PowerSOP® 3

PSOP3 (Power Small Outline Package) is a leadframe based, plastic encapsulated package that is well suited for applications requiring optimum performance in IC packaging. This industry standard package utilizes a thick copper heat slug to accommodate the needs of higher power devices.

Thermal Performance

<table>
<thead>
<tr>
<th>Package</th>
<th>Die Size (mm)</th>
<th>S/NS</th>
<th>θJA at (°C/W) by Velocity (LFPM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 Ld</td>
<td>5.1 x 5.1</td>
<td>S</td>
<td>50.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NS</td>
<td>52.4</td>
</tr>
</tbody>
</table>

Forced Convection, Single-layer PCB

Forced Convection, Multi-layer PCB

S = Slug soldered to test board
NS = Slug not soldered to test board
JEDEC Standard Test Boards

S = Slug soldered to test board
NS = Slug not soldered to test board

Electrical Performance

Simulated Results @ 100 MHz

<table>
<thead>
<tr>
<th>Package</th>
<th>Body Size (mm)</th>
<th>Pad Size (mm)</th>
<th>Lead</th>
<th>Inductance (nH)</th>
<th>Capacitance (pF)</th>
<th>Resistance (mF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 Ld</td>
<td>11 x 15.9</td>
<td>7.5 x 7.9</td>
<td>Longest</td>
<td>3.130</td>
<td>1.990</td>
<td>30.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Shortest</td>
<td>1.540</td>
<td>0.604</td>
<td>9.42</td>
</tr>
</tbody>
</table>

Reliability Qualification

Amkor package qualification uses three independent production lots and a minimum of 77 units per test group. All testing includes JSTD-020 moisture preconditioning.

- Moisture Sensitivity Characterization: JEDEC Level 3, 30°C/60% RH, 192 hours
- uHAST: 130°C/85% RH, No bias, 96 hours
- Temperature Cycle: -65°C/+150°C, 500 cycles
- High Temperature Storage: 150°C, 1000 hours
PowerSOP® 3

Services and Support
Amkor has a broad base of resources available to help customers bring quality products to market quickly and at the lowest possible cost.

- Full package characterization
- Thermal, mechanical stress and electrical performance modeling
- Turnkey assembly, test and drop ship
- World class reliability testing and failure analysis

Test Services
- Program generation/conversion
- Wafer probe
- Burn-in capabilities
- -55°C to +165°C test available

Shipping
- Clear anti-static tube, 20 inch
- Tape and reel
- Dry pack
- Drop ship

Configuration Options

**PowerSOP (PSOP3) Nominal Package Dimensions (mm)**

<table>
<thead>
<tr>
<th>Lead Count</th>
<th>Body Width</th>
<th>Body Length</th>
<th>Body Thickness</th>
<th>Standoff</th>
<th>Overall Height</th>
<th>Lead Pitch</th>
<th>Tip-to-Tip</th>
<th>JEDEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>11.0 mm (.433&quot;)</td>
<td>15.9</td>
<td>3.15</td>
<td>0.20</td>
<td>3.35</td>
<td>1.27</td>
<td>14.2</td>
<td>MO-166</td>
</tr>
<tr>
<td>24</td>
<td>11.0 mm (.433&quot;)</td>
<td>15.9</td>
<td>3.15</td>
<td>0.20</td>
<td>3.35</td>
<td>1.00</td>
<td>14.2</td>
<td>MO-166</td>
</tr>
<tr>
<td>30</td>
<td>11.0 mm (.433&quot;)</td>
<td>15.9</td>
<td>3.15</td>
<td>0.20</td>
<td>3.35</td>
<td>0.80</td>
<td>14.2</td>
<td>MO-166</td>
</tr>
<tr>
<td>36</td>
<td>11.0 mm (.433&quot;)</td>
<td>15.9</td>
<td>3.15</td>
<td>0.20</td>
<td>3.35</td>
<td>0.65</td>
<td>14.2</td>
<td>MO-166</td>
</tr>
<tr>
<td>44</td>
<td>11.0 mm (.433&quot;)</td>
<td>15.9</td>
<td>3.15</td>
<td>0.20</td>
<td>3.35</td>
<td>0.65</td>
<td>14.2</td>
<td>MO-166</td>
</tr>
</tbody>
</table>

Visit [amkor.com](http://amkor.com) or email sales@amkor.com for more information.

With respect to the information in this document, Amkor makes no guarantee or warranty of its accuracy or that the use of such information will not infringe upon the intellectual rights of third parties. Amkor shall not be responsible for any loss or damage of whatever nature resulting from the use of, or reliance upon it and no patent or other license is implied hereby. This document does not in any way extend or modify Amkor's warranty on any product beyond that set forth in its standard terms and conditions of sale. Amkor reserves the right to make changes in its product and specifications at any time and without notice. The Amkor name and logo are registered trademarks of Amkor Technology, Inc. All other trademarks mentioned are property of their respective companies.

© 2019 Amkor Technology Incorporated. All Rights Reserved. DS320M Rev Date: 05/19