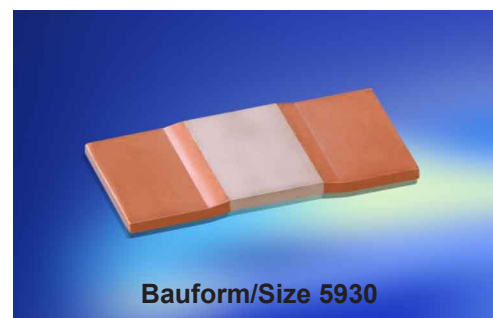


# ISA-WELD® - SMD Präzisionswiderstände / SMD precision resistors

| TECHNISCHE DATEN / TECHNICAL DATA                                                                                                    |                                        |                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-----------------------------------------------------------------------------------------|
| Widerstandswerte (mOhm)                                                                                                              | Resistance values (mOhm)               | 0.2, 0.3, 0.5, 1 mOhm                                                                   |
| Toleranz                                                                                                                             | Tolerance                              | 1 %, 2 %, 5 %                                                                           |
| Temperaturkoeffizient                                                                                                                | Temperature coefficient (tcr)          | < 50 ppm/K ( 20 °C to 60 °C )                                                           |
| Temperaturbereich                                                                                                                    | Applicable temperature range           | -55 °C to +170 °C                                                                       |
| Belastbarkeit                                                                                                                        | Load capacity                          | 5 W                                                                                     |
| Innerer Widerstand ( $R_{thi}$ )                                                                                                     | Internal heat resistance ( $R_{thi}$ ) | < 10 K/W                                                                                |
| Induktivität                                                                                                                         | Inductance                             | < 3 nH                                                                                  |
| Stabilität (Nennlast) Abweichung $T_K$ = Kontaktstellentemperatur<br>Stability (nominal load) deviation $T_K$ = Terminal temperature |                                        | < 0.5 % nach/after 2000 h ( $T_K$ = 85°C)<br>< 1.0 % nach/after 2000 h ( $T_K$ = 120°C) |

## MERKMALE / FEATURES

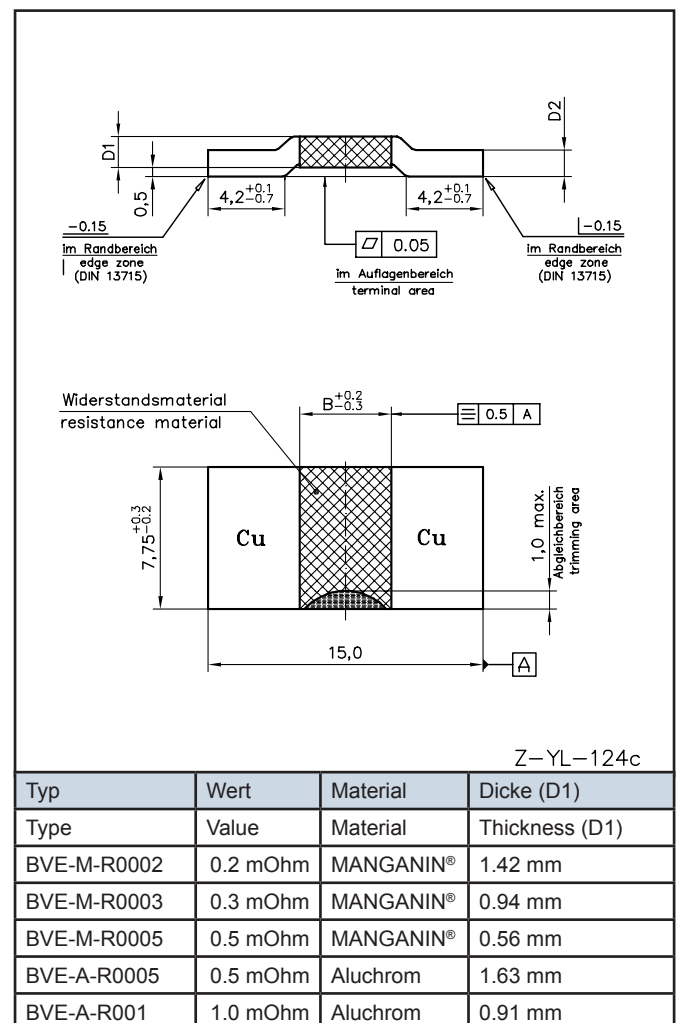
- 5 Watt Dauerleistung
- 5 Watt permanent power
- Dauerströme bis 160 A ( 0.2 mOhm )
- Continuous current load up to 160 Amps
- (0.2 mOhm)
- Massive Kupferanschlüsse
- Heavy copper connectors
- Sehr gute Langzeitstabilität
- Excellent long term stability
- Ideal geeignet für die Montage auf DCB Keramik/IMS Substrat
- Ideal suited for mounting on DBC / IMS substrate
- Geeignet für Löttemperaturen bis 350 °C / 30 sek
- Max. solder temperature up to 350 °C / 30 sec



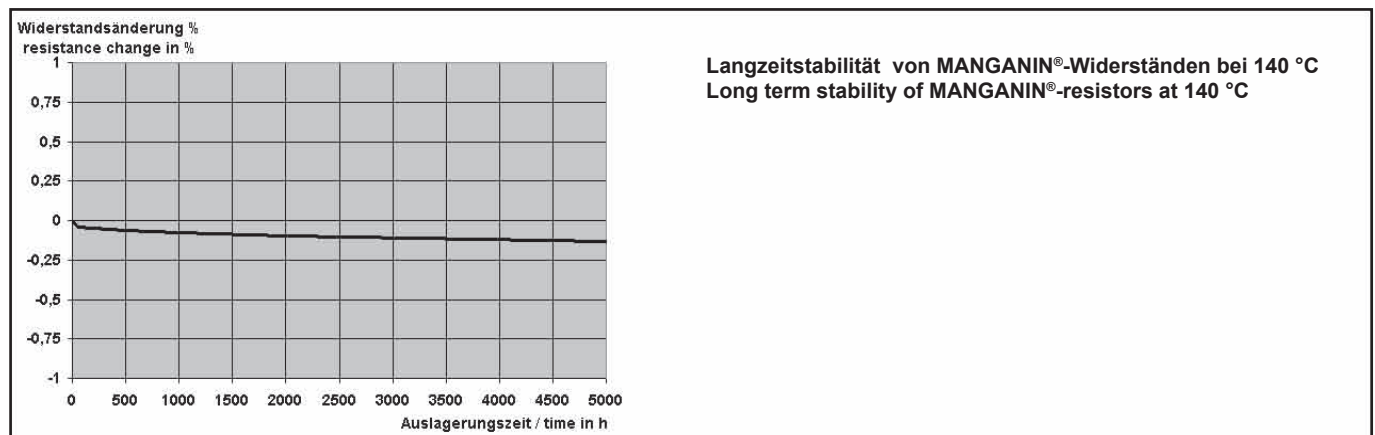
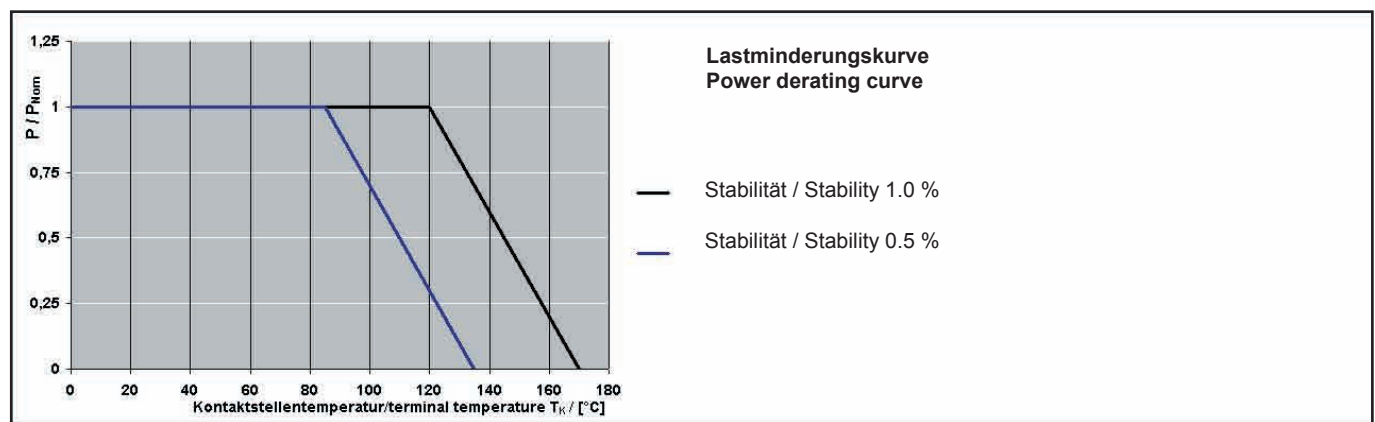
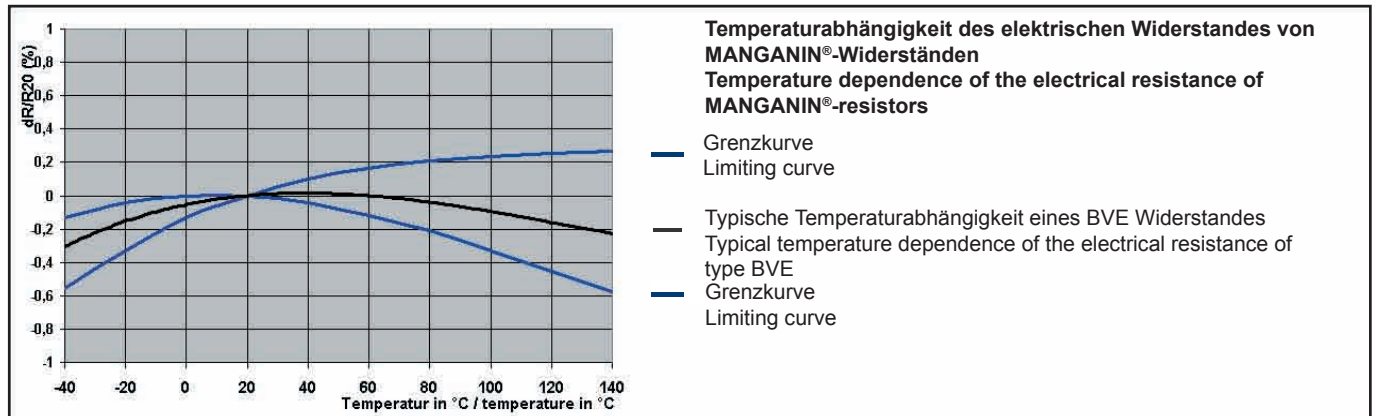
Bauform/Size 5930

## APPLIKATIONEN / APPLICATION

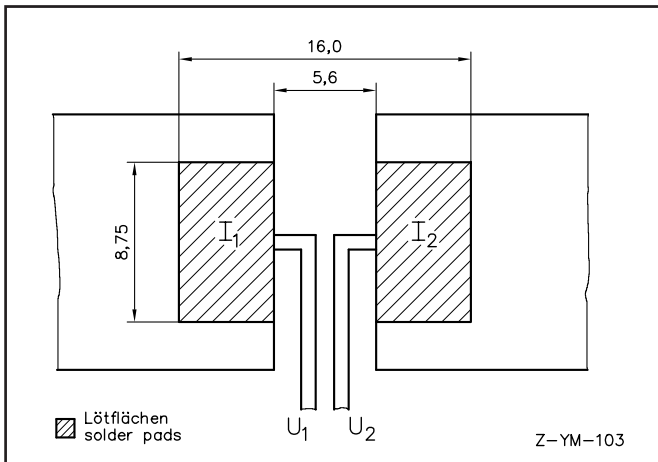
- Messwiderstand für Leistungshybride
- Current sensor for power hybrid applications
- Für Schweißmontage an Stromschienen
- For welding on bus bars
- Hochstromanwendungen in der Automobiltechnik
- High current applications for the automotive market
- Frequenzumrichter
- Frequency converters
- Leistungsmodule
- Power modules



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



## Vorschlag für Leiterplatten Layout (Reflowlöten) 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.isabellenhuetten.de](http://www.isabellenhuetten.de)

RoHS 2002/95/EC compliance since product launch.

For more information please visit our website:  
[www.isabellenhuetten.de](http://www.isabellenhuetten.de)

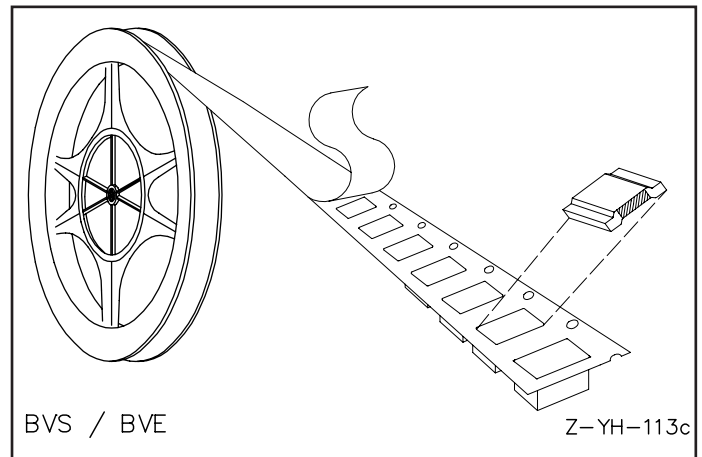
### GURTINFORMATIONEN / TAPE & REEL INFORMATION

|                                |                 |
|--------------------------------|-----------------|
| Norm / Specification           | DIN EN 60286-3  |
| Gurtbreite / Tape width        | 24 mm           |
| Anzahl Bauteile/Parts per reel | 2000 Stk. / pcs |

### BESTELLBEZEICHNUNG / ORDERING CODE

**BVE-M-R0005-1.0**

|      |           |                  |           |
|------|-----------|------------------|-----------|
| Typ  | Material  | Widerstandswert  | Toleranz  |
| Type | Material  | Resistance value | Tolerance |
| BVE  | MANGANIN® | 0.5 mOhm         | 1.0 %     |



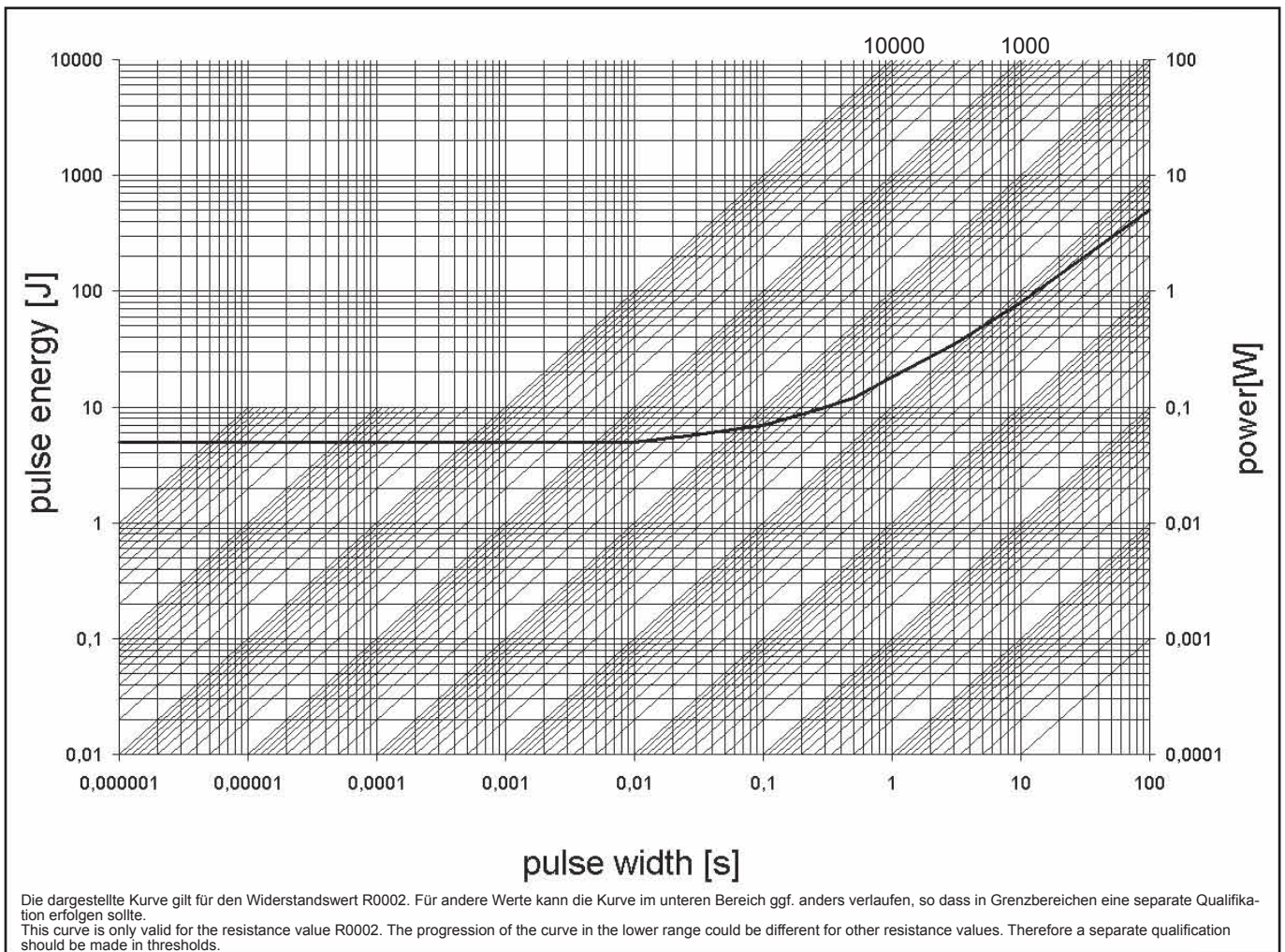
### Gewährleistung

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



| MIL. - STANDARD                              |                                        |                                 |
|----------------------------------------------|----------------------------------------|---------------------------------|
| Parameters                                   | Test Conditions                        | Specification                   |
| Maximum Temperature for full power operation | 120 °C                                 | 120 °C                          |
| Working Temperature                          | -55 to 170 °C                          | -55 to 170 °C                   |
| Thermal Shock                                | MIL-STD-202 method 107E-B1             | 0.1 %                           |
| Overload                                     | MIL-R-26E (5 times rated power, 5 sec) | 0.2 %                           |
| Solderability                                | MIL-STD-202 method 208                 | > 95 % coverage                 |
| Resistance to Solvents                       | MIL-STD-202 method 215A, 2.1a, 2.1d    | no damage                       |
| Low Temperature Storage and Operation        | MIL-STD-26E                            | 0.1 %                           |
| Resistance to Soldering Heat                 | MIL-STD-202 method 210B                | 0.1 %                           |
| Moisture Resistance                          | MIL-STD-202 method 106                 | 0.1 %                           |
| Shock                                        | MIL-STD-202 method 213B-A              | 0.2 %                           |
| Vibration, High Frequency                    | MIL-STD-202 method 204D-B              | 0.2 %                           |
| Life                                         | MIL-STD-26E                            | 0.2 %                           |
| Storage Life at Elevated Temperature         | MIL-STD-202 method 108A-F              | 0.3 %                           |
| High Temperature Exposure                    | 140 °C, 2000 h                         | 0.2%                            |
| Current Noise                                | MIL-STD-202 method 308                 | 0.01 %                          |
| Voltage Coefficient (%/V)                    | MIL-STD-202 method 309                 | linearity error less than 120dB |
| Resistance Temperature Characteristic        | MIL-STD-202 method 304 (20-60°C)       | < 50 ppm/K                      |
| Thermal EMF                                  | 0 - 100 °C                             | 2 µV/ °C max.                   |
| Frequency Characteristic                     | inductivity                            | < 3 nH                          |