
Resistance Change vs Temperature (CM2)



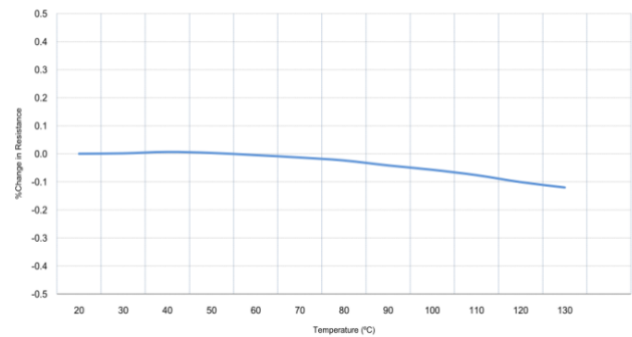
P/P<sub>NOM</sub> Power Derating Curve



Resistance Change vs Temperature (AC)



Resistance Change vs Temperature (CM4)



**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 +/- 1%
Biased Humidity	MIL-STD-202 Method 103	85°C & 85RH with 10% operating power, 1000 hrs.	ΔR +/- 1%
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 +/- 1%

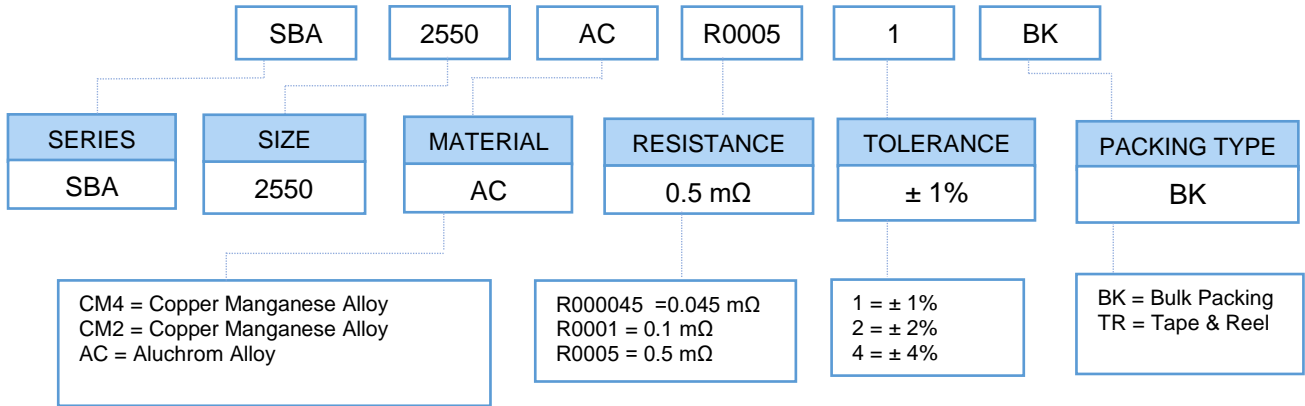


# SBA – 2550 Series

Low Ohmic EB Welded SMD Precision Resistor

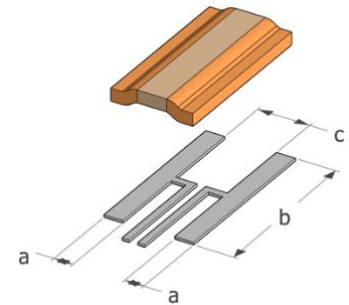
## Example of Ordering Code

### SBA-2550-AC-R0005-1-BK

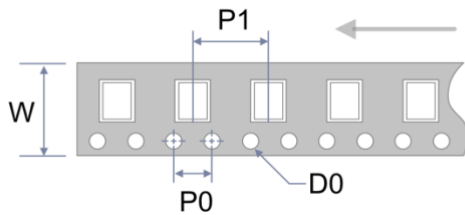


## Pad Area Layout

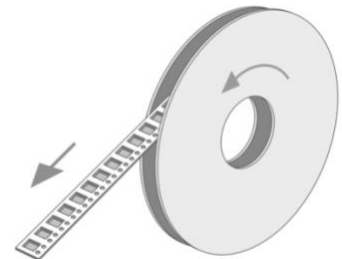
Type	Pad Area Layout (mm)		
	a	b	c
SBA-2550	1.5	13.2	3.6



## Tape and Reel Packing



Type	Pad Area Layout (mm)			
	W	P0	P1	D0
SBA-2550	24.0 ± 0.2	4.0 ± 0.1	12.0 ± 0.1	1.5 ± 0.1
Parts per Reel		2000		



## Solder Reflow Profile

Recommended Solder Reflow Profile can be found at:

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