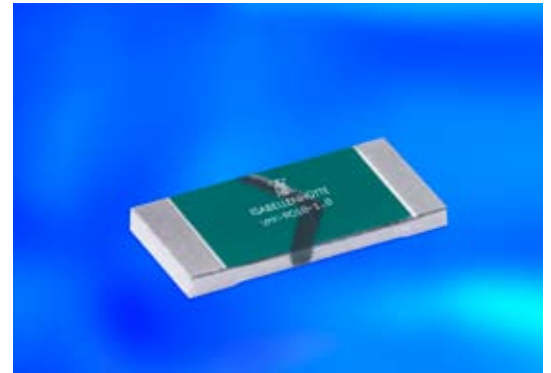


ISA-PLAN® - SMD Präzisionswiderstände / SMD precision resistors

TECHNISCHE DATEN / TECHNICAL DATA		
Widerstandswerte	Resistance values	10 mOhm - 500 mOhm
Toleranz	Tolerance	1 %, 2 %, 5 %
Temperaturkoeffizient	Temperature coefficient (tcr)	< 20 ppm/K (20 °C - 60 °C)
Temperaturbereich	Applicable temperature range	-55 °C to +170 °C
Belastbarkeit	Load capacity	1 W
Innerer Wärmewiderstand (R_{thi})	Internal heat resistance (R_{thi})	< 60 K/W für/for $R < 25$ mOhm
Isolationsspannung	Dielectric withstanding voltage	200 V
Induktivität	Inductance	< 3 nH
Stabilität (Nennlast) Abweichung T_K = Kontaktstellentemperatur Stability (nominal load) deviation T_K = Terminal temperature		< 0.5 % nach/after 2000 h (T_K = 70 °C) < 0.7 % nach/after 2000 h (T_K = 110 °C)

MERKMALE / FEATURES

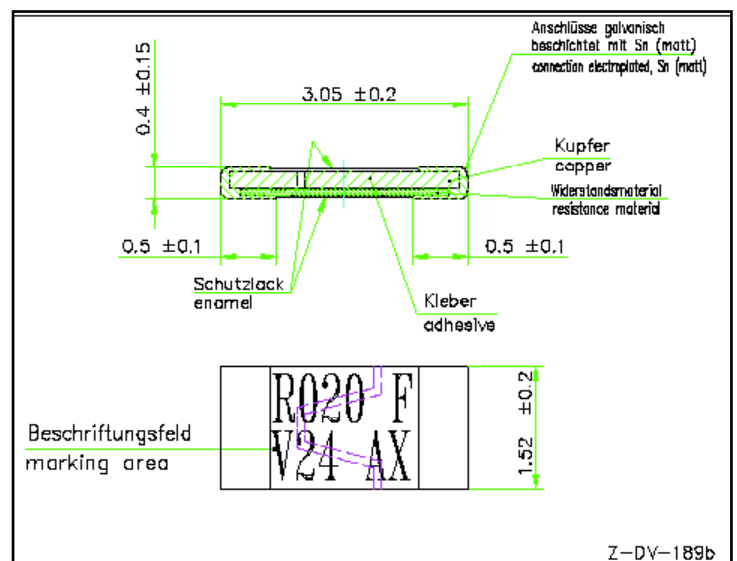
- 1 Watt Dauerleistung bei 70 °C
- 1 Watt permanent power at 70 °C
- Dauerströme bis 10 A (10 mOhm)
- Constant current up to 10 Amps (10 mOhm)
- Kleine Baugröße (1206)
- Small size (1206)
- Sehr hohe Pulsbelastbarkeit
- High pulse power rating
- Sehr gute Langzeitstabilität
- Excellent long term stability
- Bauteilemontage: Reflow-, und IR-Löten
- Mounting: reflow-, and infrared soldering
- AEC Q 200 in Bearbeitung
- AEC Q 200 in process



Bauform/Size 1206

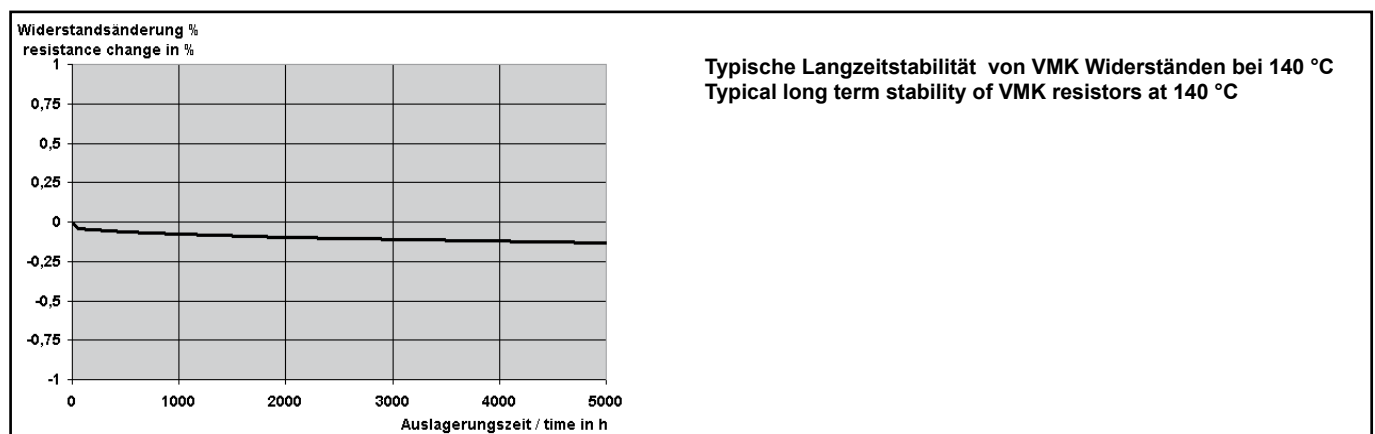
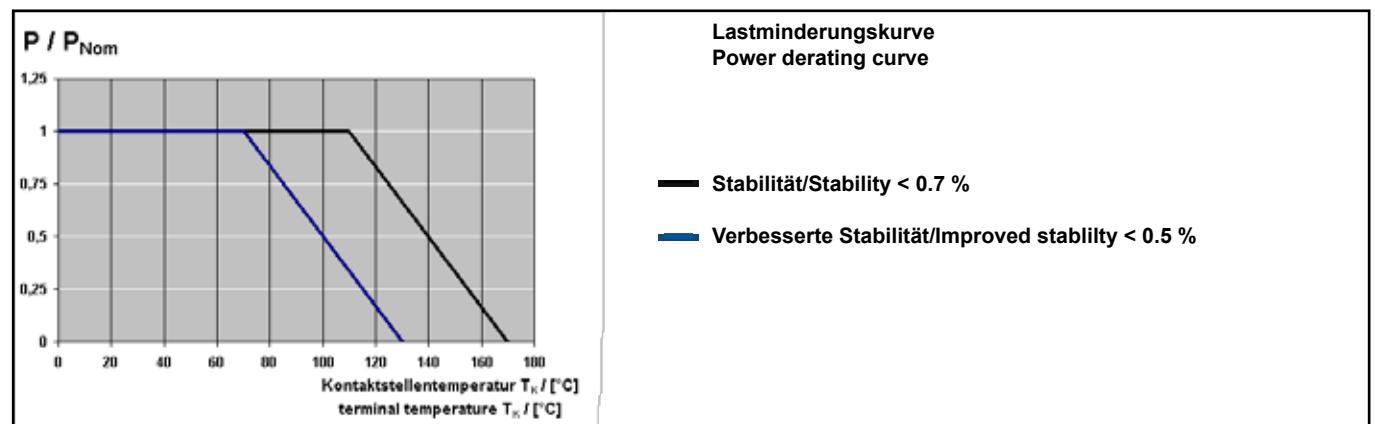
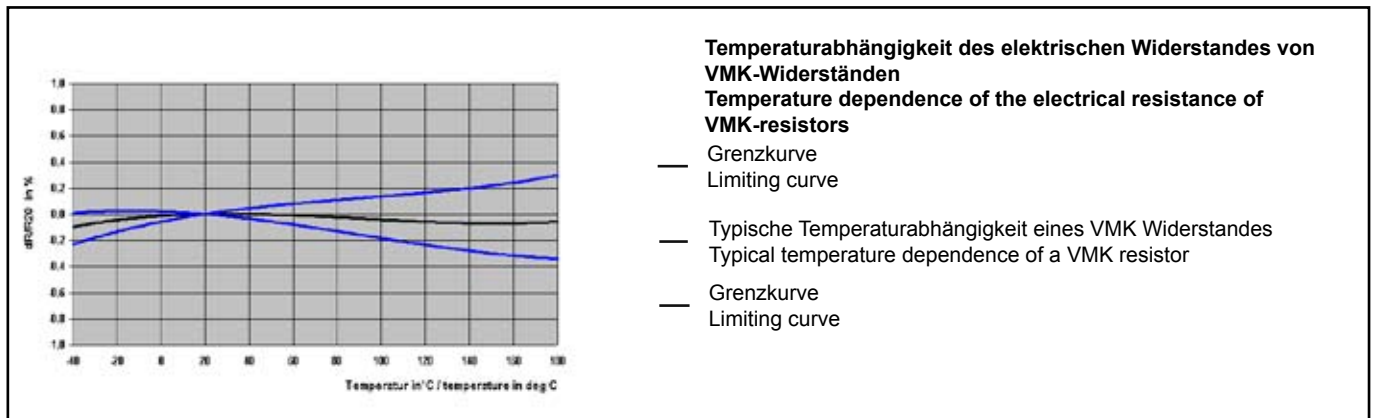
APPLIKATIONEN / APPLICATION

- Messwiderstand für Leistungshybride
- Current sensor for power hybrid applications
- Steuergeräte in der Automobiltechnik
- Control systems for the automotive market
- Leistungsmodule
- Power modules
- Frequenzumrichter
- frequency converters
- Schaltnetzteile
- Switch mode power supplies

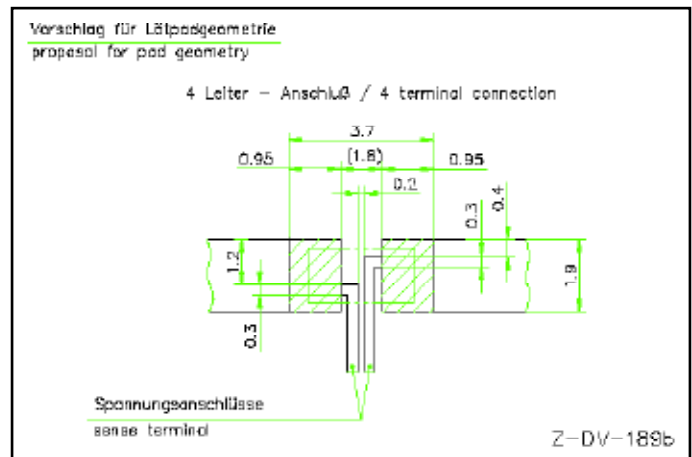
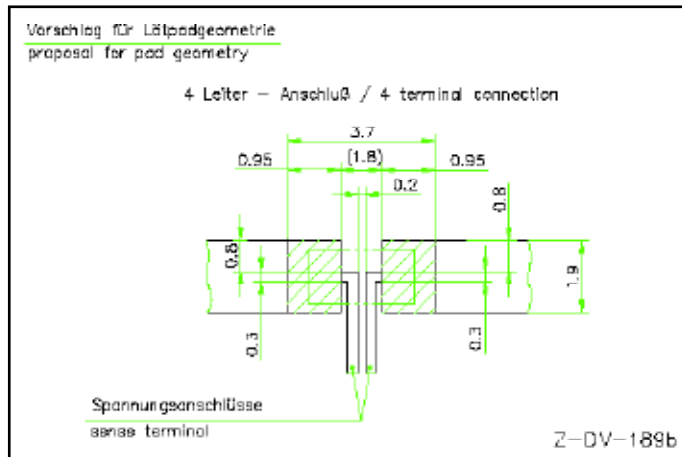


Zu Serienbeginn ohne Beschriftung
At start of series release without marking

TK, Lastminderung und Langzeitstabilität / TCR, power derating and long term stability



Vorschlag für Leiterplatten Layout (Reflowlötén) Proposal for pcb-layout (reflow soldering)



Lötprofil Vorschlag / Recommended solder profile			
Reflow-, IR-löten			
Reflow, infrared soldering			
Temperatur	260 °C	255 °C	217 °C
Zeit (s)	peak	40	90
RoHS 2002/95/EG konform seit Produktstart. Ausführliche Informationen erhalten Sie auf unserer Homepage: www.isabellenhuette.de			
RoHS 2002/95/EC compliance since product launch. For more information please visit our website: www.isabellenhuette.de			

Layout, wenn TK < 20 ppm/K notwendig für R zwischen 30 und 80 mOhm
Layout if TK < 20 ppm/K is required for R inbetween 30 and 80 mOhm

GURTINFORMATIONEN TAPE & REEL INFORMATION	
Norm / Specification	DIN EN 60286-3
Anzahl Bauteile/Parts per reel	15000*
Gurt Material/Tape material	Kunststoff/plastic Karton/cardboard
Lagerbedingungen des Gurtes: T: 5° - 35° C; relative Luftfeuchte: 40 - 85%; kein direktes Sonnenlicht	
Storage conditions of reel: T: 5° - 35° C; humidity: 40 - 85%; no direct sunlight	

* abhängig vom Gurtmaterial/depends on Tape material

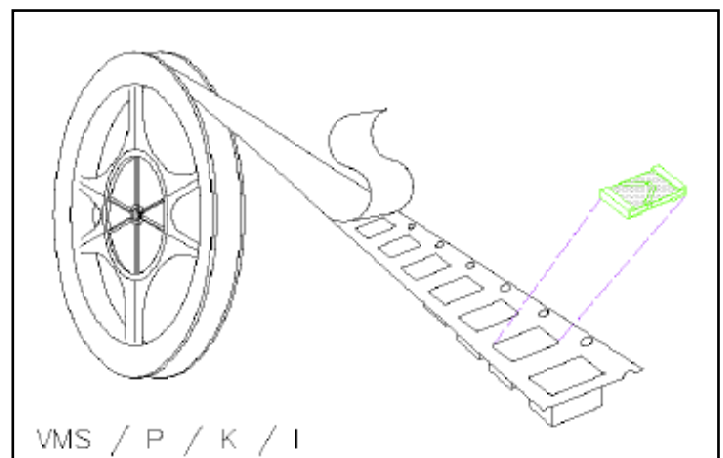
BESTELLBEZEICHNUNG / ORDERING CODE		
VMK-R010-1.0		
Typ	Widerstandswert	Toleranz
Type	Resistance value	Tolerance
VMK	10 mOhm	1.0 %

Gewährleistung

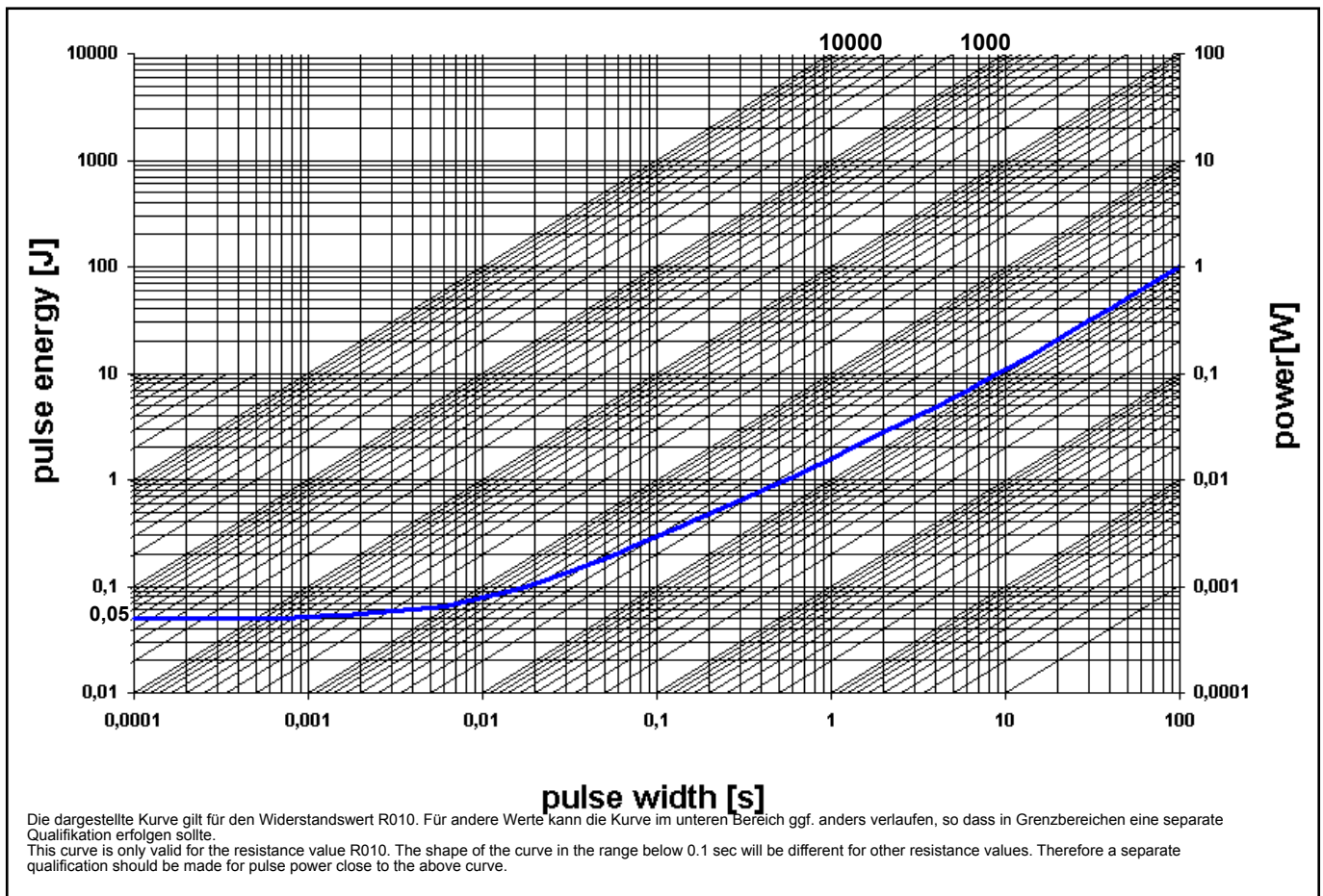
Alle Angaben über Eignung, Verarbeitung und Anwendung unserer Produkte, technische Beratung und sonstige Angaben erfolgen nach bestem Wissen, befreien den Käufer jedoch nicht von eigenen Prüfungen und Versuchen.

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.



Grenzkurve für maximale Pulsenergie bzw. Pulsleistung für Dauerbetrieb Maximum puls energy resp. pulse power for continous operation



Spezifikation/Specification AEC Q 200			
Parameters	Test Conditions	Specified values	Typical test data
Maximum Temperature for full power operation	110 °C	110 °C	
Working Temperature	-55 to 170 °C	-55 to 170 °C	
Thermal Shock	MIL-STD-202 method 107-B1	±0.1 %	±0.05%
Solderability	MIL-STD-202 method 208	> 95 % coverage	
Resistance to Solvents	MIL-STD-202 method 215, 2.1a, 2.1d	no damage	
Low Temperature Storage and Operation	MIL-STD-26E	±0.1 %	±0.02
Resistance to Soldering Heat	MIL-STD-202 method 210	±0.1 %	±0.05
Moisture Resistance	MIL-STD-202 method 106	±0.1 %	±0.05
Mechanical shock	MIL-STD-202 method 213-A	±0.1 %	±0.02
Vibration, High Frequency	MIL-STD-202 method 204-B	±0.2 %	±0.05
Operational Life	MIL-STD-26E	±0.7 %	±0.5
High Temperature Exposure	MIL-STD-202 method 108-F	±0.5 %	±0.3
High Temperature Exposure	140 °C, 2000 h	±0.3 %	±0.1
Current Noise	MIL-STD-202 method 308	n. a. for R< 10hm	
Voltage Coefficient (%/V)	MIL-STD-202 method 309	linearity error less than 120dB	
Resistance Temperature Characteristic	MIL-STD-202 method 304 (20-60°C)	<20 ppm/K	10 ppm/K
Thermal EMF	0 - 100 °C	2 µV/ K max.	0.5µ/ K
Frequency Characteristic (R<20mOhm)	inductance	< 2 nH	< 0.5