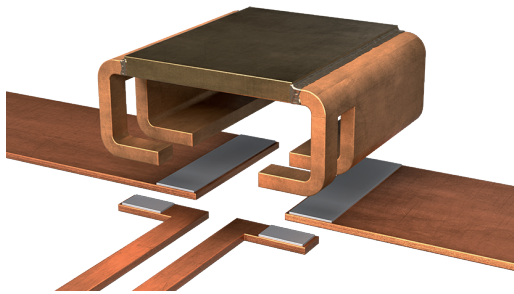




## ISA-WELD® // PRECISION RESISTORS

### BVB // Size 2725



#### Features

- Power rating up to 12 W <sup>1</sup>
- 4-terminal connection
- Excellent long-term stability
- Ideal for mounting on DCB/IMS substrate
- AEC-Q200 qualified
- RoHS 2011/65/EU compliant



#### Applications

- Current sensor for power hybrid applications
- High current applications for the automotive market
- Frequency converters
- Power modules

#### Technical data <sup>1</sup>

Resistance values	<b>mOhm</b>	0.2 to 5
Tolerance	<b>%</b>	1 / 5
Temperature coefficient (20-60 °C)	<b>ppm/K</b>	from 20
Applicable temperature range	<b>°C</b>	-65 to +170
Power rating <b>P<sub>100°C</sub></b>	<b>W</b>	up to 5
Power rating <b>P<sub>70°C</sub></b>	<b>W</b>	up to 12
Internal heat resistance (R <sub>thi</sub> )	<b>K/W</b>	from 4
Inductance	<b>nH</b>	<3
Stability (Nominal load) deviation after 2000h, T <sub>K</sub> = Terminal temperature		<0.5% (T <sub>K</sub> = 100 °C) <1.0% (T <sub>K</sub> = 140 °C) in covered condition

<sup>1</sup> For detailed information see table on page 3

#### Ordering code

BVB - Z - R0005 - 1.0

.....	Tolerance
.....	Resistance value [Ohm] / „R” represents decimal point
.....	Material (ZERANIN®)
.....	Type

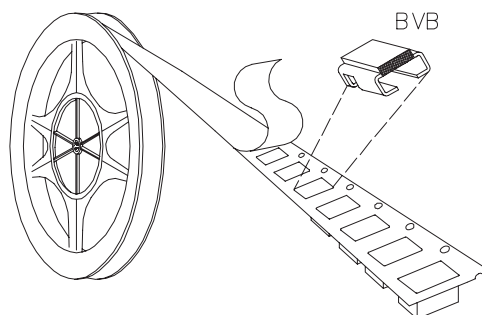
**BVB // Size 2725****Recommended solder profile**

Reflow-, IR-soldering

Temperature	°C	260	255	217
Time	sec	peak	40	90

**Tape and reel information**

Specification	DIN EN 60286-3		
Tape width	mm	16	
Reel size	inch	13	
Parts per reel	pcs	1400	
Packaging weight	g	439	

**Specification**

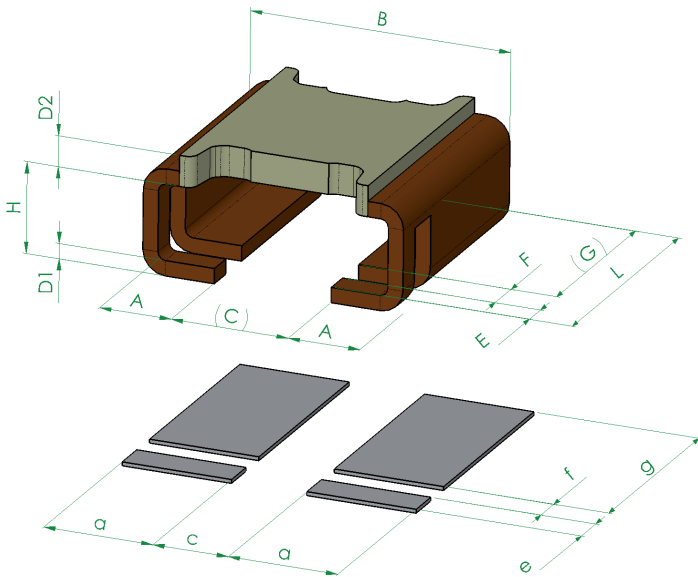
Parameters	Test conditions	Specified values
Temperature Cycling	2000 cycles (-55 °C to +150 °C)	±0.5%
Low Temperature Storage and Operation	-65 °C for 250 h	±0.1%
Resistance to Soldering Heat	260 °C for 10 sec / 8h steam aging	n.a.
Moisture Resistance	MIL-STD-202 method 106	±0.1%
Mechanical Shock	100 g, 6 ms half sine	±0.2%
Vibration, High Frequency	10 g, 10-2000 Hz, 24 h each axis	±0.2%
Operational Life	2000 h, T <sub>k</sub> max at nominal load	±1.0%, T <sub>k</sub> = 140 °C
High Temperature Exposure	2000 h / 170 °C	±1.0% (in covered condition) *
Bias Humidity	+85 °C, 85 r.F., 1000 h	±0.5%

\* for MANGANIN® and ZERANIN®30



**BVB // Size 2725**

Mechanical dimensions and pcb-layout proposal (Reflow-soldering) [mm] // Drawing no. Z-YH-180b



type	A	B	C	D1	D2	E	F	G	H	L
BVB-Z-R0002	1.9 ±0.2	6.9 ±0.2	3.1	0.4 ±0.1	1.2 ±0.1	0.7 ±0.1	1.0 ±0.1	4,9	2.4 ±0.1	6.6 +0.35 / -0.2
BVB-Z-R0003	1.9 ±0.2	6.9 ±0.2	3.1	0.4 ±0.1	0.81 ±0.1	0.7 ±0.1	1.0 ±0.1	4,9	2.4 ±0.1	6.6 +0.35 / -0.2
BVB-Z-R0005	1.9 ±0.2	6.9 ±0.2	3.1	0.4 ±0.1	0.42 ±0.1	0.7 ±0.1	1.0 ±0.1	4,9	2.4 ±0.1	6.6 +0.35 / -0.2
BVB-M-R0007	1.9 ±0.2	6.9 ±0.2	3.1	0.4 ±0.1	0.44 ±0.1	0.7 ±0.1	1.0 ±0.1	4,9	2.4 ±0.1	6.6 +0.35 / -0.2
BVB-M-R001	1.9 ±0.2	6.9 ±0.2	3.1	0.4 ±0.1	0.35 ±0.1	0.7 ±0.1	1.0 ±0.1	4,9	2.4 ±0.1	6.6 +0.35 / -0.2
BVB-V-R002	1.9 ±0.2	6.9 ±0.2	3.1	0.4 ±0.1	0.34 ±0.1	0.7 ±0.1	1.0 ±0.1	4,9	2.4 ±0.1	6.6 +0.35 / -0.2
BVB-I-R002	1.9 ±0.2	6.9 ±0.2	3.1	0.4 ±0.1	0.55 ±0.1	0.7 ±0.1	1.0 ±0.1	4,9	2.4 ±0.1	6.6 +0.35 / -0.2
BVB-I-R003	1.9 ±0.2	6.9 ±0.2	3.1	0.4 ±0.1	0.36 ±0.1	0.7 ±0.1	1.0 ±0.1	4,9	2.4 ±0.1	6.6 +0.35 / -0.2
BVB-I-R004	1.9 ±0.2	6.9 ±0.2	3.1	0.4 ±0.1	0.36 ±0.1	0.7 ±0.1	1.0 ±0.1	4,9	2.4 ±0.1	6.6 +0.35 / -0.2
BVB-I-R005	1.9 ±0.2	6.9 ±0.2	3.1	0.4 ±0.1	0.36 ±0.1	0.7 ±0.1	1.0 ±0.1	4,9	2.4 ±0.1	6.6 +0.35 / -0.2

solder pad type :	a	c	e	f	g
BVB	2.9	2.0	0.9	0.8	5.6

Type	Value [mΩ]	R <sub>thi</sub> [K/W]	TCR [ppm/K]	P <sub>70°C</sub>	P <sub>T<sub>K</sub> &gt; 100°C</sub> T <sub>K</sub> = 170°C - (R <sub>thi</sub> x P)
BVB-Z-R0002	0.2	4	<20	12 W	5
BVB-Z-R0003	0.3	5	<20	11 W	5
BVB-Z-R0005	0.5	8	<20	9 W	5
BVB-M-R0007	0.7	12	<20	8 W	4
BVB-M-R001	1.0	14	<50	7 W	4
BVB-I-R002	2.0	14	<50	6 W	4
BVB-V-R002	2.0	17	<50	6 W	4
BVB-I-R003	3.0	21	<50	5 W	3
BVB-I-R004	4.0	28	<50	4 W	2
BVB-I-R005	5.0	33	<50	3 W	2

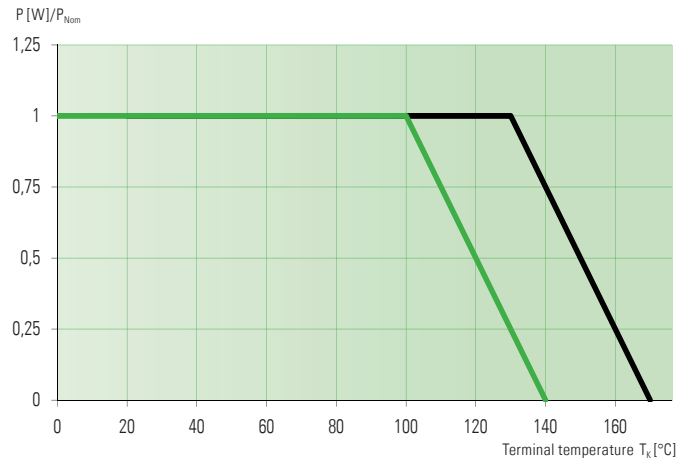
Material type I=ISAOHM®, M=MANGANIN®, Z=ZERANIN®, V=NOVENTIN®



**BVB // Size 2725**

**Power derating curve at 100 °C**

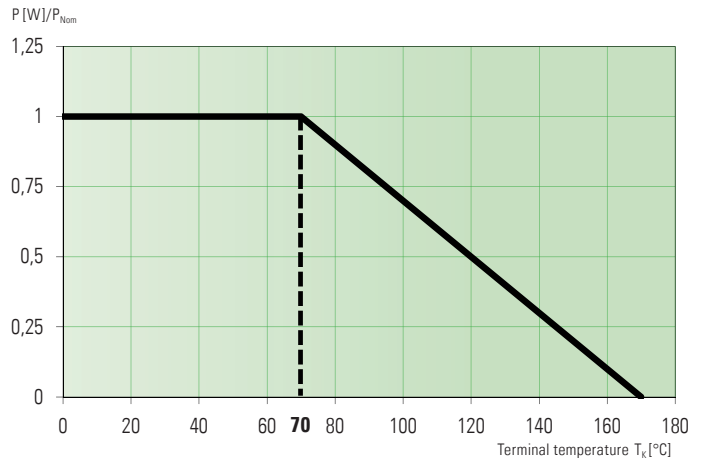
Example: BVB-Z-R0005



— Stability < 1.0% (in covered condition)  
 — Stability < 0.5%

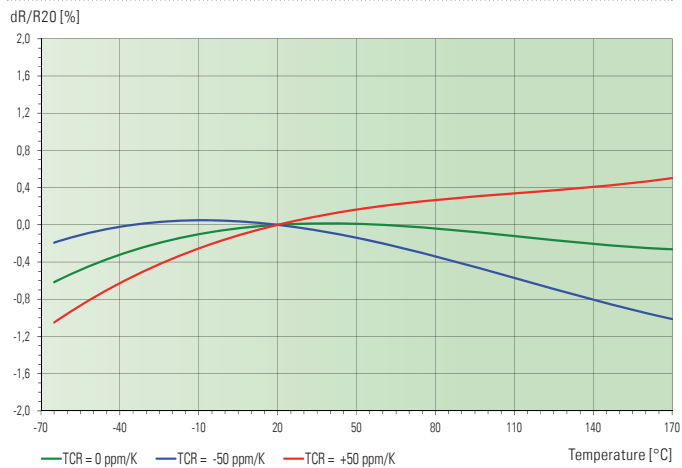
**Power derating curve at 70 °C**

Example: BVB-I-R002

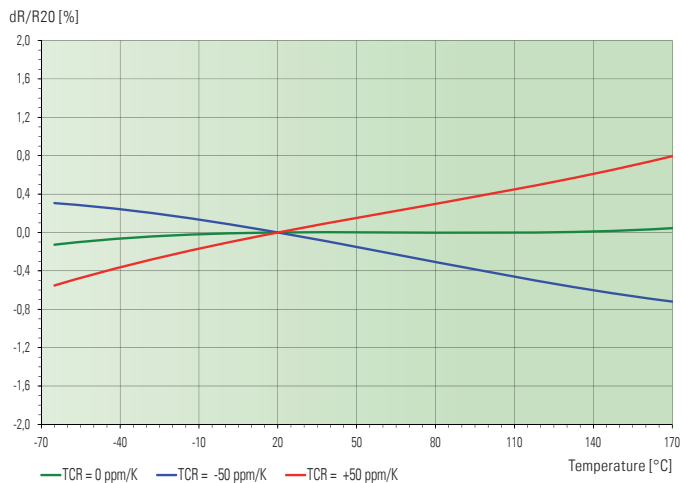


— Stability < 1.0% (in covered condition)

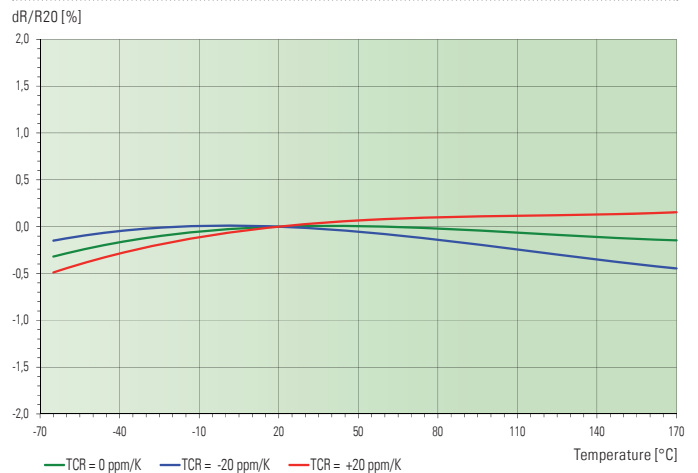
**Temperature dependence of the electrical resistance of MANGANIN® resistors**



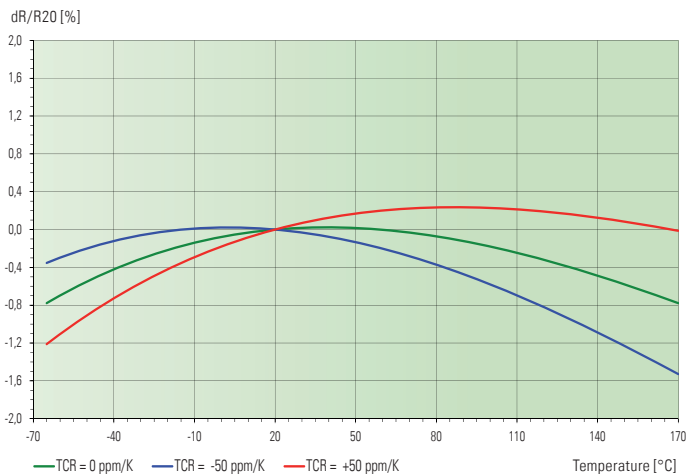
**Temperature dependence of the electrical resistance of ISOHM® resistors**



**Temperature dependence of the electrical resistance of ZERANIN® resistors**



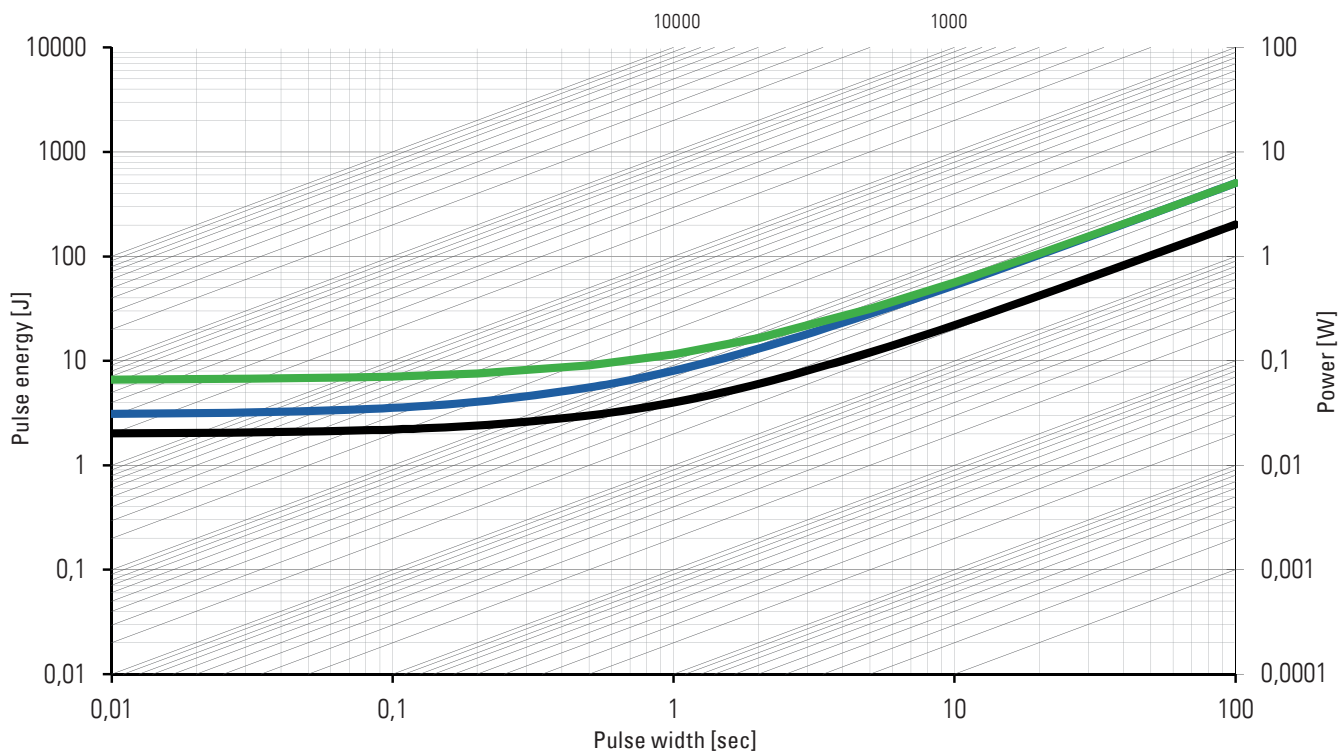
**Temperature dependence of the electrical resistance of NOVENTIN® resistors**





**BVB // Size 2725**

**Maximum pulse energy respectively pulse power for permanent operation**



- This curve is valid for the resistance value R0002
- This curve is valid for the resistance value R0005
- This curve is valid for the resistance value R005

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