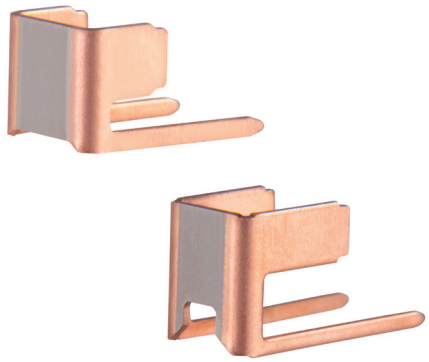
ISABELLENHÜTTE
Innovation by Tradition

ISA-WELD® // PRECISION RESISTORS

KVH



Features

- 3 W permanent power
- Continuous current load up to 78 A
- Heavy copper connectors
- Excellent long-term stability
- High application temperature range -55 to +170 °C due to special design
- Max. solder temperature up to 350 °C / 30 sec
- AEC-Q200 qualified

RoHS

Applications

- High current applications for the automotive market
- EPS
- ABS

Technical data

Resistance values	**mOhm**	0.5 / 1
Tolerance	**%**	1 / 5
Temperature coefficient (20-60 °C)	**ppm/K**	< 100
Applicable temperature range	**°C**	-55 to +170
Power rating	**W**	3
Internal heat resistance (R_{thi})	**K/W**	see table on page 3
Inductance	**nH**	< 3
Stability (Nominal load) deviation after 2000h, T_K = Terminal temperature		< 0.5 % (T_K=105 °C) < 1.0 % (T_K=135 °C)

Ordering code

KVH - M - R0005 - 5.0 - A

- Layout
- Tolerance
- Resistance value [Ohm] / „R“ represents decimal point
- Material (MANGANIN®)
- Type

KVH

Recommended solder profile

Reflow- and IR-soldering				
Temperature	**°C**	260	255	217
Time	**sec**	peak	40	90

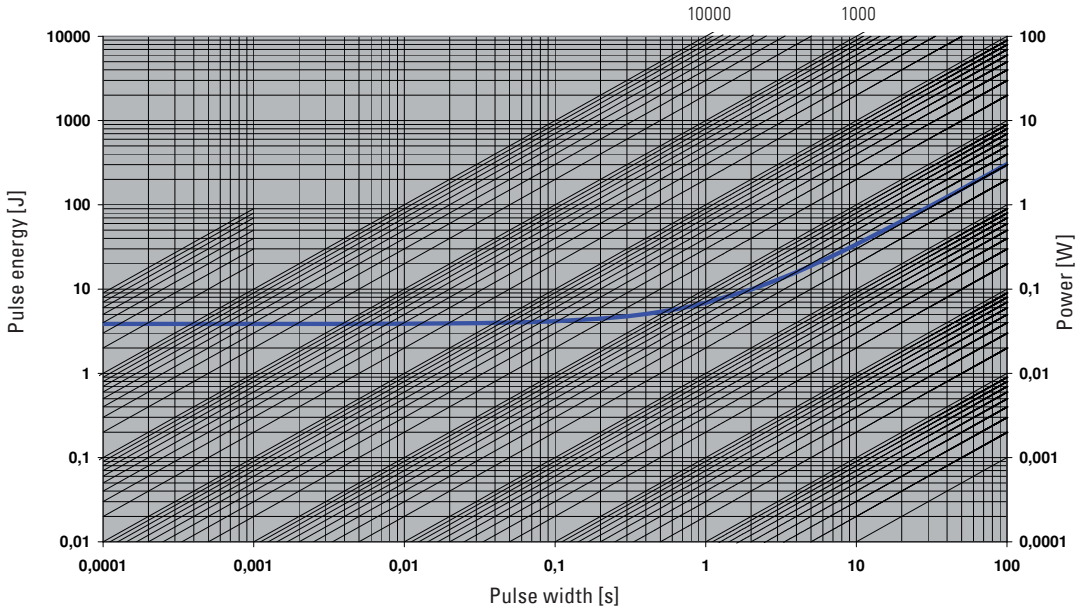
Packaging

In tubes, evacuated and refilled with dry nitrogen

Specification

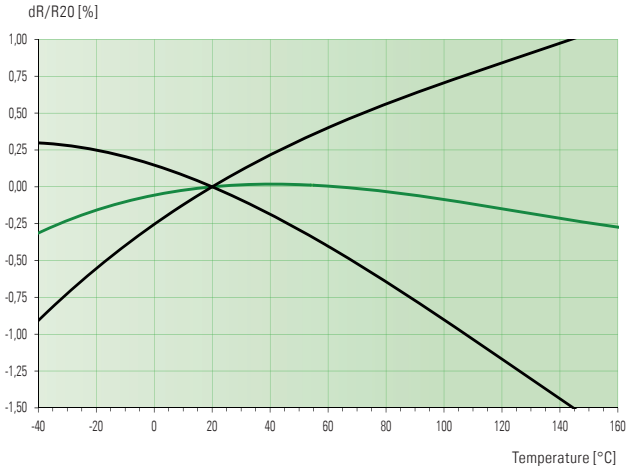
Parameters	Test conditions	Specified values
Temperature Cycling	2000 cycles (-55 °C to +150 °C)	±0.5 %
Low Temperature Storage and Operation	-65 °C for 24 h	±0.1 %
Resistance to Soldering Heat	260 °C for 10 sec / 8h steam aging	n.a.
Moisture Resistance	MIL-STD-202 method 106	±0.1 %
Mechanical Shock	100 g, 6 ms half sine	±0.2 %
Vibration, High Frequency	20 g, 10-2000 Hz	±0.2 %
Operational Life	2000 h, TK max at nominal load	±1.0 %, TK = 135 °C
High Temperature Exposure	2000 h / 170 °C	±1.0 %
Bias Humidity	+85 °C, 85 r.F., 1000 h	±0.5 %

Maximum pulse energy respectively pulse power for permanent operation



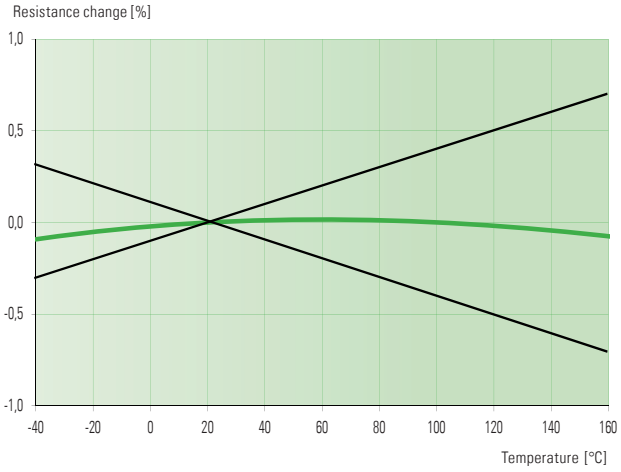
KVH

Temperature dependence of the electrical resistance of KVH-M resistors (M=MANGANIN®)



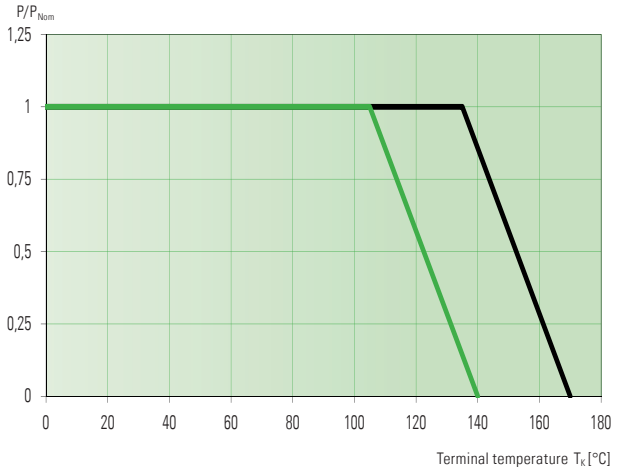
Limiting curve
Typical temperature dependence of a KVH resistor

Temperature dependence of the electrical resistance of KVH-I resistors (I=ISAOHM®)



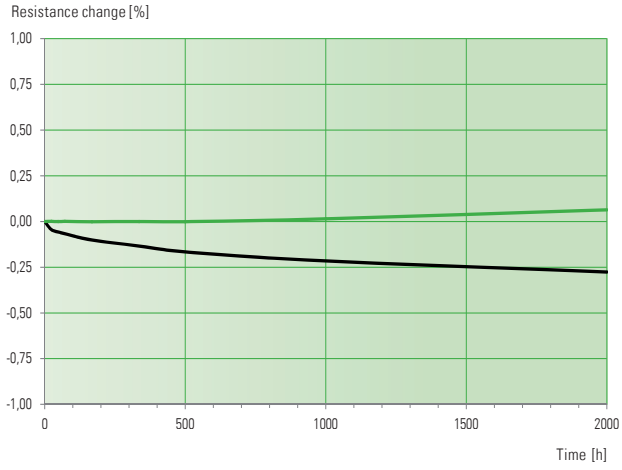
Limiting curve
Typical temperature dependence of a KVH resistor

Power derating curve (0.5 mOhm)



Stability < 1.0 %
Improved stability < 0.5 %

Long-term stability of KVH-M and KVH-I resistors at 140 °C. Typical run of the curve.



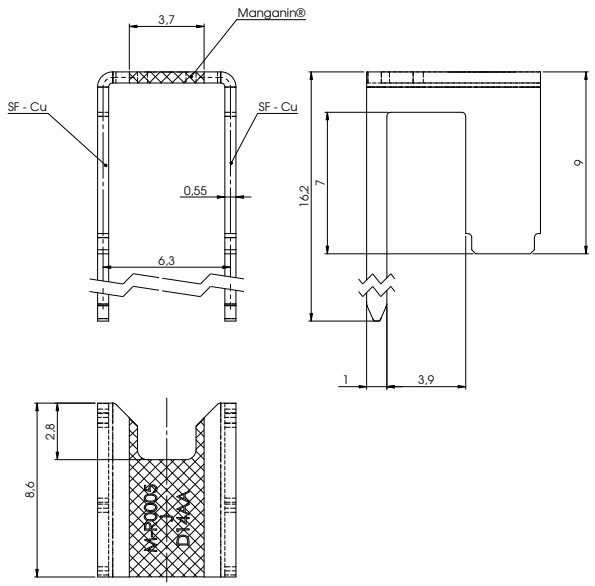
M=MANGANIN®
I=ISAOHM®

Type	Value [mΩ]	Tolerance [%]	Thickness [mm]	R_{thi} [K/W]	TC [ppm/K]	Power [W]
KVH-M-R0005-5.0-A	0.5	5.0	0.55	12	< 100	3
KVH-M-R0005-5.0-B	0.5	5.0	0.55	10	< 100	3
KVH-I-R001-1.0-A	1.0	1.0	0.72	20	< 100	3

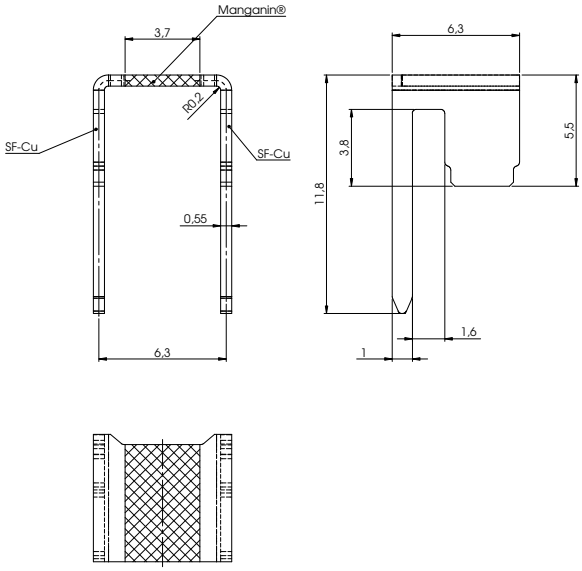
Material type I=ISAOHM®, M=MANGANIN®

KVH

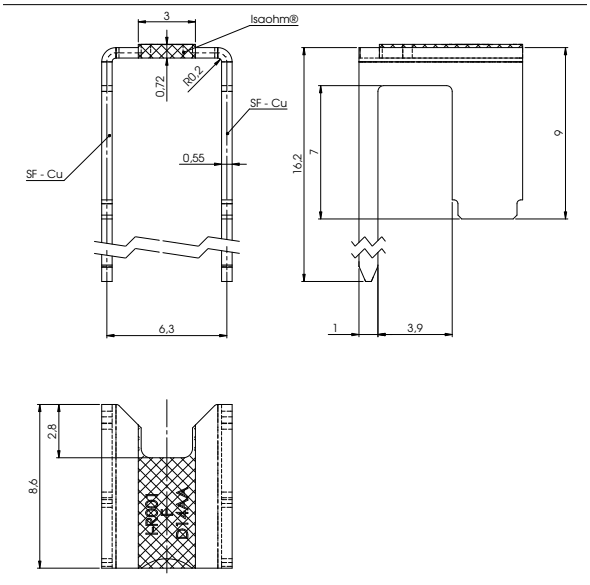
Mechanical dimensions [mm]
KVH-M-R0005-5.0-A



Mechanical dimensions [mm]
KVH-M-R0005-5.0-B



Mechanical dimensions [mm]
KVH-I-R001-1.0-A



Warranty // All information regarding the suitability, workability and applicability of our products, all technical advice and other information are provided to the best of our knowledge and belief, but shall not discharge the buyer from his own examinations and tests. This document is subject to change without notice.

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