**Dimensions: [mm]**

```
+----------------+----------------+----------------+----------------+
|                |                |                |                |
|                | 1.5 ±0.3       | 1.5 ±0.3       | 4.5 max.       |
| 4.5 max.       |                |                |                |
+----------------+----------------+----------------+----------------+
```

**Recommended Land Pattern: [mm]**

```
+----------------+----------------+----------------+----------------+
|                |                |                |                |
|                | 1.7            |                | 1.7            |
| 1.7            |                | 4.0            | 2.0            |
+----------------+----------------+----------------+----------------+
```

**Product Marking:**

- **Start of Winding**: Marking
- **Marking**: 180 (Inductance Code)

**Electrical Properties:**

<table>
<thead>
<tr>
<th>Properties</th>
<th>Test conditions</th>
<th>Value</th>
<th>Unit</th>
<th>Tol.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inductance L</td>
<td>1 kHz/ 250 mV</td>
<td>18</td>
<td>µH</td>
<td>±20%</td>
</tr>
<tr>
<td>Rated Current I</td>
<td>ΔT = 40 K</td>
<td>1.5</td>
<td>A</td>
<td>max.</td>
</tr>
<tr>
<td>Saturation Current Imax</td>
<td>ΔLI &lt; 10 %</td>
<td>2.05</td>
<td>A</td>
<td>typ.</td>
</tr>
<tr>
<td>DC Resistance RDC</td>
<td>@ 20 °C</td>
<td>80</td>
<td>mΩ</td>
<td>typ.</td>
</tr>
<tr>
<td>DC Resistance RDC</td>
<td>@ 20 °C</td>
<td>91</td>
<td>mΩ</td>
<td>max.</td>
</tr>
<tr>
<td>Self Resonant Frequency fs</td>
<td></td>
<td>19</td>
<td>Mhz</td>
<td>typ.</td>
</tr>
<tr>
<td>Operating Voltage V</td>
<td></td>
<td>120</td>
<td>V</td>
<td>max.</td>
</tr>
</tbody>
</table>

**Certification:**

- RoHS Approval: Compliant [ 2011/65/EU&2015/863 ]
- REACh Approval: Conform or declared [ (EC)1907/2006 ]
- Halogen Free: Conform [ JEDEC 709B ]

**General Information:**

- It is recommended that the temperature of the component does not exceed +125 °C under worst case conditions
- Ambient Temperature (referring to ta) -40 up to +85 °C
- Operating Temperature -40 up to +125 °C
- Storage Conditions (in original packaging) < 40 °C ; < 75 % RH
- Moisture Sensitivity Level (MSL) 1

**Recommended Land Pattern:**

Scale: 2:1

```
+----------------+----------------+----------------+----------------+
|                |                |                |                |
|                | 1.7            |                | 1.7            |
| 1.7            |                | 4.0            | 2.0            |
+----------------+----------------+----------------+----------------+
```

This electronic component has been designed and developed for usage in general electronic equipment only. This product is not authorized for use in equipment where a higher safety standard and reliability standard is especially required or where failure of the product is reasonably expected to cause severe personal injury or death, unless the parties have executed an agreement specifically governing such use. Moreover Würth Elektronik eiSos GmbH & Co KG products are neither designed nor intended for use in areas such as military, aerospace, aviation, nuclear control, automotive, transportation, submarine, fuel control, ship control, transportation signal, disaster prevention, medical, public information network etc. Würth Elektronik eiSos GmbH & Co KG shall be informed about the intent of such usage before the design or usage. In addition, sufficient reliability evaluation checks for usage must be performed on every electronic component which is used in electrical circuits that require high safety and reliability functions or performance.
Typical Inductance vs. Current Characteristics:

- Inductance [µH] vs. Current [A]

Typical Impedance Characteristics:

- Impedance [Ω] vs. Frequency [MHz]

This electronic component has been designed and developed for usage in general electronic equipment only. This product is not authorized for use in equipment where a higher safety standard and reliability standard is required or where failure of this product is reasonably expected to cause either personal injury or death, unless the parties have executed an agreement specifically governing such use. Moreover, Würth Elektronik eiSos GmbH & Co. KG products are neither designed nor intended for use in areas such as military, aerospace, aviation, nuclear control, automobile, transportation, communication, food control, ship control, transportation signal, disaster prevention, medical, public information networks etc. Würth Elektronik eiSos GmbH & Co. KG shall not be held liable for the intent of such usage before the design or usage. In addition, sufficient reliability evaluation checks for usage must be performed on every electronic component which is used in electrical circuits that require high safety and reliability functions or performance.
Packaging Specification - Tape and Reel: [mm]

End

Feeding direction

Start

No Component

Components

No Component

End

Feeding direction

Start

No Component

Components

Tape type 2a

Packaging unit

Tape width

Pull-of force

0.1 N - 1.3 N

Tape width 16 mm

This electronic component has been designed and developed for usage in general electronic equipment only. This product is not authorized for use in equipment where a higher safety standard and reliability standard is especially required, or where failure of the product is reasonably expected to cause serious personal injury or death, unless the parties have executed an agreement specifically governing such use. Furthermore, Würth Elektronik eiSos GmbH & Co. KG must be informed about the intent of such usage before the design-in stage. In addition, sufficient reliability evaluation checks for usage must be performed on every electronic component which is used in electrical circuits that require high safety and reliability functions or performance.

Packaging is referred to the international standard IEC 60286-3:2013

Packaging unit

Tape type 2a

Tape width

Pull-of force

0.1 N - 1.3 N

Tape width 16 mm

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Packaging unit

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Classification Reflow Profile for SMT components:

Temperature vs. Time graph showing:
- Maximum Ramp Up Rate
- Maximum Ramp Down Rate
- Tp
- Ts max
- Ts min
- Tc = -5°C
- TL
- tL
- tS
- tL

Classification Reflow Soldering Profile:

<table>
<thead>
<tr>
<th>Profile Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preheat Temperature Min</td>
<td>T_s min</td>
</tr>
<tr>
<td>Preheat Temperature Max</td>
<td>T_s max</td>
</tr>
<tr>
<td>Preheat Time t_s from T_s_min to T_s_max</td>
<td>t_s</td>
</tr>
<tr>
<td>Ramp-up Rate (T_l to T_p)</td>
<td>3 °C/second max.</td>
</tr>
<tr>
<td>Liquidus Temperature T_L</td>
<td>217 °C</td>
</tr>
<tr>
<td>Time t_L maintained above T_L</td>
<td>t_L</td>
</tr>
<tr>
<td>Peak package body temperature</td>
<td>T_p</td>
</tr>
<tr>
<td>Time within 5°C of actual peak temperature</td>
<td>t_p</td>
</tr>
<tr>
<td>Ramp-down Rate (T_L to T_P)</td>
<td>6 °C/second max.</td>
</tr>
<tr>
<td>Time 25°C to peak temperature</td>
<td>t_p</td>
</tr>
</tbody>
</table>

Package Classification Reflow Temperature:

<table>
<thead>
<tr>
<th>Properties</th>
<th>Volume mm³ &lt;350</th>
<th>Volume mm³ 350-2000</th>
<th>Volume mm³ &gt;2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>PB-Free Assembly</td>
<td>Package Thickness &lt; 1.6 mm</td>
<td>260 °C</td>
<td>260 °C</td>
</tr>
<tr>
<td>PB-Free Assembly</td>
<td>Package Thickness 1.6 mm - 2.5 mm</td>
<td>260 °C</td>
<td>250 °C</td>
</tr>
<tr>
<td>PB-Free Assembly</td>
<td>Package Thickness ≥ 2.5 mm</td>
<td>250 °C</td>
<td>245 °C</td>
</tr>
</tbody>
</table>

This electronic component has been designed and developed for usage in general electronic equipment only. This product is not authorized for use in equipment where a higher safety standard and reliability standard is especially required or where failure of the product is reasonably expected to cause severe personal injury or death, unless the parties have executed an agreement specifically governing such use. Moreover, Würth Elektronik eiSos GmbH & Co KG products are neither designed nor intended for use in areas such as military, aerospace, nuclear control, atomic energy, transportation, switchmode control, telecontrol, radio control, transportation signal, disaster prevention, medical, public information network etc. Würth Elektronik eiSos GmbH & Co KG shall be informed about the intent of such usage before the design or usage. In addition, sufficient reliability evaluation checks for usage must be performed on every electronic component which is used in electrical circuits that require high safety and reliability functions or performance.
Cautions and Warnings:
The following conditions apply to all goods within the product series of WE-PD of Würth Elektronik eiSos GmbH & Co. KG:

General:
- This electronic component is designed and manufactured for use in general electronic equipment.
- Würth Elektronik must be asked for written approval (following the PPAP procedure) before incorporating the components into any equipment in fields such as military, aerospace, aviation, nuclear control, submarine, transportation (automotive control, train control, ship control), transportation signal, disaster prevention, medical, public information network etc. where higher safety and reliability are especially required and/or if there is the possibility of direct damage or human injury.
- Electronic components that will be used in safety-critical or high-reliability applications, should be pre-evaluated by the customer.
- The component is designed and manufactured to be used within the datasheet specified values. If the usage and operation conditions specified in the datasheet are not met, the wire insulation may be damaged or dissolved.
- Do not drop or impact the components, as the core may flake apart.
- Würth Elektronik products are qualified according to international standards, which are listed in each product reliability report. Würth Elektronik does not warrant any customer qualified product characteristics beyond Würth Elektroniks' specifications, for its validity and sustainability over time.
- The responsibility for the applicability of the customer specific products and use in a particular customer design is always within the authority of the customer. All technical specifications for standard products also apply to customer specific products.

Product specific:

Soldering:
- The solder profile must comply with the Würth Elektronik technical soldering specification. All other profiles will void the warranty.
- All other soldering methods are at the customers’ own risk.
- Strong forces which may affect the coplanarity of the components’ electrical connection with the PCB (i.e. pins), can damage the part, resulting in void of the warranty.

Cleaning and Washing:
- Washing agents used during the production to clean the customer application might damage or change the characteristics of the wire insulation, marking or plating. Washing agents may have a negative effect on the long-term functionality of the product.
- Using a brush during the cleaning process may break the wire due to its small diameter. Therefore, we do not recommend using a brush during the PCB cleaning process.

Potting:
- If the product is potted in the customer application, the potting material may shrink or expand during and after hardening. Shrinking could lead to an incomplete seal, allowing contaminants into the core. Expansion could damage the core or wire contacts. We recommend a manual inspection after potting to avoid these effects.

Storage Conditions:
- A storage of Würth Electronik products for longer than 12 months is not recommended. Within other effects, the terminals may suffer degradation, resulting in bad solderability. Therefore, all products shall be used within the period of 12 months based on the day of shipment.
- Do not expose the components to direct sunlight.
- The storage conditions in the original packaging are defined according to DIN EN 61760-2.

Handling:
- Violation of the technical product specifications such as exceeding the nominal rated current will void the warranty.
- Applying currents with audio-frequency signals may result in audible noise due to the magnetostrictive material properties.

These cautions and warnings comply with the state of the scientific and technical knowledge and are believed to be accurate and reliable. However, no responsibility is assumed for inaccuracies or incompleteness.
6. Product Life Cycle

Due to technical progress and economical evaluation, we also reserve the right to discontinue production and delivery of products. As a standard reporting procedure of the Product Termination Notification (PTN) according to the JEDEC-Standard, we will inform at an early stage about inevitable product discontinuance. According to this, we cannot guarantee that all products within our product range will always be available. Therefore, it needs to be verified with the field sales engineer or the internal sales person in charge about the current product availability expectation before or when the product for application design-in disposal is considered. The approach named above does not apply in the case of individual agreements deviating from the foregoing for customer-specific products.

7. Property Rights

All the rights for contractual products produced by Würth Elektronik eiSos GmbH & Co. KG on the basis of ideas, development contracts as well as models or templates that are subject to copyright, patent or commercial protection supplied to the customer will remain with Würth Elektronik eiSos GmbH & Co. KG. Würth Elektronik eiSos GmbH & Co. KG does not warrant or represent that any license, either expressed or implied, is granted under any patent right, copyright, mask work right, or other intellectual property right relating to any combination, application, or process in which Würth Elektronik eiSos GmbH & Co. KG components or services are used.

8. General Terms and Conditions

Unless otherwise agreed in individual contracts, all orders are subject to the current version of the “General Terms and Conditions of Würth Elektronik eiSos Group”, last version available at www.we-online.com.