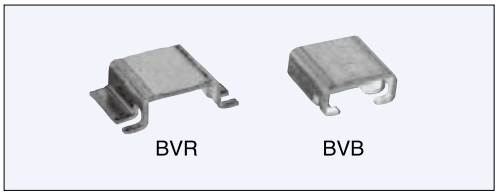
ISA-WELD SHUNT CHIP RESISTORS

BVR, BVB

Features

- Shunt chip resistor with 4 terminals developed for current detection in automotive motor drivers, inverters, wattmeters, etc.
- Excellent electrical and mechanical structure realized by the electron beam welding.

BVR Max. Current (Continuous) 160A / 0.2mΩ
BVB Max. Current (Continuous) 160A / 0.2mΩ



Type	Load Capacity (W) *	Resistance (Ω)	Tolerance (%)	Temp. Coefficient (20℃～60℃)	Internal Heat Resistance (℃/ W)a-b	Thickness t (mm)
BVR-Z-R0002	5	0.2m	±1, ±5	±50ppm/℃	4	1.20
BVR-Z-R0003	5	0.3m			5	0.85
BVR-Z-R0005	5	0.5m			8	0.42
BVR-M-R0007	4	0.7m			12	0.44
BVR-M-R001	4	1m			14	0.35
BVR-I-R002	4	2m			14	0.55
BVR-I-R003	3	3m			21	0.36

Resistance Material Z : Zeranin
M : ISA Manganin
I : ISA-Ohm

Specification
Operating Temp. : -55℃～+170℃
Free Air Load Capacity : 0.5W
Solder Reflow : Max.255℃ (t < 40sec)
Weight : 0.3g

⚠Precautions Refer to the power derating curve. Proper measures for heat radiation should be taken.

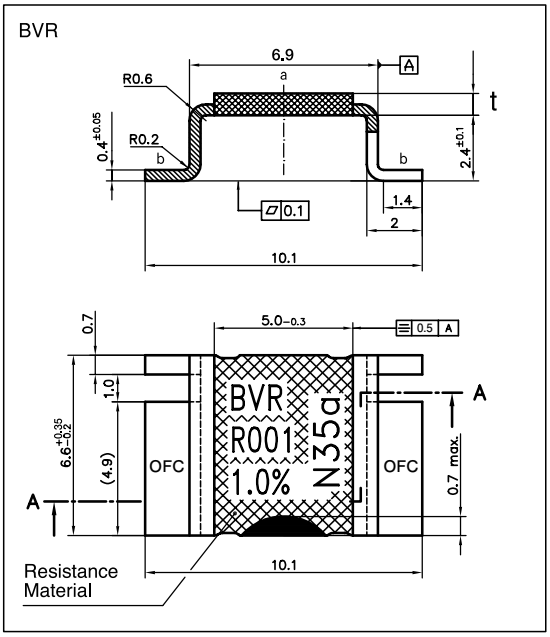
Type	Load Capacity (W) *	Resistance (Ω)	Tolerance (%)	Temp. Coefficient (20℃～60℃)	Internal Heat Resistance (℃/ W)a-b	Thickness t (mm)
BVB-Z-R0002	5	0.2m	±1, ±5	±50ppm/℃	4	1.20
BVB-Z-R0005	5	0.5m			8	0.45
BVB-M-R001	5	1m			15	0.35
BVB-I-R002	4	2m			14	0.55
BVB-I-R003	3	3m			21	0.36
BVB-I-R005	2	5m			33	0.36

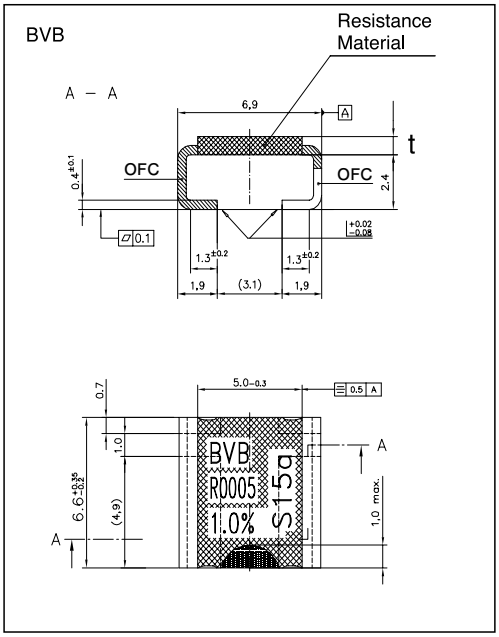
Resistance Material Z : Zeranin
M : ISA Manganin
I : ISA-Ohm

Specification
Operating Temp. : -55℃～+170℃
Free Air Load Capacity : 0.5W
Solder Reflow : Max.255℃ (t < 40sec)
Weight : 0.35g

⚠Precautions Refer to the power derating curve. Proper measures for heat radiation should be taken.

Shape & Dimensions





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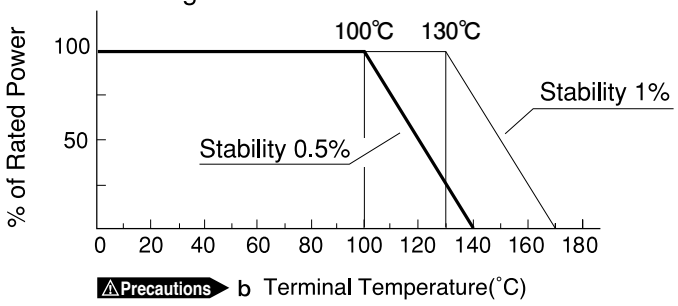
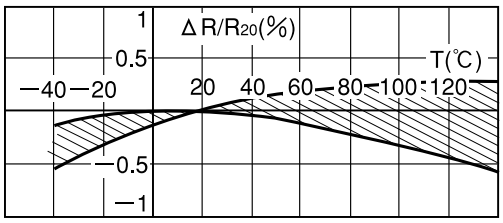
ISA-WELD SHUNT CHIP RESISTORS

BVR, BVB

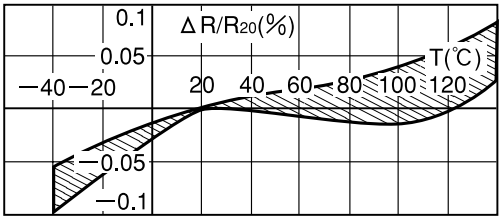
Power Derating Curve



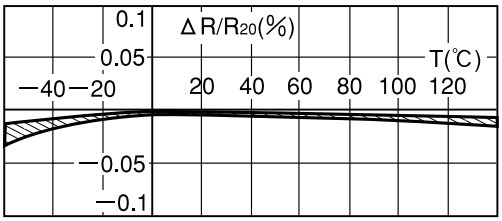
Resistance Change Versus Temp. (ISA-Manganin)



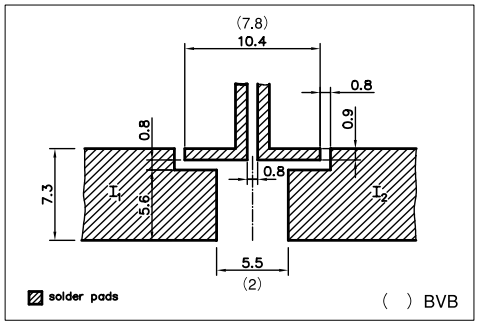
Resistance Change Versus Temp. (Zeranin)



Resistance Change Versus Temp. (ISA-Ohm)



Recommended PCB layout: BVR, BVB



How to order

BVB-Z-R0005 0.5mΩ ±5%
Type Resistance Tolerance

- Taping Specification

  BVR : DIN EN 60286-3 Tape width 24mm 1400pcs
  BVB : DIN EN 60286-3 Tape width 16mm 1400pcs

- Order for a single piece of standard in-stock items accepted
- AEC-Q200 Qualified

Standard Resistance (Stock)

BVR-Z-R0002	0.2mΩ±1%
BVR-Z-R0003	0.3mΩ±1%
BVR-Z-R0005	0.5mΩ±1%
BVR-M-R0007	0.7mΩ±1%
BVR-M-R001	1mΩ±1%
BVR-I-R002	2mΩ±1%

■ Performance

Parameters	Test Conditions	Specification
Thermal Shock	-65˚C, 25˚C, 125˚C, 25˚C 25cycles	±0.1%
Over load	5×Wattage Rating 5sec	±0.2%
Resistance to Solvents	IPA 3min	No damage
Low Temp. Storage and Operation	MIL-R-26E	±0.1%
Resistance to Soldering Heat	260˚C 10sec	±0.2%
Moisture Resistance	Near 100%RH, +25˚C, +65˚C, -10˚C 10cycles (10days)	±0.2%
Shock	50g's, 11ms	±0.2%
Vibration, High Frequency	MIL-STD-202 Method 204D-B	±0.2%
Load Life ※1	1.5Hr ON 0.5Hr OFF 2000Hr	±0.5%
Load Life ※2	1.5Hr ON 0.5Hr OFF 2000Hr	±1%
Storage Life at Elevated Temp.	MIL-STD-202 method 108A-F	±0.3%
High Temperature Exposure	140˚C, 2000Hr	±0.5%
Current Noise	MIL-STD-202 method 308	±0.01%
Voltage Coefficient	MIL-STD-202 method 309	linearity error less than 120dB
Thermal EMF(μV/˚C)	0~100˚C	2μV/˚C max
Frequency Characteristic	Inductance (1mΩ)	<3nH

※1 Treminal Temp. BVB : Max.150°C BVR : Max.100°C
※2 Treminal Temp. BVB : Max.140°C BVR : Max.130°C

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