

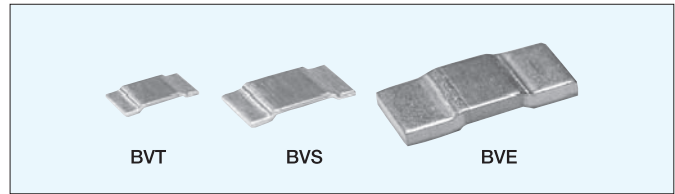
ISA-WELD SHUNT CHIP RESISTORS

BVT, BVS, BVE

BVT Max.Current (Permanent) 100A / 0.3mΩ

BVS Max.Current (Permanent) 160A / 0.2mΩ

BVE Max.Current (Permanent) 180A / 0.2mΩ



Type	Load Capacity (W) *	Resistance (Ω)	Tolerance (%)	Temp. Coefficient (20°C~60°C)	Internal Heat Resistance (°C/W)a-b	Thickness D1 (mm)	Thickness D2 (mm)
BVT-Z-R0003	3	0.3m	±1, ±2, ±5	±150ppm/°C	4	0.95	0.95
BVT-M-R0005	3	0.5m		±115ppm/°C	7	0.84	0.85
BVT-M-R001	3	1m		±50ppm/°C	14	0.42	0.42
BVT-M-R0013	3	1.3m		±50ppm/°C	16	0.42	0.33
BVT-I-R002	3	2m		±50ppm/°C	20	0.64	0.72
BVT-I-R003	2	3m		±50ppm/°C	30	0.42	0.48
BVT-I-R004	2	4m		±50ppm/°C	40	0.42	0.36
BVT-I-R005	1.5	5m		±50ppm/°C	50	0.42	0.36
BVT-I-R0068	1.5	6.8m		±50ppm/°C	60	0.42	0.36
BVT-I-R010	1	10m		±50ppm/°C	70	0.42	0.36

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

Specification
Operating Temp. : -55°C~+170°C
Free Air Load Capacity : 0.3W
Solder Reflow : Max.255°C (t < 40sec)
Weight : 0.15g

CAUTION Referring to power derating curve. Proper measures for heat radiation should be taken.

Type	Load Capacity (W) *	Resistance (Ω)	Tolerance (%)	Temp. Coefficient (20°C~60°C)	Internal Heat Resistance (°C/W)a-b	Thickness D1 (mm)	Thickness D2 (mm)
BVS-Z-R0002	5	0.2m	±1, ±2, ±5	±200ppm/°C	3	1.42	1.42
BVS-M-R0003	5	0.3m		±150ppm/°C	4.5	1.42	1.42
BVS-M-R0005	5	0.5m		±70ppm/°C	8	0.86	0.86
BVS-M-R0007	5	0.7m		±60ppm/°C	11	0.60	0.60
BVS-M-R001	4	1m		±50ppm/°C	15	0.42	0.42
BVS-A-R001	5	1m		±50ppm/°C	8	1.30	1.30
BVS-A-R0015	4.5	1.5m		±50ppm/°C	12	0.64	0.97
BVS-A-R002	4	2m		±50ppm/°C	16	0.64	0.64
BVS-A-R0028	3.5	2.8m		±50ppm/°C	20	0.64	0.47
BVS-A-R003	3	3m		±50ppm/°C	22	0.42	0.43
BVS-A-R004	2.5	4m	±50ppm/°C	30	0.32	0.32	
BVS-I-R001	5	1m	±50ppm/°C	8	1.30	1.32	
BVS-I-R002	4	2m	±50ppm/°C	16	0.64	0.66	
BVS-I-R003	3	3m	±50ppm/°C	24	0.42	0.44	
BVS-I-R004	2.5	4m	±50ppm/°C	32	0.40	0.35	
BVS-I-R005	2	5m	±50ppm/°C	50	0.40	0.35	

Resistance Material Z : Zeranin
M : ISA Manganin
A : Alu-Chrom
I : ISA-Ohm

Specification
Operating Temp. : -55°C~+170°C
Free Air Load Capacity : 0.5W
Solder Reflow : Max.255°C (t < 40sec)
Weight : 0.2g

CAUTION Referring to power derating curve. Proper measures for heat radiation should be taken.

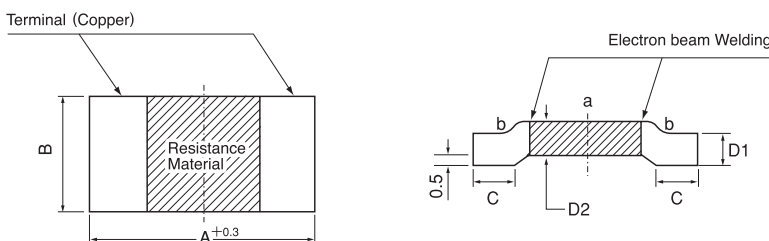
Type	Load Capacity (W) *	Resistance (Ω)	Tolerance (%)	Temp. Coefficient (20°C~60°C)	Internal Heat Resistance (°C/W)a-b	Thickness D1 (mm)	Thickness D2 (mm)
BVE-M-R0002	7	0.2m	±1, ±2, ±5	±50ppm/°C	10	1.42	1.42
BVE-M-R0003	7	0.3m				0.86	0.94
BVE-M-R0005	7	0.5m				0.50	0.56
BVE-M-R0006	7	0.6m				0.48	0.48
BVE-A-R0005	7	0.5m				1.42	1.63
BVE-A-R001	7	1m				0.86	0.91

Resistance Material M : ISA Manganin
A : Alu-Chrom

Specification
Operating Temp. : -55°C~+170°C
Free Air Load Capacity : 1W
Solder Reflow : Max.255°C (t < 40sec)
Weight : 1.2g

CAUTION Referring to power derating curve. Proper measures for heat radiation should be taken.

Shape & Dimensions



Type	A	B	C
BVT	6.35	3.05	1.14
BVS	10	5.2	2
BVE	15	7.75	4.2



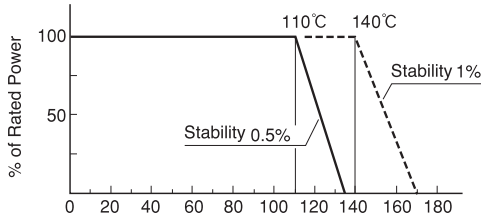
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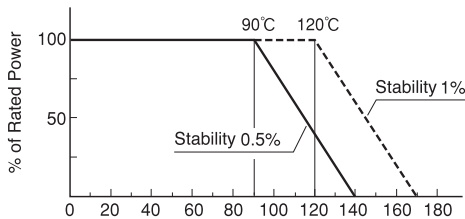
ISA-WELD SHUNT CHIP RESISTORS **BVT, BVS, BVE**

Power Derating Curve BVT



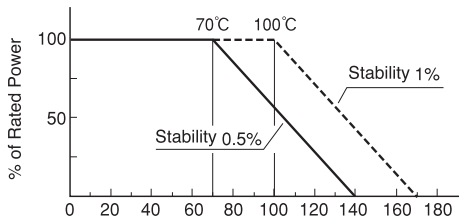
CAUTION b Terminal Temperature (°C)

Power Derating Curve BVS



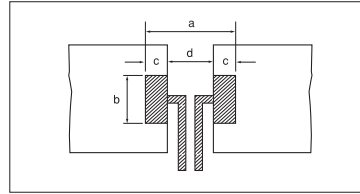
CAUTION b Terminal Temperature (°C)

Power Derating Curve BVE



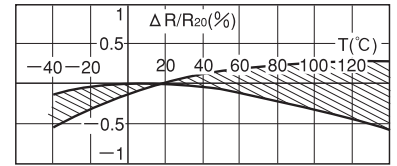
CAUTION b Terminal Temperature (°C)

Proposal for PCB-Layout

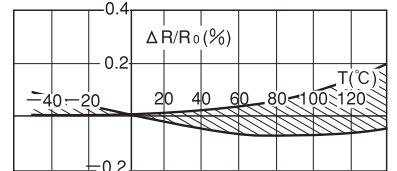


Type	Dimensions (mm)			
	a	b	c	d
BVT	7	3.4	1.8	3.4
BVS	11	6.2	2.7	5.6
BVE	16	8.7	5.2	5.6

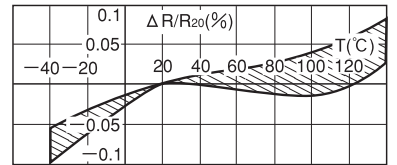
Resistance Change Versus Temp.(ISA-Manganin)



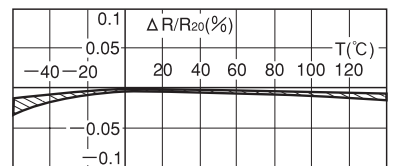
Resistance Change Versus Temp.(Alu-Chrom)



Resistance Change Versus Temp.(Zeranin)



Resistance Change Versus Temp.(ISA-Ohm)



Performance

Parameters	Test Conditions	Specification	Typical Test Data
Thermal Shock	-65°C, 25°C, 125°C, 25°C 25cycles	±0.2%	±0.1%
Over load	5×Wattage Rating 5sec	±0.2%	±0.1%
Resistance to Solvents	IPA 3min	no damage	no damage
Low Temp. Storage and Operation	MIL-R-26E	±0.1%	±0.05%
Resistance to Soldering Heat	260°C 10sec	±0.2%	±0.05%
Moisture Resistance	Near 100%RH, +25°C, +65°C, -10°C 10cycles (10days)	±0.2%	±0.04%
Shock	50g's, 11ms	±0.2%	±0.1%
Vibration, High Frequency	MIL-STD-202 Method 204D-B	±0.2%	±0.03%
Load Life ^(*)	Wattage Rating(1.5Hr ON-0.5Hr OFF) 2000Hr	±0.5%	±0.05%
Load Life ^(*)	Wattage Rating(1.5Hr ON-0.5Hr OFF) 2000Hr	± 1 %	±0.1%
Storage Life at Elevated Temp.	MIL-STD-202 method 108A-F	±0.3%	±0.1%
High Temperature Exposure	140°C, 2000Hr	±0.2%	-0.1%
Current Noise	MIL-STD-202 method 308	±0.01%	none
Voltage Coefficient	MIL-STD-202 method 309	linearity error less than 120dB	
Thermal EMF(μV / °C)	0~100°C	2μV/°C max	0.05μV
Frequency Characteristic	Inductance	<3nH	1nH

★1 BVT :Max.110°C, BVS:Max. 90°C, BVE :Max.70°C
 ★2 BVT :Max.140°C, BVS:Max.120°C, BVE :Max.100°C

How to order

BVE-M-R0002 0.2mΩ ±1%
 Type Resistance Tolerance

● Standard Resistance(stock)

BVS-Z	0.2			(mΩ)	±1%
BVS-M	0.3	0.5	1	(mΩ)	±1%
BVS-A	1	2	3	4	(mΩ) ±1%
BVE-M	0.2	0.3		(mΩ)	±5%
BVE-A	0.5	1		(mΩ)	±5%

● Taping Specification

BVT	: DIN EN 60286-3	12mm	5000 pcs
BVS	: DIN EN 60286-3	16mm	3000 pcs
BVE	: DIN EN 60286-3	24mm	2000 pcs



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