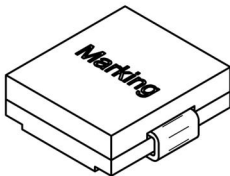
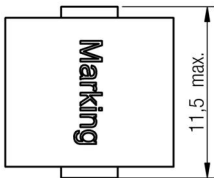
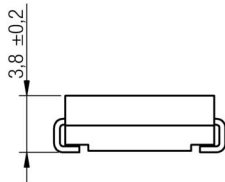
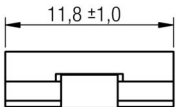
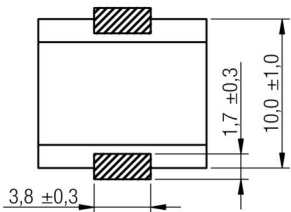


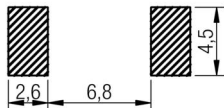
A Dimensions: [mm]



Scale - 2:1

| Reference on drawing | Description                |
|----------------------|----------------------------|
| Marking              | 744304022 (Article Number) |
| Date code            | YYWW                       |

B Recommended land pattern: [mm]



Scale - 2:1

C Schematic:



D Electrical Properties:

| Properties              | Test conditions      |                  | Value | Unit | Tol.  |
|-------------------------|----------------------|------------------|-------|------|-------|
| Inductance              | 100 kHz/ 10 mA       | L                | 220   | nH   | ± 20% |
| Rated inductance        | 100 kHz/ 10 mA/ 24 A | L <sub>R</sub>   | 160   | nH   | typ.  |
| Rated current           | ΔT = 40 K            | I <sub>R</sub>   | 24.0  | A    | max.  |
| Saturation current      | IΔL/LI < 20%         | I <sub>sat</sub> | 23.0  | A    | typ.  |
| DC Resistance           | @ 20°C               | R <sub>DC</sub>  | 0.170 | mΩ   | ±7%   |
| Self resonant frequency |                      | f <sub>res</sub> | 70    | MHz  | typ.  |

E General information:

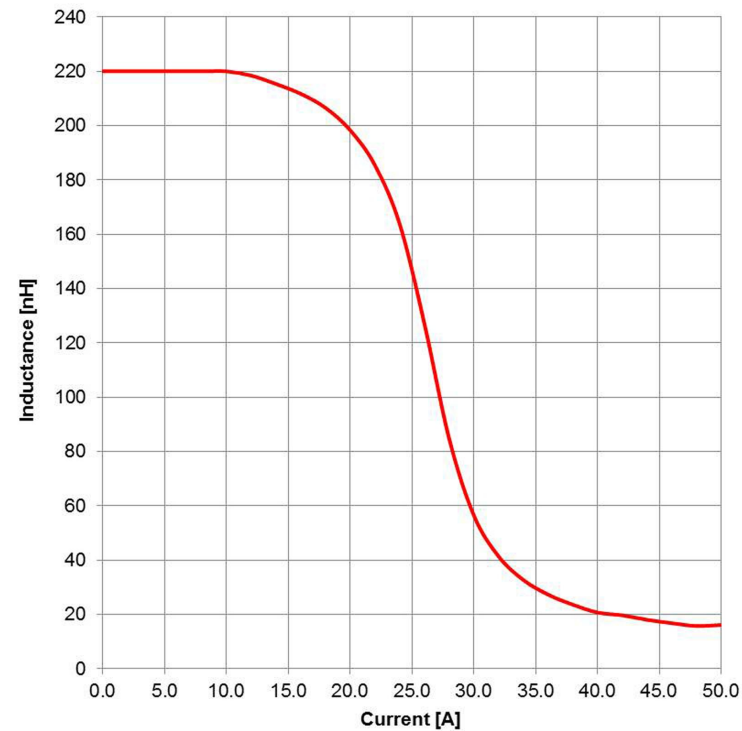
It is recommended that the temperature of the part does not exceed 125°C under worst case operating conditions.

- Ambient temperature: -40°C to +85°C (referring to I<sub>R</sub>)
- Operating temperature: -40°C to +125°C
- Storage temperature (on tape & reel): -20°C to +40°C; 75% RH max.
- Test conditions of Electrical Properties: 20°C, 33% RH if not specified differently

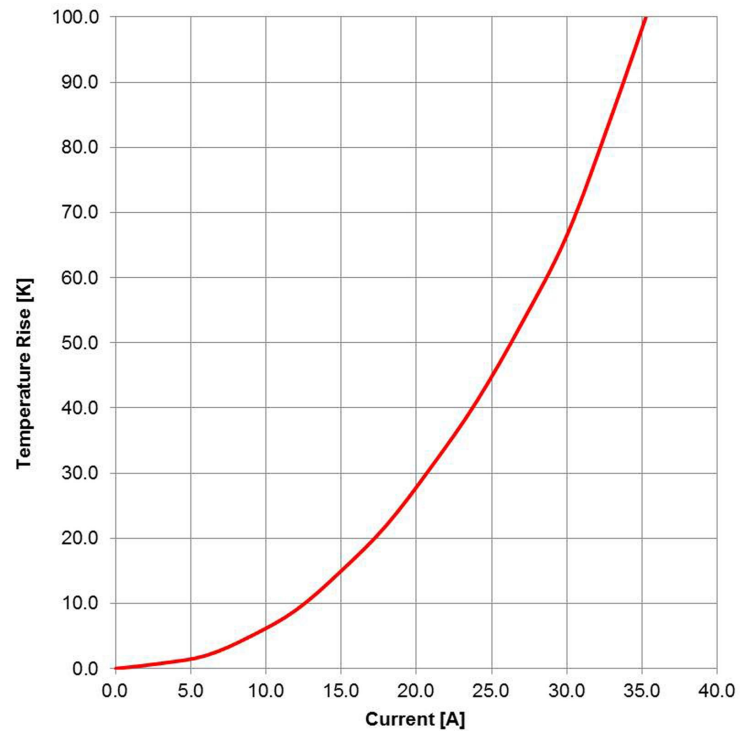
|     |            |     |         |                                                                                                                                                                                               |  |                                                   |
|-----|------------|-----|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------|
|     |            |     |         | Projection                                                                                                                                                                                    |  | DESCRIPTION                                       |
|     |            |     |         |                                                                                                                                                                                               |  | <b>WE-HCM SMD High Current Flat Wire Inductor</b> |
| 2.4 | 2015-03-04 | SSt | BD      | Würth Elektronik eiSos GmbH & Co. KG<br>EMC & Inductive Solutions<br>Max-Eyth-Str. 1<br>74638 Waldenburg<br>Germany<br>Tel. +49 (0) 79 42 945 - 0<br>www.we-online.com<br>eiSos@we-online.com |  | Order.- No.                                       |
| 2.3 | 2014-09-16 | SSt | BD      |                                                                                                                                                                                               |  |                                                   |
| 2.2 | 2014-02-06 | SSt | BD      |                                                                                                                                                                                               |  |                                                   |
| 2.1 | 2013-12-11 | SSt | SSt     |                                                                                                                                                                                               |  |                                                   |
| 2.0 | 2013-06-20 | SSt | BD      |                                                                                                                                                                                               |  |                                                   |
| 1.0 | 2009-08-18 | RST | -       |                                                                                                                                                                                               |  | <b>744304022</b>                                  |
| REV | DATE       | BY  | CHECKED |                                                                                                                                                                                               |  | Size: 1240                                        |

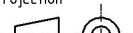


F1 Typical Inductance vs. Current Characteristics:



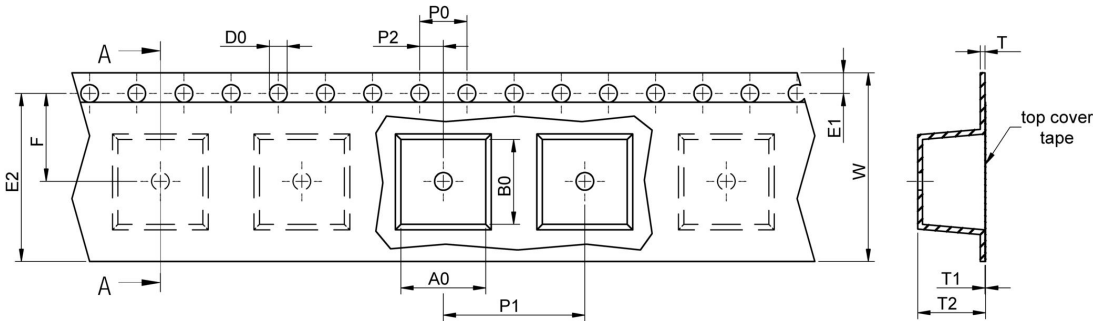
F2 Typical Temperature Rise vs. Current Characteristics:



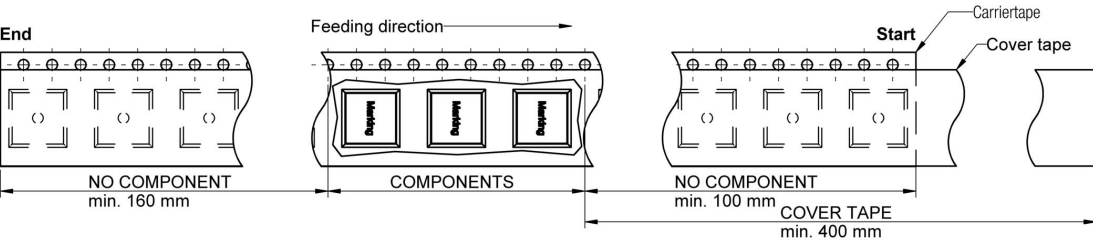
|     |            |     |         |                                                                                                                                                                                                                                                                          |                                                                                                                                                                  |  |                               |  |
|-----|------------|-----|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------|--|
|     |            |     |         | <div>Projection</div>                                                                                                                                                               | DESCRIPTION                                                                                                                                                      |  |                               |  |
| 2.4 | 2015-03-04 | SSt | BD      |                                                                                                                                                                                                                                                                          | <div>WE-HCM SMD High Current Flat Wire Inductor</div>                                                                                                            |  |                               |  |
| 2.3 | 2014-09-16 | SSt | BD      | <div>Würth Elektronik eiSos GmbH &amp; Co. KG</div> <div>EMC &amp; Inductive Solutions</div> <div>Max-Eyth-Str. 1</div> <div>74638 Waldenburg</div> <div>Germany</div> <div>Tel. +49 (0) 79 42 945 - 0</div> <div>www.we-online.com</div> <div>eiSos@we-online.com</div> |                                                                                                                                                                  |  |                               |  |
| 2.2 | 2014-02-06 | SSt | BD      |                                                                                                                                                                                                                                                                          |                                                                                                                                                                  |  |                               |  |
| 2.1 | 2013-12-11 | SSt | SSt     |                                                                                                                                                                                                                                                                          |                                                                                                                                                                  |  |                               |  |
| 2.0 | 2013-06-20 | SSt | BD      |                                                                                                                                                                                                                                                                          |                                                                                                                                                                  |  |                               |  |
| 1.0 | 2009-08-18 | RST | -       |                                                                                                                                                                                                                                                                          |                                                                                                                                                                  |  |                               |  |
| REV | DATE       | BY  | CHECKED | <div>Order.- No.</div> <div>744304022</div> <div>Size: 1240</div>                                                                                                                                                                                                        |                                                                                                                                                                  |  |                               |  |
|     |            |     |         |                                                                                                                                                                                                                                                                          |  <div>COMPLIANT</div> <div>RoHS&amp;REACH</div> <div>WÜRTH ELEKTRONIK</div> |  | <div>SIZE</div> <div>A4</div> |  |

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 a 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, submarine, transportation (automotive control, train control, ship control), transportation signal, disaster prevention, medical, public information network etc.. 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 safety must be performed on every electronic component which is used in electrical circuits that require high safety and reliability functions or performance.

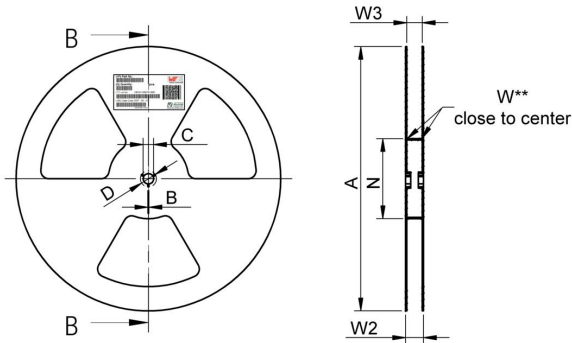
G Packaging Specification - Tape and Reel [mm]:



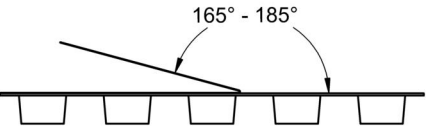
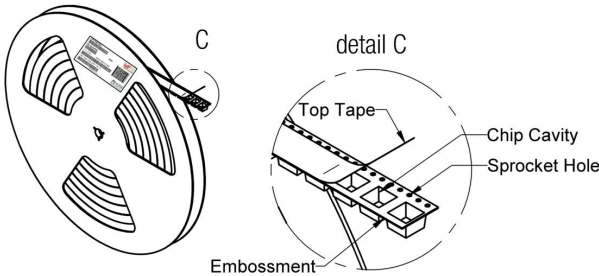
| size |           | A0    | B0    | W            | P1    | T     | T1   | T2    | D0           | E1    | E2    | F      | P0    | P2     | Tape        | VPE /<br>packaging<br>unit |
|------|-----------|-------|-------|--------------|-------|-------|------|-------|--------------|-------|-------|--------|-------|--------|-------------|----------------------------|
|      | tolerance | typ.  | typ.  | +0,3<br>-0,1 | ± 0,1 | ± 0,1 | max. | typ.  | +0,1<br>-0,0 | ± 0,1 | min.  | ± 0,05 | ± 0,1 | ± 0,05 |             |                            |
|      | 7050      | 7,20  | 7,10  | 16,00        | 12,00 | 0,40  | 0,10 | 5,70  | 1,50         | 1,75  | 14,25 | 7,50   | 4,00  | 2,00   | Polystyrene | 1000                       |
|      | 7070      | 8,10  | 8,30  | 24,00        | 16,00 | 0,45  | 0,10 | 8,00  | 1,50         | 1,75  | 22,25 | 11,50  | 4,00  | 2,00   | Polystyrene | 500                        |
|      | 1050      | 7,10  | 10,30 | 24,00        | 12,00 | 0,45  | 0,10 | 5,80  | 1,50         | 1,75  | 22,25 | 11,50  | 4,00  | 2,00   | Polystyrene | 1000                       |
|      | 1070      | 8,10  | 11,20 | 24,00        | 16,00 | 0,45  | 0,10 | 9,00  | 1,50         | 1,75  | 22,25 | 11,50  | 4,00  | 2,00   | Polystyrene | 500                        |
|      | 1052      | 11,10 | 11,40 | 24,00        | 16,00 | 0,45  | 0,10 | 5,80  | 1,50         | 1,75  | 22,25 | 11,50  | 4,00  | 2,00   | Polystyrene | 700                        |
|      | 1190      | 11,60 | 12,00 | 24,00        | 20,00 | 0,45  | 0,10 | 10,00 | 1,50         | 1,75  | 22,25 | 11,50  | 4,00  | 2,00   | Polystyrene | 300                        |
|      | 1240      | 11,80 | 11,30 | 24,00        | 16,00 | 0,45  | 0,10 | 5,00  | 1,50         | 1,75  | 22,25 | 11,50  | 4,00  | 2,00   | Polystyrene | 700                        |
|      | 1350      | 14,20 | 14,30 | 24,00        | 20,00 | 0,45  | 0,10 | 6,10  | 1,50         | 1,75  | 22,25 | 11,50  | 4,00  | 2,00   | Polystyrene | 500                        |
|      | 1390      | 13,65 | 14,65 | 24,00        | 20,00 | 0,45  | 0,10 | 10,00 | 1,50         | 1,75  | 22,25 | 11,50  | 4,00  | 2,00   | Polystyrene | 500                        |



Packaging is referred to the international standard IEC 60286 -3:2007

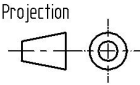


|            |       | A      | B    | C     | D     | N      | W1    | W2    | W3    | W3    |
|------------|-------|--------|------|-------|-------|--------|-------|-------|-------|-------|
| tolerance  |       | ± 2,0  | min. | ± 0,8 | min.  | min.   | + 1,5 | max.  | min.  | max.  |
| Tape width | 16 mm | 330,00 | 1,50 | 13,00 | 20,20 | 100,00 | 16,40 | 22,40 | 15,90 | 19,40 |
|            | 24 mm | 330,00 | 1,50 | 13,00 | 20,20 | 100,00 | 24,40 | 30,40 | 23,90 | 27,40 |



| Tape width |  | Pull-of force |
|------------|--|---------------|
|            |  |               |
| 16 mm      |  | 0,1 N - 1,3 N |
| 24 mm      |  | 0,1 N - 1,3 N |

| 2.4 | 2015-03-04 | SSt | BD      |
|-----|------------|-----|---------|
| 2.3 | 2014-09-16 | SSt | BD      |
| 2.2 | 2014-02-06 | SSt | BD      |
| 2.1 | 2013-12-11 | SSt | SSt     |
| 2.0 | 2013-06-20 | SSt | BD      |
| 1.0 | 2009-08-18 | RST | -       |
| REV | DATE       | BY  | CHECKED |



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EMC & Inductive Solutions  
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www.we-online.com  
eiSos@we-online.com

DESCRIPTION

**WE-HCM SMD High Current Flat Wire Inductor**

Order.- No.

**744304022**

Size: 1240



SIZE

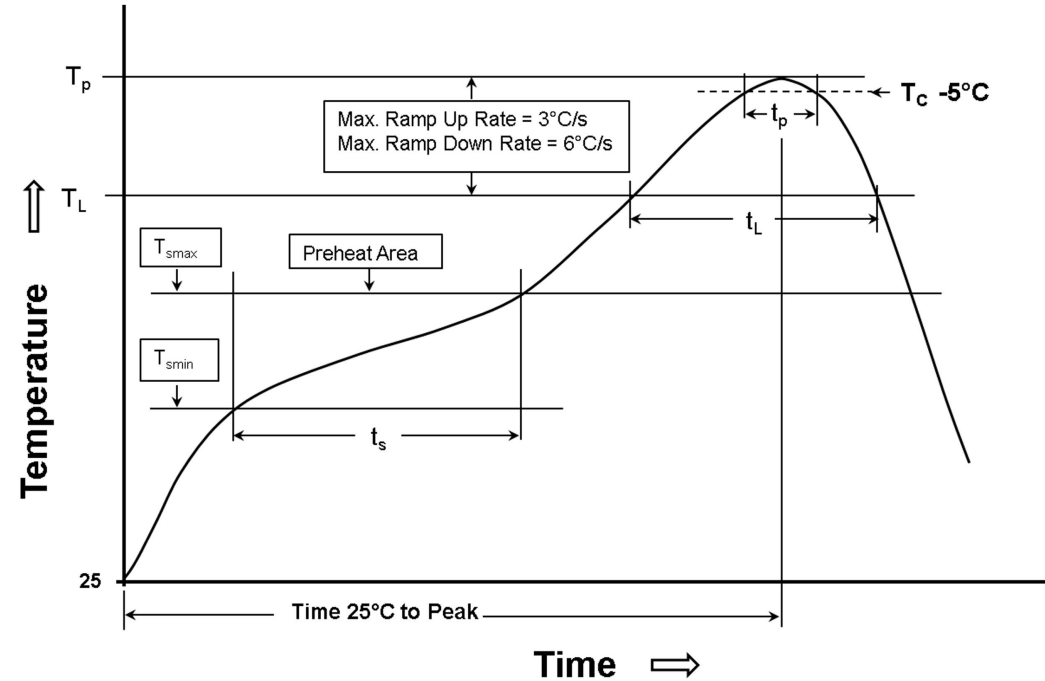
A4

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H Soldering Specifications:



H1: Classification Reflow Profile for SMT components:



H2: Classification Reflow Profiles

| Profile Feature                                                                                                                                                                                                                             | Pb-Free Assembly                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| Preheat <ul style="list-style-type: none"><li>- Temperature Min (<math>T_{smin}</math>)</li><li>- Temperature Max (<math>T_{smax}</math>)</li><li>- Time (<math>t_s</math>) from (<math>T_{smin}</math> to <math>T_{smax}</math>)</li></ul> | 150°C<br>200°C<br>60-120 seconds |
| Ramp-up rate ( $T_L$ to $T_p$ )                                                                                                                                                                                                             | 3°C/ second max.                 |
| Liquidous temperature ( $T_L$ )<br>Time ( $t_L$ ) maintained above $T_L$                                                                                                                                                                    | 217°C<br>60-150 seconds          |
| Peak package body temperature ( $T_p$ )                                                                                                                                                                                                     | See Table H3                     |
| Time within 5°C of actual peak temperature ( $t_p$ )                                                                                                                                                                                        | 20-30 seconds                    |
| Ramp-down rate ( $T_p$ to $T_L$ )                                                                                                                                                                                                           | 6°C/ second max.                 |
| Time 25°C to peak temperature                                                                                                                                                                                                               | 8 minutes max.                   |

refer to IPC/JEDEC J-STD-020D

H3: Package Classification Reflow Temperature

|                  | Package Thickness | Volume mm³<br><350 | Volume mm³<br>350 - 2000 | Volume mm³<br>>2000 |
|------------------|-------------------|--------------------|--------------------------|---------------------|
| PB-Free Assembly | < 1.6 mm          | 260°C              | 260°C                    | 260°C               |
| PB-Free Assembly | 1.6 - 2.5 mm      | 260°C              | 250°C                    | 245°C               |
| PB-Free Assembly | ≥ 2.5 mm          | 250°C              | 245°C                    | 245°C               |

refer to IPC/JEDEC J-STD-020D

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|     |            |     |         |                |  |                                                   |      |
|-----|------------|-----|---------|----------------|--|---------------------------------------------------|------|
|     |            |     |         | Projection<br> |  | DESCRIPTION                                       |      |
| 2.4 | 2015-03-04 | SSt | BD      |                |  | <b>WE-HCM SMD High Current Flat Wire Inductor</b> |      |
| 2.3 | 2014-09-16 | SSt | BD      |                |  | Order.- No.                                       | SIZE |
| 2.2 | 2014-02-06 | SSt | BD      |                |  | <b>744304022</b>                                  | A4   |
| 2.1 | 2013-12-11 | SSt | SSt     |                |  |                                                   |      |
| 2.0 | 2013-06-20 | SSt | BD      |                |  | Size: 1240                                        |      |
| 1.0 | 2009-08-18 | RST | -       |                |  |                                                   |      |
| REV | DATE       | BY  | CHECKED |                |  |                                                   |      |

# I Cautions and Warnings:

The following conditions apply to all goods within the product series of WE-HCM of Würth Elektronik eiSos GmbH & Co. KG:

## General:

All recommendations according to the general technical specifications of the data sheet have to be complied with.

The usage and operation of the product within ambient conditions, which probably alloy or harm the wire isolation, has to be avoided.

If the product is potted in customer applications, the potting material might shrink during and after hardening. The product is exposed to the pressure of the potting material with the effect that the core, wire and termination is possibly damaged by this pressure and so the electrical as well as the mechanical characteristics are endangered to be affected. After the potting material is cured, the core, wire and termination of the product have to be checked if any reduced electrical or mechanical functions or destructions have occurred.

The responsibility for the applicability of customer specific products and use in a particular customer design is always within the authority of the customer. All technical specifications for standard products do also apply to customer specific products.

Cleaning agents that are used to clean the customer application might damage or change the characteristics of the component, body, pins or termination.

Direct mechanical impact to the product shall be prevented as the core material could flake or in the worst case it could break.

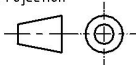
## Product specific:

Follow all instructions mentioned in the data sheet, especially:

- The soldering profile has to be complied with according to the technical reflow soldering specification, otherwise this will void the warranty.
- All products shall be used before the end of the period of 12 months based on the product date code, if not a 100% solderability can't be ensured.
- Violation of the technical product specifications such as exceeding the nominal rated current will void the warranty.
- Due to heavy weight of the components of size 2212, strong forces and high accelerations might have the effect to damage the electrical connection or to harm the circuit board and will void the warranty.

The general and product specific cautions 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.



|     |            |     |         |                                                                                                                                                                                               |  |                                                                                                        |      |
|-----|------------|-----|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------|------|
|     |            |     |         | Projection<br>                                                                                           |  | DESCRIPTION                                                                                            |      |
| 2.4 | 2015-03-04 | SSt | BD      | Würth Elektronik eiSos GmbH & Co. KG<br>EMC & Inductive Solutions<br>Max-Eyth-Str. 1<br>74638 Waldenburg<br>Germany<br>Tel. +49 (0) 79 42 945 - 0<br>www.we-online.com<br>eiSos@we-online.com |  | <b>WE-HCM SMD High Current Flat Wire Inductor</b>                                                      |      |
| 2.3 | 2014-09-16 | SSt | BD      |                                                                                                                                                                                               |  | Order.- No.                                                                                            |      |
| 2.2 | 2014-02-06 | SSt | BD      |                                                                                                                                                                                               |  | <b>744304022</b>  | SIZE |
| 2.1 | 2013-12-11 | SSt | SSt     |                                                                                                                                                                                               |  |                                                                                                        | A4   |
| 2.0 | 2013-06-20 | SSt | BD      |                                                                                                                                                                                               |  |                                                                                                        |      |
| 1.0 | 2009-08-18 | RST | -       |                                                                                                                                                                                               |  |                                                                                                        |      |
| REV | DATE       | BY  | CHECKED |                                                                                                                                                                                               |  | Size: 1240                                                                                             |      |



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