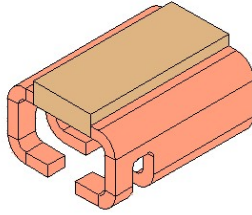


**SBI - 1216Series**

Low Ohmic EB Welded SMD Precision Resistor

**Features**

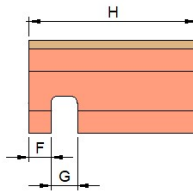
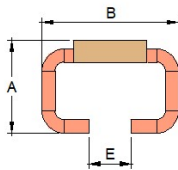
- 5-Watts Permanent Power
- Constant Current up to 100 amps (0.5 mΩ)
- Four Terminal Configuration
- Excellent Long Term Stability
- Max. Solder Temperature up to 350°C / 30 sec
- RoHS and REACH Compliant
- AEC-Q200 Compliant

Applications

- Current Sensing/ Feedback
- Automotive Applications
- Power Modules
- Frequency Convertors

**Technical Data**

| | | |
|--------------------------------|---|-----|
| Resistance Values | 0.3 0.5 1.0 | mΩ |
| Tolerance | 3, 5 | (%) |
| Applicable Temperature Range | -65 to +170 | °C |
| Load Capacity | See table -2 | |
| Inductance | < 2 | nH |
| Stability Deviation | < 0.5 after 2000 Hours, $T_t^* = 100^\circ\text{C}$ | % |
| * T_t = Terminal Temperature | | |
| Stability Deviation | < 1.0 after 2000 Hours, $T_t^* = 130^\circ\text{C}$ | % |
| * T_t = Terminal Temperature | | |



| Type | Resistance (mΩ) | A (+0,-0.35) | B (±0.2) | E (±0.15) | F (±0.10) | G (±0.15) | H (±0.20) |
|---------------|-----------------|--------------|----------|-----------|-----------|-----------|-----------|
| SBI-CM4-R0003 | 0.3 | 2.10 | 3.10 | 0.95 | 0.50 | 0.60 | 3.80 |
| SBI-CM4-R0005 | 0.5 | 1.90 | 3.10 | 0.95 | 0.50 | 0.60 | 3.80 |
| SBI-CM1-R0001 | 1.0 | 1.90 | 3.10 | 0.95 | 0.50 | 0.60 | 3.80 |

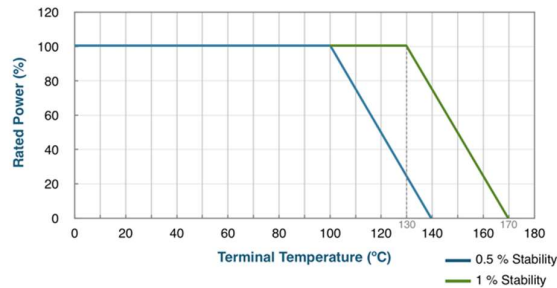
Table 1



SBI - 1216Series

Low Ohmic EB Welded SMD Precision Resistor

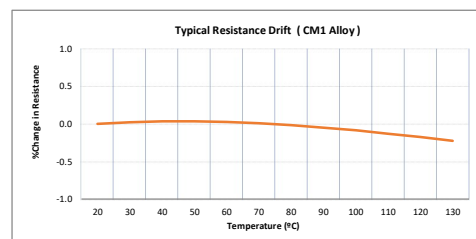
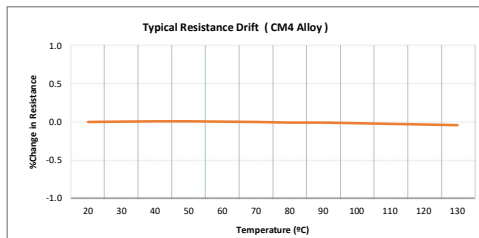
Power Derating Curve



| Type | Resistance (mΩ) | Material | TCR (ppm) | P _{100°C} (W) _{A_t} Ambient |
|---------------|-----------------|----------------------------|-----------|---|
| SBI-CM4-R0003 | 0.3 | Copper Manganese Tin Alloy | < 100 | 5 |
| SBI-CM4-R0005 | 0.5 | Copper Manganese Tin Alloy | < 50 | 5 |
| SBI-CM1-R001 | 1.0 | Copper Manganese Alloy | < 50 | 3 |

Table 2

Resistance Change vs Temperature



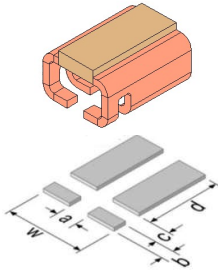
Performance:

| 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 at rated 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 +/-0.5% |
| Low Temperature Storage | -- | -65°C for 24 hrs. | ΔR +/-0.1% |



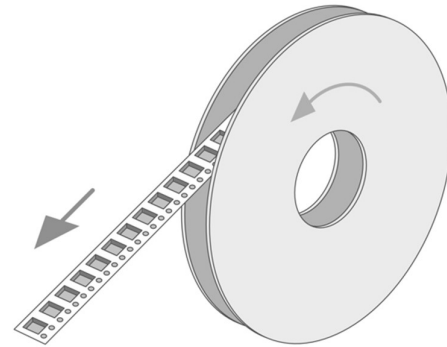
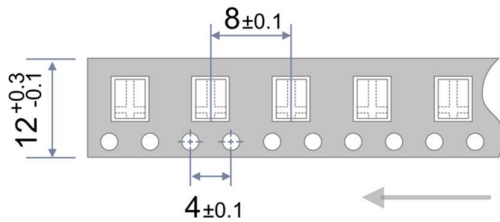
SBI – 1216Series

Low Ohmic EB Welded SMD Precision Resistor



| Solder Pad Dimensions | | | | | |
|-----------------------|-----|-----|-----|-----|------|
| Type | w | a | b | c | d |
| SBI-CM4-R0005 | 3.6 | 0.6 | 0.7 | 0.5 | 2.95 |

| Reel Information | |
|--------------------------|----------------|
| Reference Standard | DIN EN 60286-3 |
| Width of Reel | 12 mm |
| Number of parts per Reel | 3000 pcs |
| Diameter of Reel | 330 mm / 13" |



Example of Ordering Code

SBI-CM4-R0005-3-TR

