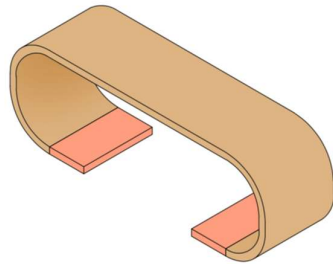




SBD-4512 / 4524 Series

Low Ohmic EB Welded SMD Precision Resistor



Features

- 2 Watts Permanent Power (2 mΩ)
- Constant Current up to 32 amps (2.0 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

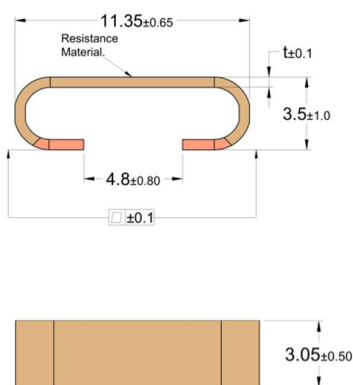


Technical Data		
Resistance Values	1, 2, 2.5, 4, 5, 10, 15, 20, 25,30,40, 50	(mΩ)
Tolerance	>R002 = 1,3,5 ,<R002 = 3,5	(%)
TCR - Temperature Coefficient (Resistive Alloy)	<±25 (Copper Nickel Alloy), < -35 (Aluchrom Alloy)	(ppm/K)
Applicable Temperature Range	-55 to +170	°C
Inductance	<10	nH
Stability Deviation	< 1.0 after 2000 Hours, T _t ' = 90°C	%
	< 2.0 after 2000 Hours, T _t ' = 120°C	%

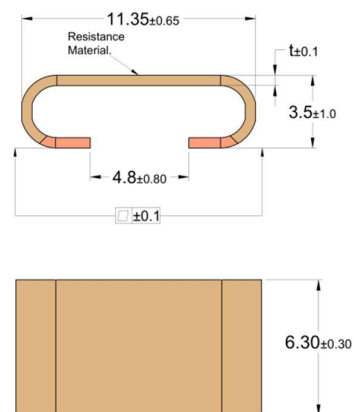
* T_t = Terminal Temperature

Table 1

4512



4524

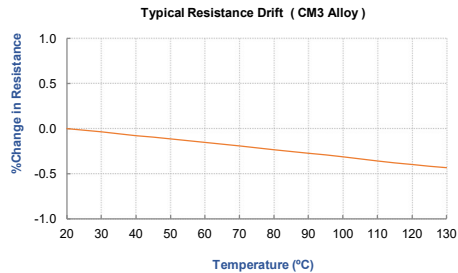
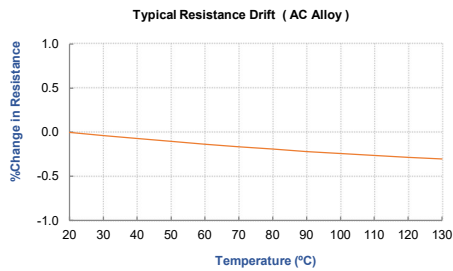
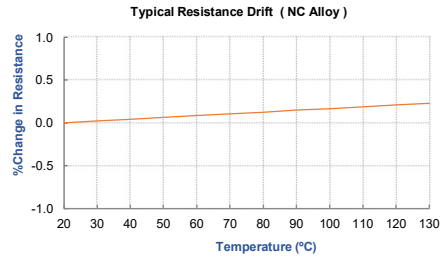
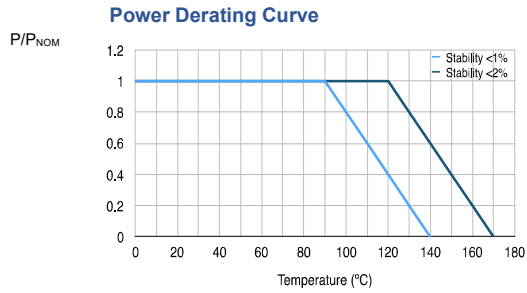


All dimensions are in mm, See table 2 for thickness.



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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 – 4512 / 4524 Series

Low Ohmic EB Welded SMD Precision Resistor

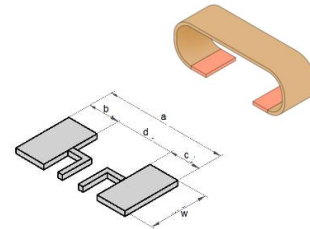
4524 Series

Type	Resistance (mΩ)	t (mm)	TCR (ppm)	P (W)	Resistance Alloy
SBD-CM5-R001	1	0.74	<100	5	Copper Nickel Alloy
SBD-CM3-R002	2	0.60	<100	5	Copper Nickel Alloy
SBD-CM3-R0025	2.5	0.48	<100	5	Copper Nickel Alloy
SBD-CM3-R005	5	0.24	<100	5	Copper Nickel Alloy
SBD-NC-R010	10	0.35	<100	5	Nickel Chromium Alloy
SBD-AC-R015	15	0.23	<100	5	Aluchrom Alloy
SBD-AC-R020	20	0.175	<100	5	Aluchrom Alloy
SBD-NC-R025	25	0.13	<100	5	Nickel Chromium Alloy

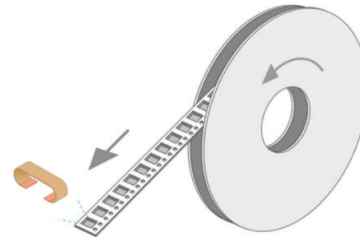
4512 Series

Type	Resistance (mΩ)	t (mm)	TCR (ppm)	P (W)	Resistance Alloy
SBD-CM5-R002	2	0.74	<100	2	Copper Nickel Alloy
SBD-CM3-R004	4	0.60	<100	2	Copper Nickel Alloy
SBD-CM3-R005	5	0.48	<100	2	Copper Nickel Alloy
SBD-CM3-R010	10	0.24	<100	2	Copper Nickel Alloy
SBD-NC-R020	20	0.35	<100	2	Nickel Chromium Alloy
SBD-AC-R030	30	0.23	<100	2	Aluchrom Alloy
SBD-AC-R040	40	0.175	<100	2	Aluchrom Alloy
SBD-NC-R050	50	0.13	<100	2	Nickel Chromium Alloy

Type	Pad Area Layout (mm)				
	a	b	c	d	w
SBD-4512	9.40	3.20	3.20	3.25	4.10
SBD-4524	9.40	3.20	3.20	3.25	7.25



Reel Information		
	4512	4524
Reference Standard	DIN EN 60286-3	
Width of Reel	24 mm	
Number of parts per Reel	1500	1100



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 .



SBD – 4512 / 4524 Series

Low Ohmic EB Welded SMD Precision Resistor

Example of ordering Code

SBD-CM3-R005-1-4512-TR

