**Condition of Soldering**

**Product** | **Diode** | **Package** | **TUMD2M**
---|---|---|---

1. Reference Condition of Reflow Soldering

- **Temperature**: 400℃ Max.
- **Duration**: Less than 3s
- **Number of Times**: One Time

※ Recommended peak temperature is over 245℃. If peak temperature is below 245℃, you may adjust the following parameters: Time length of peak temperature (longer), Time length of soldering (longer), Thickness of solder paste (thicker).

<table>
<thead>
<tr>
<th>Condition</th>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>① Pre-Heating Rate</td>
<td>1~5℃/s</td>
<td></td>
</tr>
<tr>
<td>② Pre-Heating</td>
<td>130<del>170℃, 50</del>120s</td>
<td></td>
</tr>
<tr>
<td>③ Heating Rate</td>
<td>1~5℃/s</td>
<td></td>
</tr>
<tr>
<td>④ Soldering</td>
<td>Over 230℃, 20~30s</td>
<td></td>
</tr>
<tr>
<td>⑤ Peak Temperature</td>
<td>245~260℃, 10s Max.</td>
<td></td>
</tr>
<tr>
<td>⑥ Cooling</td>
<td>60s Min.</td>
<td></td>
</tr>
<tr>
<td>⑦ Number of Times</td>
<td>2 Times Max.</td>
<td></td>
</tr>
</tbody>
</table>

2. Reference Condition of Hand Soldering

1) Temperature : 400℃ Max.
2) Duration : Less than 3s
3) Number of Times : One Time

※ We concluded that there is no specific problem in characteristics and reliability under the temperature profile above. However, since the most appropriate temperature profile condition differs depending on the solder paste, we highly recommend you examine whether there is problem in your own condition.
3. Condition of Heat-Resistant

![Graph showing temperature and soldering process]

- Peak temperature: 230°C
- Heating rate: 1~5°C/s
- Cooling: 60s Min.
- Pre-heating: 5°C/s Max.
- Pre-heating rate: 180°C Max., 120s Max.
- Soldering: Over 230°C, 40s Max.
- Peak temperature: 265°C Max., 10s Max.
- Cooling: 60s Min.
- Number of Times: 2 Times Max.

4. Condition of Washing

<table>
<thead>
<tr>
<th>Washing Bath</th>
<th>Time</th>
<th>Temperature</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Bath</td>
<td>~60sec</td>
<td>Room Temp.</td>
<td>25~28kHz, 15W/L</td>
</tr>
<tr>
<td>Second Bath</td>
<td>~60sec</td>
<td>Room Temp.</td>
<td>-</td>
</tr>
<tr>
<td>Third Bath</td>
<td>~60sec</td>
<td>~44.7°C</td>
<td>Boiling points differ to washing liquid.</td>
</tr>
</tbody>
</table>

※ In vaper bath, you cannot use ethanol, methanol, and water due to their high boiling points.

5. Reference Copper Plate Area Dimension on Printed Circuit Board

![Diagram of Copper Plate Area Dimensions]

Unit: mm

※ Copper plate area dimensions are reference dimensions with being soldered with conditions below.
- PCB: FR-4, t=1.6mm
- Solder paste: M705-GRN360-K2V
- Paste thickness: 150um
- Reflow soldering: ≤ 250°C, 10s Max.

Optimize footprint dimensions to the board design and soldering conditions.
Notes

1) The information contained herein is subject to change without notice.

2) Before you use our Products, please contact our sales representative and verify the latest specifications.

3) Although ROHM is continuously working to improve product reliability and quality, semiconductors can break down and malfunction due to various factors. Therefore, in order to prevent personal injury or fire arising from failure, please take safety measures such as complying with the derating characteristics, implementing redundant and fire prevention designs, and utilizing backups and fail-safe procedures. ROHM shall have no responsibility for any damages arising out of the use of our Products beyond the rating specified by ROHM.

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