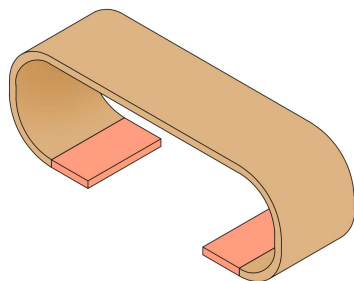


**SBD-3812 / 4524 / 4512 Series**

Low Ohmic EB Welded SMD Precision Resistor

**Features**

- 2 Watts Permanent Power (3 mΩ)
- Constant Current up to 26 amps (3.0 mΩ)
- 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 Certified
- AEC-Q200 Compliant

Applications

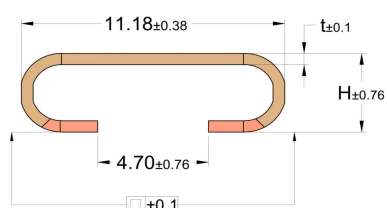
- Current Sensing / Feedback
- Automotive Applications
- Power Modules
- Frequency Convertors
- Inverters
- Low Inductance Applications



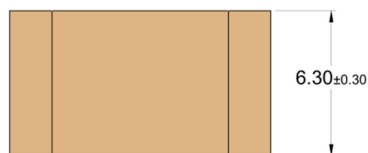
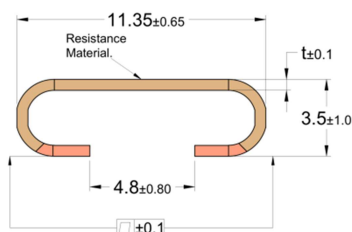
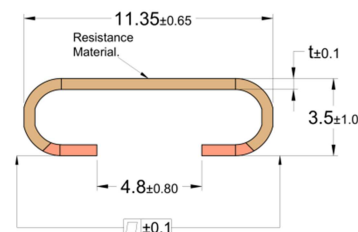
Technical Data		
Resistance Values	1, 2, 2.5, 3, 4, 5, 6, 10, 15, 20, 25, 30, 50	(mΩ)
Tolerance	>R002 = 1, 3, 5, <R002 = 3, 5	(%)
TCR - Temperature Coefficient (Resistive Alloy)	<±10 (Copper Manganese Alloys), <-25 (Aluchrom Alloy) <±20 (CM3, NC)	(ppm/K)
Applicable Temperature Range	-55 to +170	°C
Inductance	<10	nH
Stability Deviation	< 1.0 after 2000 Hours, $T_t^* = 90^\circ\text{C}$	%
	< 2.0 after 2000 Hours, $T_t^* = 120^\circ\text{C}$	%

* T_t = Terminal Temperature

Table 1

3812

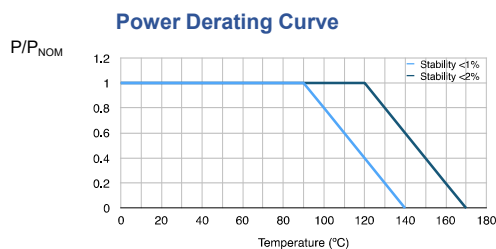
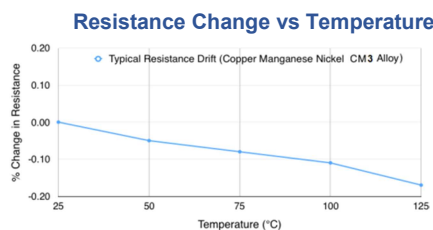
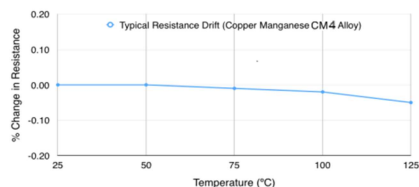
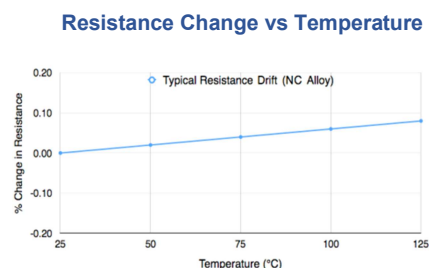
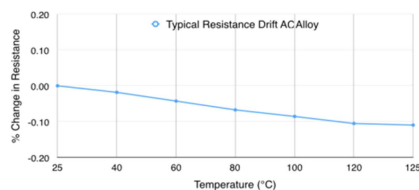
Rating (mΩ)	H (mm)
>R003	3.05
R002, R003	3.51

4524**4512**

All dimensions are in mm. See table 2 for thickness.

**SBD – 3812 / 4524 / 4512 Series**

Low Ohmic EB Welded SMD Precision Resistor

**Resistance Change vs Temperature****Resistance Change vs Temperature****Performance:**

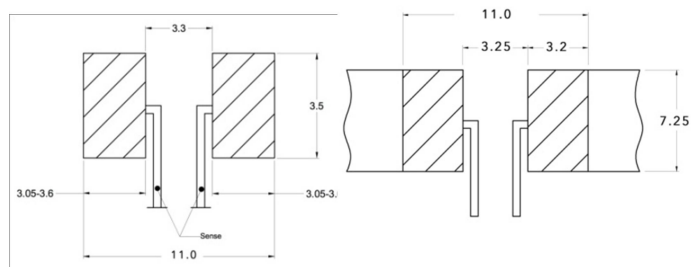
Type of Test	Reference STD	Test Specifications	Acceptance Criteria
High Temperature Exposure	MIL-STD-202 Method 108	1000 hrs. @ T=170°C.Unpowered.	ΔR +/-2%
Temperature Cycling	JESD22 Method JA-104	-55°C to 150°C, 1000Cycles, 30 minutes at each extreme	ΔR +/-0.5%
Biased Humidity	MIL-STD-202 Method 103	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 +/-2%
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%

**SBD – 3812 / 4524 / 4512 Series**

Low Ohmic EB Welded SMD Precision Resistor

3812 Series

Type	Resistance (mΩ)	t (mm)	TCR (ppm)	P (W)	Resistance Alloy
SBD-CM4-R002	2	0.50	<100	2	Copper Manganese Alloy
SBD-CM2-R003	3	0.50	<100	2	
SBD-CM2-R004	4	0.38	<100	2	
SBD-CM2-R005	5	0.30	<100	2	
SBD-AC-R010	10	0.62	<100	2	Aluchrom Alloy
SBD-AC-R015	15	0.41	<100	2	
SBD-AC-R020	20	0.31	<100	2	
SBD-AC-R025	25	0.25	<100	2	
SBD-NC-R050	50	0.13	<100	2	NiCrAlloy



3812 PCB Layout (mm)

4512 / 4524 PCB Layout (mm)

4524 Series

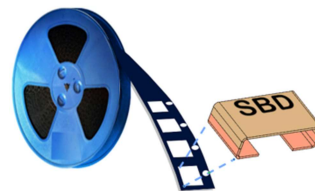
Type	Resistance (mΩ)	t (mm)	TCR (ppm)	P (W)	Resistance Alloy
SBD-CM4-R001	1	0.74	<100	5	Copper Manganese Alloy
SBD-CM3-R002	2	0.60	<100	5	
SBD-CM3-R0025	2.5	0.48	<100	5	
SBD-CM3-R003	3	0.40	<100	5	
SBD-CM3-R005	5	0.24	<100	5	Aluchrom Alloy
SBD-AC-R010	10	0.35	<100	5	
SBD-AC-R015	15	0.23	<100	5	
SBD-AC-R025	25	0.14	<100	5	

4512 Series

Type	Resistance Value (mΩ)	t (mm)	TCR (ppm)	P (W)	Resistance Alloy
SBD-CM4-R002	2	0.74	<100	5	Copper Manganese Alloy
SBD-CM3-R004	4	0.60	<100	5	
SBD-CM3-R005	5	0.48	<100	5	
SBD-CM3-R006	6	0.40	<100	5	
SBD-CM3-R010	10	0.24	<100	5	Aluchrom Alloy
SBD-AC-R020	20	0.35	<100	5	
SBD-AC-R030	30	0.23	<100	5	
SBD-AC-R050	50	0.14	<100	5	

Reel Information

	3812 / 4512	4524
Reference Standard	DIN EN 60286-3	
Width of Reel	24 mm	
Number of parts per Reel	1900	1200

**Example of ordering Code****SBD-CM2-R005-1-3812-TR**