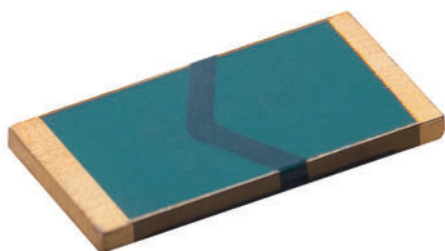




## ISA-PLAN® // PRECISION RESISTORS

**VMK-NA // Au-plated  
Size 1206****Features**

- 1 W power rating at 110 °C
- Constant current up to 3 A (100 mOhm)
- Small size (1206)
- High pulse power rating
- Excellent long-term stability
- Mounting: conductive adhesive / soldering
- AEC-Q200 qualified
- RoHS 2011/65/EU compliant

**Applications**

- Current sensor for power hybrid applications
- Control systems for the automotive market
- Power modules
- Frequency converters
- Switch mode power supplies

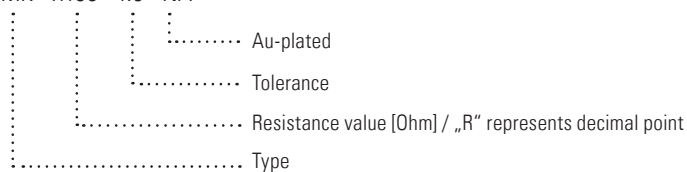
**Technical data**

|                                                                                         |                |                                                                   |
|-----------------------------------------------------------------------------------------|----------------|-------------------------------------------------------------------|
| Resistance values                                                                       | <b>mOhm</b>    | 100 *                                                             |
| Tolerance                                                                               | <b>%</b>       | 1 *                                                               |
| Temperature coefficient (20-60 °C)                                                      | <b>ppm/K</b>   | <20                                                               |
| Applicable temperature range                                                            | <b>°C</b>      | -65 to +170                                                       |
| Power rating <b>P<sub>110°C</sub></b>                                                   | <b>W</b>       | 1                                                                 |
| Power rating <b>P<sub>80°C</sub></b>                                                    | <b>W</b>       | 1.5                                                               |
| Internal heat resistance (R <sub>thi</sub> )                                            | <b>K/W</b>     | <60                                                               |
| Dielectric withstanding voltage                                                         | <b>V AC/DC</b> | 200                                                               |
| Inductance                                                                              | <b>nH</b>      | <3                                                                |
| Stability (at rated power) deviation after 2000h, T <sub>K</sub> = Terminal temperature |                | <0.5 % (T <sub>K</sub> =80 °C)<br><1.0 % (T <sub>K</sub> =110 °C) |

\* Further values and tolerances on request

**Ordering code**

VMK - R100 - 1.0 - NA



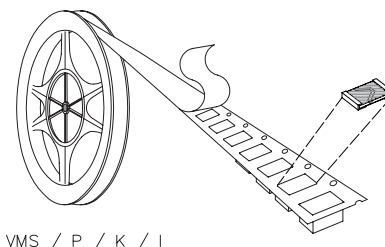
**VMK-NA // Size 1206****Recommended solder profile**

Reflow- and IR-soldering

|             |     |      |     |     |
|-------------|-----|------|-----|-----|
| Temperature | °C  | 260  | 255 | 217 |
| Time        | sec | peak | 40  | 90  |

**Tape and reel information**

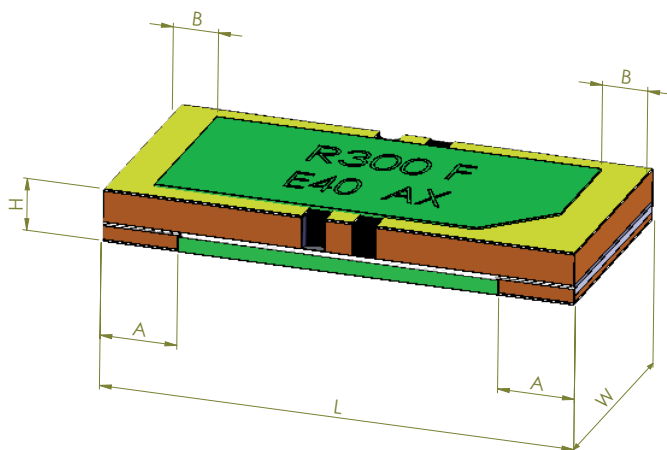
|                      |      |                |
|----------------------|------|----------------|
| Specification        |      | DIN EN 60286-3 |
| Tape width           | mm   | 8              |
| Reel size            | inch | 13             |
| Parts per reel       | pcs  | 12500          |
| Packaging weight net | g    | 454            |



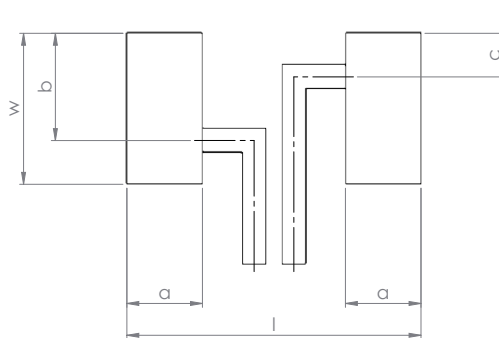
VMS / P / K / I

**Specification** (\*parts tested at soldered condition)

| Parameters                   | Test conditions                           | Specified values *              |
|------------------------------|-------------------------------------------|---------------------------------|
| Temperature Cycling          | 2000 cycles (-55 °C to +150 °C)           | ±0.5 %                          |
| Low Temperature Storage      | -65 °C for 250 h                          | ±0.1 %                          |
| Resistance to Soldering Heat | 260 °C for 10 sec / 8h steam aging        | ±0.3 %                          |
| Moisture Resistance          | MIL-STD-202 method 106                    | ±0.5 %                          |
| 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 rated power | ±1.0 %, T <sub>K</sub> = 110 °C |
| High Temperature Exposure    | 2000 h / 170 °C                           | ±1.0 %                          |
| Bias Humidity                | +85 °C, 85 r.F., 1000 h, powered          | ±0.5 %                          |

**Mechanical dimensions and pcb-layout proposal (Reflow-soldering) [mm] // drawing Z-YK-614b**

| type:  | L         | W         | H         | A         | B         |
|--------|-----------|-----------|-----------|-----------|-----------|
| VMK-NA | 3.05 ±0.2 | 1.52 ±0.2 | 0.37 ±0.1 | 0.5 ±0.15 | 0.3 ±0.15 |

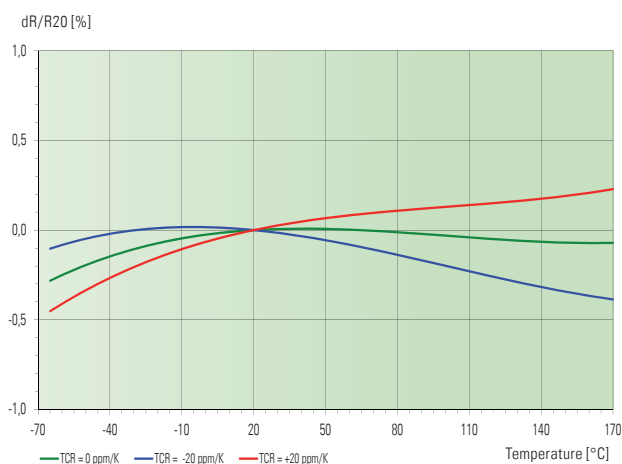


| solder pad type: | l   | w   | a    | b    | c    |
|------------------|-----|-----|------|------|------|
| VMK-NA           | 3.7 | 1.9 | 0.95 | 1.35 | 0.55 |

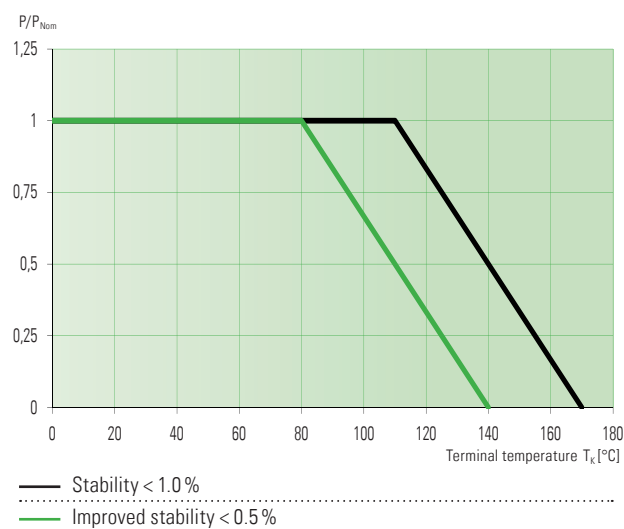


## VMK-NA // Size 1206

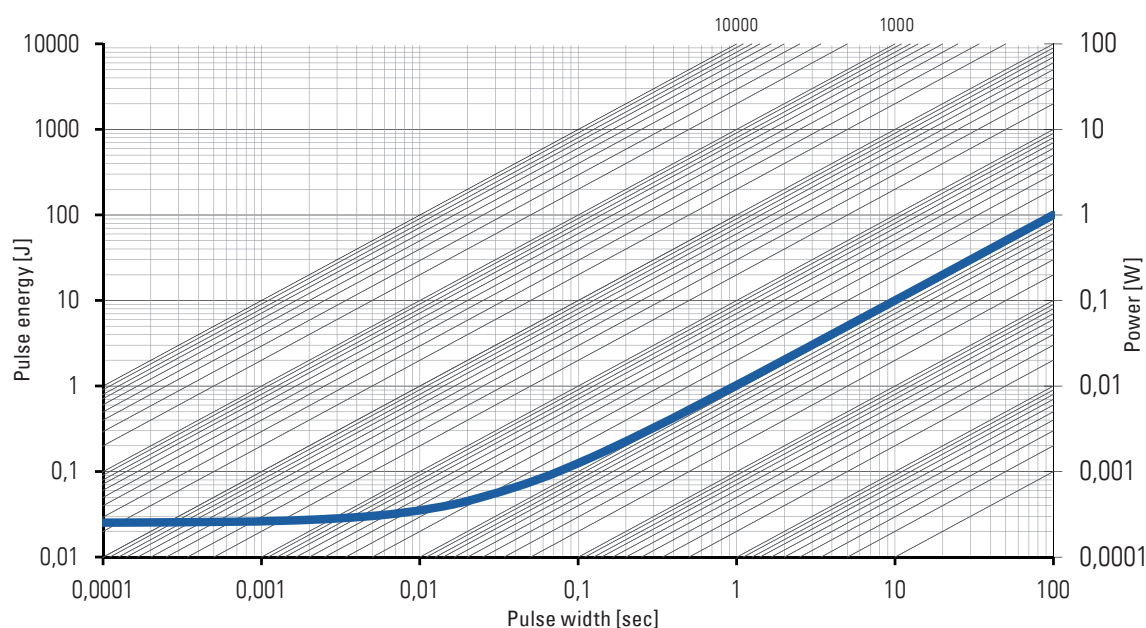
## Temperature dependence of the electrical resistance



## Power derating curve



## Maximum pulse energy respectively pulse power for permanent operation



This curve is only valid for the resistance value R100. The shape of the curve in the range below 0.1 sec will be different for other resistance values. Therefore a separate qualification should be made for pulse power close to the above curve.

**Disclaimer** // All products, product specifications and data are subject to change without notice.

The product specifications do not expand or otherwise modify Isabellenhütte's terms and conditions of sale, including but not limited to, the warranty expressed therein. Isabellenhütte makes no warranty, representation or guarantee other than as set forth in its terms and conditions of sale. Information provided in data-sheets and/or specifications may vary from actual results in different applications. Any statements made by Isabellenhütte regarding the suitability of products for certain types of applications are based on its knowledge of typical requirements that are often placed on its products. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in the application intended. No license, express or implied, or otherwise, to any intellectual property rights is granted by this document. Any and all liability arising out of the application or use of any product shall be as set forth in Isabellenhütte's terms and conditions of sale.

