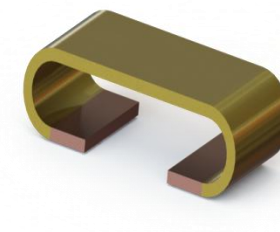




EBWD – E- Beam Welded SMD Shunt resistor

KEY FEATURES:

- 2 Watts permanent power (3mΩ).
- Constant current up to 26 amps (3mΩ).
- High conductivity copper terminals.
- 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 & REACH Certificate.
- AEC-Q200 Compliant

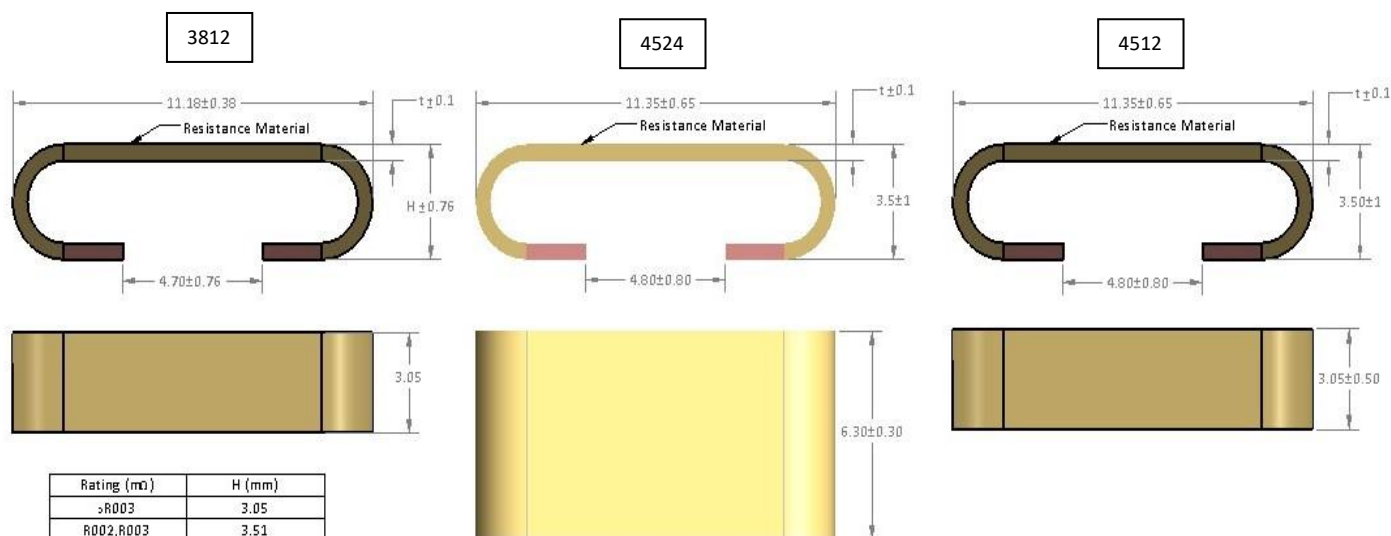


APPLICATIONS:

- Current sensing / Feedback.
- Automotive application.
- Power modules.
- Frequency converters.
- Inverters.
- Low inductance application.

TECHNICAL DATA:

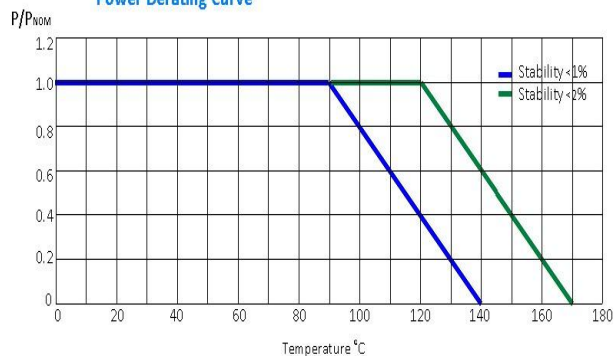
Resistance Values	1, 2, 2.5, 3, 4, 5, 6, 10, 15, 20, 25, 30, 50	(mΩ)
Tolerance	>R002 = 1, 3, 5, <R002 = 3,5	(%)
TCR-Temperature coefficient (Resistive Alloy)	<±10 (Copper Manganese Alloys), <-25 (Aluchrom alloys) <±20 (CM3)	(ppm/K)
Application Temperature Range	-55 to 170	°C
Inductance	<10	nH
Stability Deviation	<0.5 after 2000 Hours, Tt = 110°C	%
*Tt= Terminal Temperature	<1.0 after 2000 Hours, Tt = 140°C	%



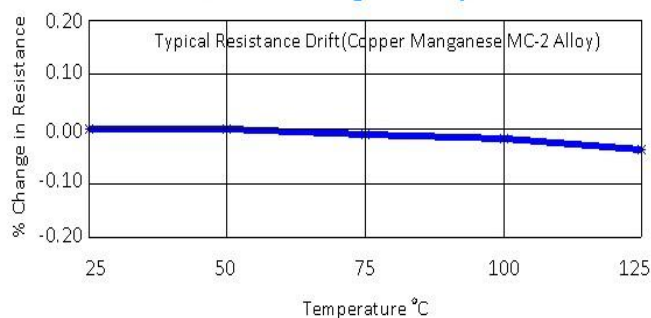


EBWD – E- Beam Welded SMD Shunt resistor

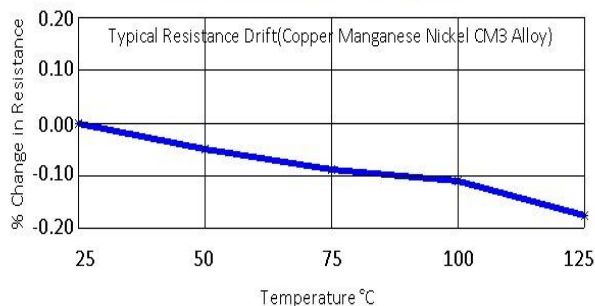
Power Derating Curve



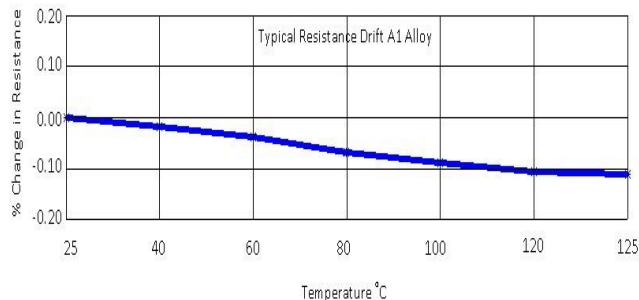
Resistance Change vs Temperature



Resistance Change vs Temperature



Resistance Change vs Temperature



PERFORMANCE DATA:

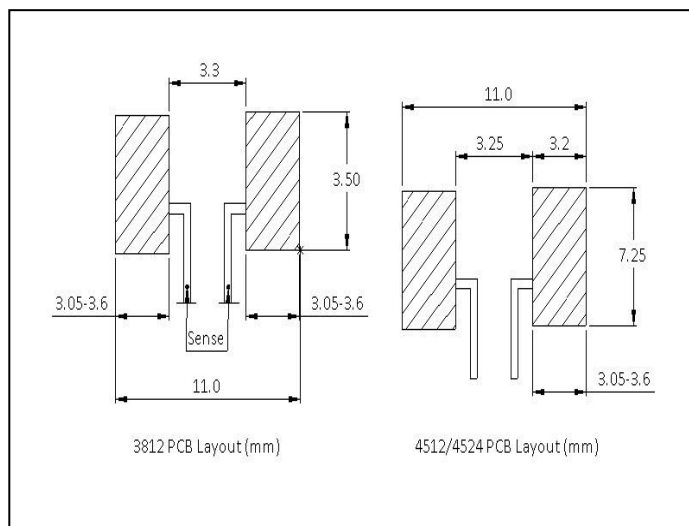
Type of Test	Reference STD	Test Specifications	Acceptance Criteria
External Visual	MIL-STD-883 Method 2009	Visual inspection	Visual
Physical Dimension	JESD22 Method JB-100	Dimensional inspection as per PEC Specification	Shall confirm within tolerance limits
Resistance to solvents	MIL-STD-202 Method 215	Clean with Aqueous chemical	Marking shall be legible
Mechanical Shock	MIL-STD-202 Method 213	100g for 6ms, Half sine	$\Delta R \pm 0.2\%$
Vibration	MIL-STD-202 Method 204	5g for 20 minutes, 12 cycles each of 3 orientations.10-2000Hz	$\Delta R \pm 0.2\%$
Resistance to Soldering Heat	MIL-STD-202 Method 210	Solder Temp. 260°C, Time 10 seconds	$\Delta R \pm 0.5\%$
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 limit
Operational Life	MIL-STD-202 Method 108	125°C at rated power,1000hrs	$\Delta R \pm 1\%$
Short Time Over Load	--	5x Rated Power for 5 seconds	$\Delta R \pm 1\%$
Temperature Cycling	JESD22 Method JA-104	-55°C to 150°, 1000Cycles, 30 minutes at each extreme	$\Delta R \pm 0.5\%$
High Temperature Exposure	MIL-STD-202 Method108	1000 hrs. @ T=170°C.Unpowered.	$\Delta R \pm 1\%$
Biased Humidity	MIL-STD-202 Method 103	85°C & 85RH with 10% operating power, 1000 hrs	$\Delta R \pm 0.5\%$
Low Temperature Storage	--	-65°C for 24 hrs	$\Delta R \pm 0.2\%$



EBWD – E- Beam Welded SMD Shunt resistor

3812 Series

Type	R (mΩ)	t(mm)	TCR (ppm)	P(W)	Resistance Alloy
EBWD-MC2-R002	2	2	<100	2	Copper Manganese Alloy
EBWD-CM2-R003	3	0.50	<100	2	
EBWD-CM2-R004	4	0.38	<100	2	
EBWD-CM2-R005	5	0.30	<100	2	
EBWD-A1-R010	10	0.62	<100	2	Aluchrom Alloy
EBWD-A1-R015	15	0.41	<100	2	
EBWD-A1-R020	20	0.31	<100	2	
EBWD-A1-R025	25	0.25	<100	2	



4524 Series

Type	R (mΩ)	t(mm)	TCR (ppm)	P (W)	Resistance Alloy
EBWD-MC2-R001	1	0.74	<100	5	Copper Manganese Alloy
EBWD-CM3-R002	2	0.60	<100	5	Copper Manganese Nickel Alloy
EBWD-CM3-R0025	2.5	0.48	<100	5	
EBWD-CM3-R003	3	0.40	<100	5	
EBWD-CM3-R005	5	0.24	<100	5	
EBWD-A1-R010	10	0.35	<100	5	Aluchrom Alloy
EBWD-A1-R015	15	0.23	<100	5	
EBWD-A1-R025	25	0.14	<100	5	

4512 Series

Type	R (mΩ)	t(mm)	TCR (ppm)	P (W)	Resistance Alloy
EBWD-MC2-R002	2	0.74	<100	5	Copper Manganese Alloy
EBWD-CM3-R004	4	0.60	<100	5	Copper Manganese Nickel Alloy
EBWD-CM3-R005	5	0.48	<100	5	
EBWD-CM3-R006	6	0.40	<100	5	
EBWD-CM3-R010	10	0.24	<100	5	
EBWD-A1-R020	20	0.35	<100	5	Aluchrom Alloy
EBWD-A1-R030	30	0.23	<100	5	
EBWD-A1-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

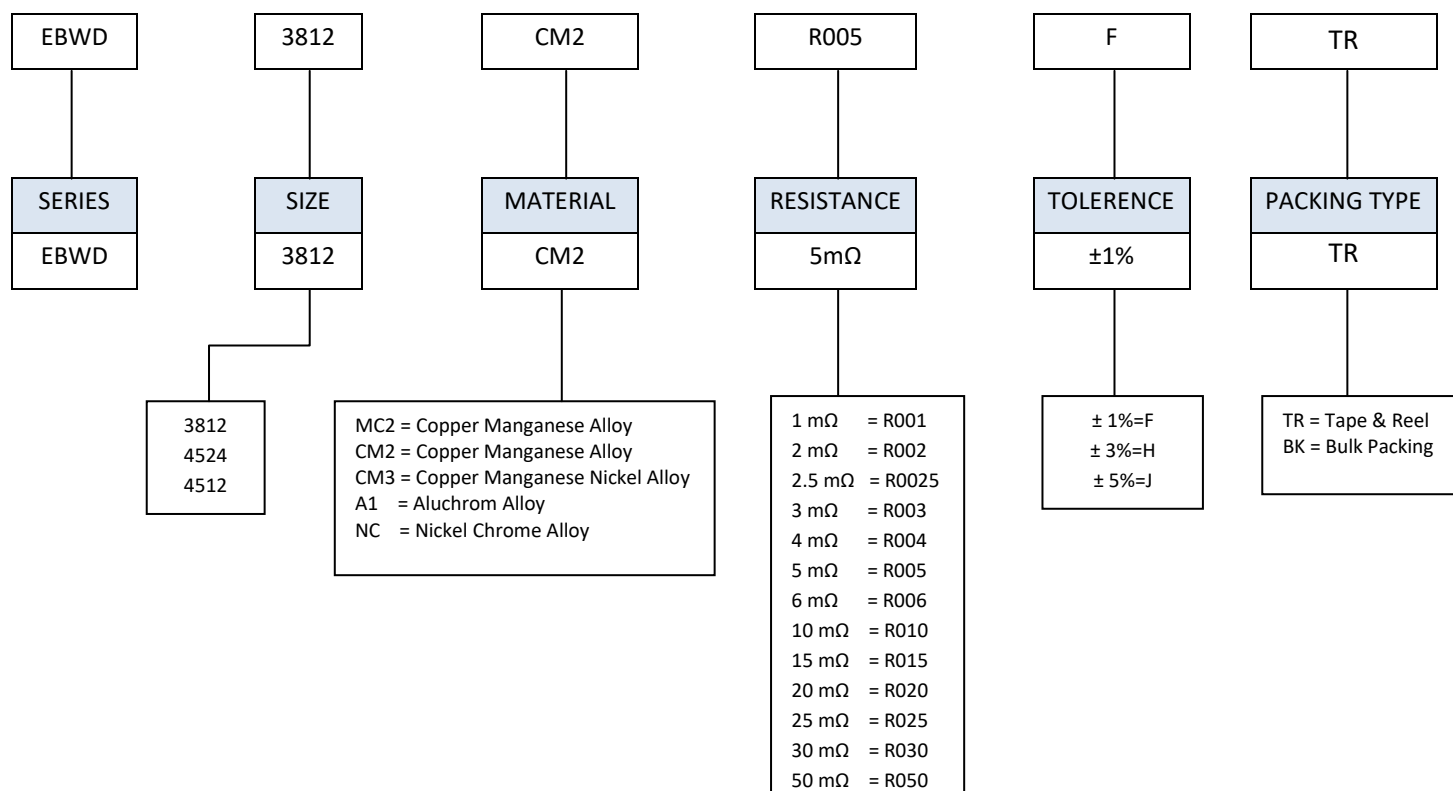




EBWD – E- Beam Welded SMD Shunt resistor

Example of ordering Code

EDWD-3812-CM2-R005-F-TR



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