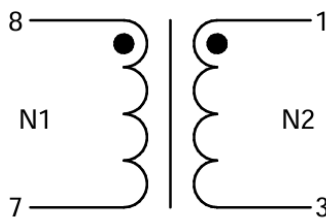
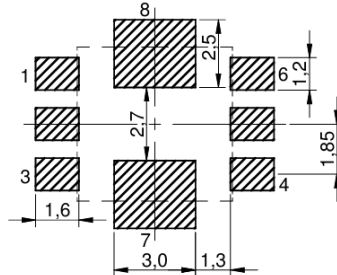


### Schematics



### Land Pattern



### ➤ DIMENSIONS OF OWCSTxxxT-Exxx EE core Type SMD Current Sensor Transformer

| OW Series Size: EE5.0 | A(mm)      | B(mm)      | C(mm)    | D(mm)      | E(mm)   | F(mm) | G(mm) | H(mm) | I(mm) | J(mm) |
|-----------------------|------------|------------|----------|------------|---------|-------|-------|-------|-------|-------|
| OWCSTxxxT-Exxx        | 7.8+/- 0.5 | 6.9+/- 0.5 | 5.6 Max. | 1.9+/- 0.2 | 0.6 Ref | /     | /     | /     | /     | /     |

Note: OWCST xxxT - E xxx

- ➔ Current Transformer Part number
- ➔ Type: E = EE Core type, eg. EE5.0
- ➔ Secondary winding turns
- ➔ OW current sensor transformer modle

## OWCSTxxxT-Exxx Current Sensor Transformer

### Monitoring & Measuring AC Current 15A EE Core SMD Type

#### GENERAL INFORMATION

- Operation Temp: -40°C to +125°C
- Humidity: ≤ 95%
- Altitude ≤ 2000m
- Storage condition: 0-40°C and ≤70% ( In original packaging)
- current Transformer

#### FEATURES

- Frequency range: 1KHz to 1MHz
- Primary Current range: 0 to 20A
- Dielectric withstanding Voltage : 500Vac
- Optimum performance over designated current and frequency range
- Full encapsulated constructure
- Low cost.

#### APPLICATIONS

- High resolution sonar current
- Isolated current feedback signal in switch mode power supplies
- Monitor current load/ overload
- Lighting
- Switch controls Ultra-sound current
- Isolated bi-directional current sensor with full wave bridge rectifier

#### CERTIFICATION

- RoHS Approval: Complaint 2011/65/EU & 2015/863
- REACH Approval: IEC1907/2006
- UL94 V0: Suitable

#### NOTICE

- Current Sensors are for monitoring or measuring AC current. They serve as feedback elements between the output and pulse control circuitry providing accurate regulation of switch mode power supplies
- This electronic component was designed and manufactured for use in general electronic equipment.
- Don't drop test or impact on the single component.
- Violation of the technical product specifications such as exceeding the nominal rated current may damage the product.
- Current transformers must not be used in an open circuit, nor can they be connected to fuses

➤ **Electrical Characteristics of OWCSTxxxT-Exxx EE core Type SMD Current Sensor Transformer**

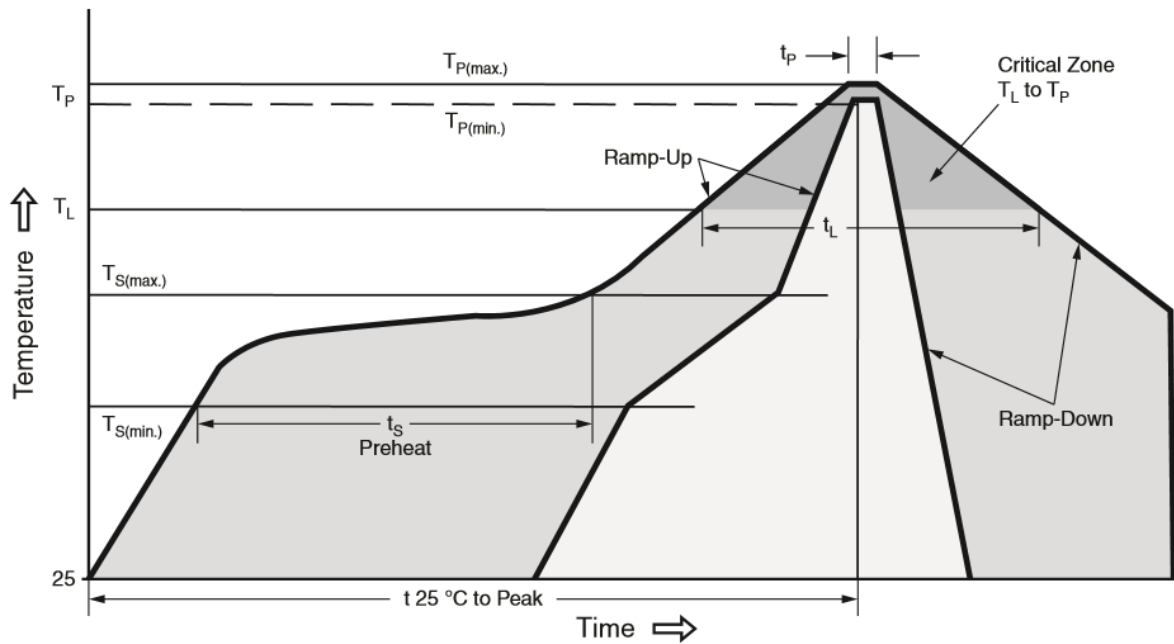
| No | Item                     | Unit                 | Product Models(EE5.0 Series) |                   |                   |                   |                    |                    |                    |
|----|--------------------------|----------------------|------------------------------|-------------------|-------------------|-------------------|--------------------|--------------------|--------------------|
|    |                          |                      | OWCST20<br>T-E300            | OWCST50<br>T-E301 | OWCST60<br>T-E302 | OWCST70<br>T-E303 | OWCST100<br>T-E304 | OWCST125<br>T-E305 | OWCST200<br>T-E306 |
| 1  | Turns Ratio(Kr)          | /                    | 1:20                         | 1:50              | 1:60              | 1:70              | 1:100              | 1:125              | 1:200              |
| 2  | Primary Current Max.     | A(ac)                | 15                           | 15                | 15                | 15                | 15                 | 15                 | 20                 |
| 3  | L <sub>sec</sub> Min.    | uH                   | 80                           | 500               | 730               | 980               | 2000               | 3000               | 8000               |
| 4  | Test Condition           | KHZ<br>mV            | 10KHZ 0.1V                   |                   |                   |                   |                    |                    |                    |
| 5  | DCR <sub>sec.</sub> Max. | Ω                    | 0.4                          | 1.5               | 1.98              | 4.75              | 5.5                | 6.5                | 16.5               |
| 6  | Frequency Rang           | KHz                  | 46KHz to 1MHz                | 20KHz to 1MHz     | 15KHz to 1MHz     | 13KHz to 1MHz     | 9KHz to 1MHz       | 7KHz to 1MHz       | 1KHz to 1MHz       |
| 7  | Secondary Current Max.   | mA                   | 750                          | 300               | 250               | 215               | 150                | 120                | 100                |
| 8  | Rated Voltage            | Vdc                  | 80                           | 80                | 80                | 80                | 80                 | 80                 | 80                 |
| 9  | Volt μS Max.             | /                    | 10.8                         | 27                | 32                | 38                | 54                 | 67.5               | 100                |
| 10 | Hi-Pot Pri to Sec.       | V(ac)                | 500V, 5mA<br>60"             | 500V, 5mA<br>60"  | 500V, 5mA<br>60"  | 500V, 5mA<br>60"  | 500V, 5mA<br>60"   | 500V, 5mA<br>60"   | 500V, 5mA<br>60"   |
| 11 | Insulation Resistance    | MΩ<br>Min.<br>100Vdc | 500                          | 500               | 500               | 500               | 500                | 500                | 500                |

**Note:**

- 1) This nominal termination resistance value will yield approximately 1.0V of output for each amp of current in a single turn sense line. The output Voltage/Ampere of these devices can be increased or decreased linearly over a restricted temperature range by adjusting the terminating resistance.
- 2)  $V_{us} = R_t \times I_{sec} \times (1/2F)$   
 --R<sub>t</sub>(ohms) = Recommend Terminating Resistance  
 --I<sub>sec.</sub> = Secondary Current  
 --F = Frequency
- 3) Please contact sales if your requirement is beyond the list by [sales@owolff.com](mailto:sales@owolff.com)



➤ **Recommend Reflow Soldering Condition of OWCSTxxxT-Exxx EE core Type SMD Current Sensor Transformer**



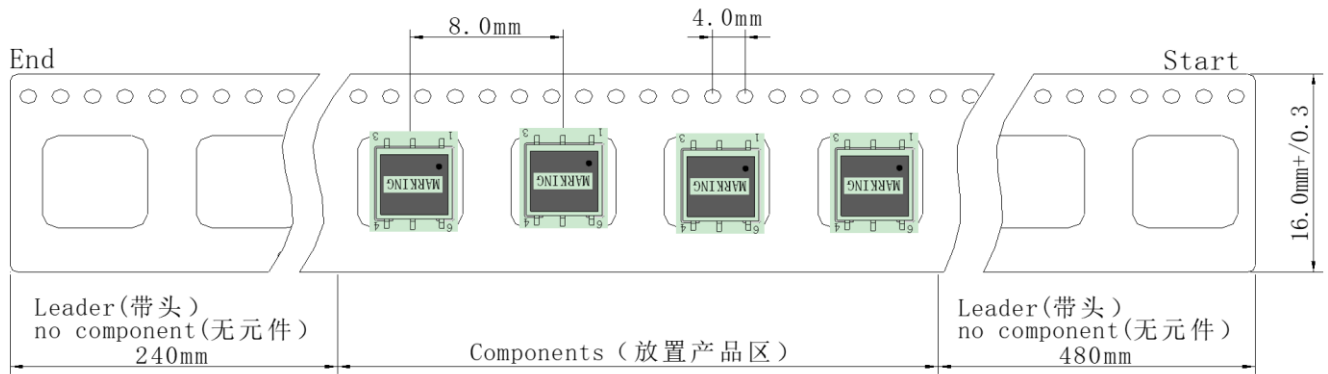
| Profile Feature                                       | LEAD (Pb)-FREE ASSEMBLY (e.g. SnAgCu) |
|---|---------------------------------------|
| Average ramp-up rate ( $T_{S(max.)}$ to $T_P$ )       | 3 °C/s maximum                        |
| Preheat   |                                       |
| - Temperature minimum ( $T_{S(min.)}$ )               | 150 °C                                |
| - Temperature maximum ( $T_{S(max.)}$ )               | 200 °C                                |
| - Time ( $T_{S(min.)}$ to $T_{S(max.)}$ ) ( $t_s$ )   | 60 s to 120 s                         |
| Time maintained above                                 |                                       |
| - Temperature minimum ( $T_L$ )                       | 217 °C                                |
| - Time ( $T_L$ )                                      | 60 s to 120 s                         |
| Minimum peak temperature ( $T_{P(min.)}$ )            | 235 °C                                |
| Recommended peak temperature ( $T_P$ )                | 245 °C                                |
| Maximum peak temperature ( $T_{P(max.)}$ )            | 250 °C                                |
| Time within 5 °C of actual peak temperature ( $t_p$ ) | 5 s to 10 s                           |
| Ramp-down rate  | 6 °C/s maximum                        |
| Time 25 °C to peak temperature                        | 6 min maximum                         |

**Notice:**

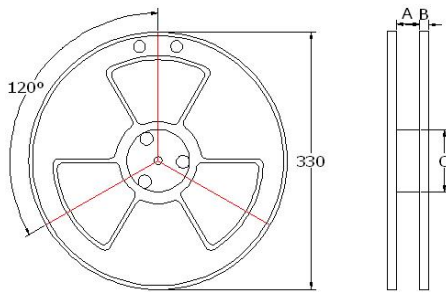
- Refer to IPC/J-STD-020E
- Above mentioned information should serve as recommendation only. Other parameters may also affect soldering results, so these profiles do not guarantee absolute success.
- Soldering profile should be determined by the manufacturer of the solder paste, providing there is no contradiction with the recommendations in this document.
- Strong forces which may affect the coplanarity of the components' electrical connection with the PCB (i.e. pins), can damage the part.
- Washing during the production to clean the customer application may damage or change the characteristics of the wire insulation, marking or plating. Washing may have a negative effect on the long-term functionality of the product. Customer need to be own evaluation risk.
- We do not recommend using brush PCBA during the cleaning process after soldering.
- If the product is potted in the customer applications, the potting material maybe shrink or expand after hardening, and lead to the part's electrical characteristics change or core crack, customer need to own evaluation the potting risk.



➤ **Packaging Detail of OWCSTxxxT-Exxx EE core Type SMD Current Sensor Transformer**



| OW P/N                                   | W    | A0  | B0  | K0  | P  | P0   | P2   | F    | E    | D0   |
|--|------|-----|-----|-----|----|------|------|------|------|------|
| <b>OWCSTxxxT-Exxx<br/>(EE5.0 series)</b> | 16.0 | 7.8 | 7.5 | 6.0 | 16 | 4.00 | 2.00 | 11.5 | 1.75 | 1.50 |



| OW P/N                                   | A  | B    | C   | Reel(Pcs) |
|--|----|------|-----|-----------|
| <b>OWCSTxxxT-Exxx<br/>(EE5.0 Series)</b> | 16 | 2.30 | 100 | 100       |

**Notice:**

- Comply with EIA-418, the Peeling-off force range 20mg to 120mg,
- A storage of OW products for longer than 12months is not recommended, the terminals may suffer degradation during storing, then the resulting in bad soldering performacne. Customer need to be pre-evaluated the solderability before using over 12months inventory.
- Do not expose the compoent to direct sunlight, or to high humidity ambinet.
- The stroage conditions is in the original packaging are defined according to EN61670-2, 12months shelf life Max. is in original packaging.
- It has to be clearly pointed out that the possibility of a malfunction of electronic components or failure before the end of the usual lifetime .cannot be completely eliminated in the current state of the art, even if the products are operated within the range of the specifications.
- The temperature rise of the component must be taken into consideration. The operating temperature is comprised of ambient temperature and temperature rise of the components .The operating temperature of the component shall not exceed the maximum temperature specified.
- Please hand it carefully because it is fragile component. Please re-test and evaluate it again if the component dropped to floor.



## ➤ Caution and Notice

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