1.0 Introduction

MACOM supplies integrated circuits, diodes, and related surface mount components in tape wound on standard 7-inch and 13-inch diameter reels. This application note documents the reel and tape dimensions and the orientation of the components within the tape cavities for many of our most popular package styles.

### Packages Covered in This Application Note:

<table>
<thead>
<tr>
<th>Package Type</th>
<th>Package Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mm X1DFN-6LD</td>
<td>LSM3</td>
</tr>
<tr>
<td>1.2 x 1.5 mm TDFN-6LD (0.5 mm pitch)</td>
<td>LSM6</td>
</tr>
<tr>
<td>1.5 x 1.2 mm TDFN-6LD (0.4 mm pitch)</td>
<td>MSOP-8, MSOP-8EP</td>
</tr>
<tr>
<td>2 mm PDFN-8LD</td>
<td>MSOP-10</td>
</tr>
<tr>
<td>2 mm STDFN-8LD</td>
<td>ODS-120 (ceramic)</td>
</tr>
<tr>
<td>2 mm STQFN-12LD</td>
<td>ODS-186 (ceramic)</td>
</tr>
<tr>
<td>2 x 2.5 mm STQFN-14LD</td>
<td>ODS-1056 (ceramic)</td>
</tr>
<tr>
<td>3 mm PQFN-12LD</td>
<td>ODS-1072 (MELF)</td>
</tr>
<tr>
<td>3 mm PQFN-12LD (1.1 mm Height)</td>
<td>ODS-1079 (MELF)</td>
</tr>
<tr>
<td>3 mm PQFN-16LD</td>
<td>ODS-1091 (MELF)</td>
</tr>
<tr>
<td>3 x 6 mm PDFN-14LD</td>
<td>ODS-1269 (GaAs flip-chip)</td>
</tr>
<tr>
<td>4 mm PQFN-16LD</td>
<td>ODS-1294 (surmount)</td>
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<tr>
<td>4 mm PQFN-20LD</td>
<td>ODS-1295 (surmount)</td>
</tr>
<tr>
<td>4 mm PQFN-24LD</td>
<td>ODS-1305 (GaAs flip-chip)</td>
</tr>
<tr>
<td>4 x 6 mm PQFN-32LD</td>
<td>ODS-1306 (surmount)</td>
</tr>
<tr>
<td>4 x 7 mm PQFN-36LD</td>
<td>ODS-1402 (GaAs flip-chip)</td>
</tr>
<tr>
<td>5 mm PQFN-20LD</td>
<td>ODS-1411 (GaAs flip-chip)</td>
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<tr>
<td>5 mm PQFN-28LD</td>
<td>ODS-1500 (GaAs flip-chip)</td>
</tr>
<tr>
<td>5 mm PQFN-32LD</td>
<td>QSO-16, QSO-16EP</td>
</tr>
<tr>
<td>5 x 6 mm PQFN-32LD</td>
<td>QSOP-24</td>
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<tr>
<td>5 x 7 mm PQFN-40LD</td>
<td>QSOP-28</td>
</tr>
<tr>
<td>6 x 5 mm PDFN-8LD</td>
<td>R-1, R-4, R-5, R-15</td>
</tr>
<tr>
<td>6 x 6 mm PQFN-20LD</td>
<td>SC70-3LD</td>
</tr>
<tr>
<td>6 x 7 mm PQFN-37LD</td>
<td>SC70-6LD</td>
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<tr>
<td>7 mm LGA-16</td>
<td>SC-79</td>
</tr>
<tr>
<td>8 mm BGA</td>
<td>SM-1</td>
</tr>
<tr>
<td>15 mm BGA</td>
<td>SM-2</td>
</tr>
<tr>
<td>BD-1, BD-2, BD-3 (Bumped Die)</td>
<td>SM-3</td>
</tr>
<tr>
<td>CR-5</td>
<td>SM-4 (same as SM-2)</td>
</tr>
<tr>
<td>LCC1</td>
<td>SM-7-1</td>
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<td>LSM1</td>
<td>SM-20</td>
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<td>LSM2</td>
<td>SM-22</td>
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## Packages Covered in This Application Note (cont.):

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<td>SM-23 (same as SM-1)</td>
<td>SSOP-24</td>
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<tr>
<td>SM-24</td>
<td>SSOP-28</td>
</tr>
<tr>
<td>SM-26</td>
<td>TSSOP-16, TSSOP-16EP</td>
</tr>
<tr>
<td>SM-28</td>
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</tr>
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<td>SM-41</td>
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<td>SM-44</td>
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<td>SM-46</td>
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<td>SM-52</td>
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<td>SM-55</td>
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<tr>
<td>SM-68 (same as SM-44)</td>
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<td>SM-69 (same as SM-1)</td>
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<td>SM-74 (same as SM-2)</td>
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<td>SM-87 (same as SM-1)</td>
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<tr>
<td>SM-89 (same as SM-1)</td>
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<td>SM-106</td>
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<tr>
<td>SM-108 (same as SM-2)</td>
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<tr>
<td>SM-134 (same as SM-1)</td>
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<td>SOD-323</td>
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<td>SOIC-8</td>
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<tr>
<td>SOIC-14</td>
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</tr>
<tr>
<td>SOIC-16</td>
<td></td>
</tr>
<tr>
<td>SOIC-16 Wide Body</td>
<td></td>
</tr>
<tr>
<td>SOIC-24 Wide Body</td>
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</tr>
<tr>
<td>SOT-23</td>
<td></td>
</tr>
<tr>
<td>SOT-25 (same as SOT-23 (5LD))</td>
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</tr>
<tr>
<td>SOT-26 (same as SOT-23 (6LD))</td>
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<td>SOT-89</td>
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<tr>
<td>SOT-143</td>
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<tr>
<td>SOW-16 (same as SOIC-16 Wide Body)</td>
<td></td>
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<tr>
<td>SOW-24 (same as SOIC-24 Wide Body)</td>
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<tr>
<td>SSOP-8</td>
<td></td>
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<tr>
<td>SSOP-20</td>
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</tbody>
</table>
2.0 Reel Dimensions

Reel Dimensions in mm

<table>
<thead>
<tr>
<th>W Tape Width</th>
<th>W₁ (+2.0/-0.0)</th>
<th>W₂ (max.)</th>
<th>N (min.)</th>
<th>B (min.)</th>
<th>C (+0.5/-0.2)</th>
<th>D (min.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A = 7 inch</td>
<td>A = 13 inch</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>8.4</td>
<td>14.4</td>
<td>50</td>
<td>1.5</td>
<td>13</td>
<td>20.2</td>
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<tr>
<td>12</td>
<td>12.4</td>
<td>18.4</td>
<td>50</td>
<td>1.5</td>
<td>13</td>
<td>20.2</td>
</tr>
<tr>
<td>16</td>
<td>16.4</td>
<td>22.4</td>
<td>50</td>
<td>1.5</td>
<td>13</td>
<td>20.2</td>
</tr>
<tr>
<td>24</td>
<td>24.4</td>
<td>30.4</td>
<td>N/A</td>
<td>1.5</td>
<td>13</td>
<td>20.2</td>
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<tr>
<td>32</td>
<td>32.4</td>
<td>38.4</td>
<td>N/A</td>
<td>1.5</td>
<td>13</td>
<td>20.2</td>
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</tbody>
</table>

1. See section 5.0 Reel Diameter Dimensions.
2. See section 3.0 Tape Dimensions.
3.0 Tape Dimensions

Tape Dimensions Table:

<table>
<thead>
<tr>
<th>Tape Dimensions</th>
<th>Description</th>
<th>Symbol</th>
<th>Size (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perforation</td>
<td>Diameter</td>
<td>D₀</td>
<td>1.5 +0.1 / -0.0</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>P₀</td>
<td>4 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Position</td>
<td>E₁</td>
<td>1.75 ± 0.1</td>
</tr>
<tr>
<td>Cover Tape</td>
<td>Thickness</td>
<td>T</td>
<td>0.25 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Thickness</td>
<td>T₁</td>
<td>0.06 ± 0.02</td>
</tr>
</tbody>
</table>

Notes:
1. 10 sprocket hole cumulative tolerance ± 0.2
2. Dimensions in millimeters (mm).
3. Not to exact scale.
4. Camber not to exceed 1 mm in 100 mm.
5. Pocket position relative to sprocket hole measured as true position of pocket, not pocket hole.
6. Metric dimensions will govern.
# 1 mm X1DFN-6LD

<table>
<thead>
<tr>
<th>Tape Dimensions</th>
<th>Description</th>
<th>Symbol</th>
<th>Size (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cavity</td>
<td>Length</td>
<td>A₀</td>
<td>1.2 + 0.0/-0.05</td>
</tr>
<tr>
<td></td>
<td>Width</td>
<td>B₀</td>
<td>1.2 + 0.0/-0.05</td>
</tr>
<tr>
<td></td>
<td>Depth</td>
<td>K₀</td>
<td>0.55 ± 0.05</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>P₁</td>
<td>4 ± 0.1</td>
</tr>
<tr>
<td>Distance Between Centerlines</td>
<td>Cavity to Perforation (length)</td>
<td>P₂</td>
<td>2 ± 0.05</td>
</tr>
<tr>
<td></td>
<td>Cavity to Perforation (width)</td>
<td>F</td>
<td>3.5 ± 0.1</td>
</tr>
<tr>
<td>Cover Tape</td>
<td>Width</td>
<td>C</td>
<td>5.5 ± 0.1</td>
</tr>
<tr>
<td>Carrier Tape</td>
<td>Width</td>
<td>W</td>
<td>8 ± 0.3</td>
</tr>
</tbody>
</table>

# 1.2 x 1.5 mm TDFN-6LD (0.5 mm Lead Pitch) & 1.5 x 1.2 mm TDFN-6LD (0.4 mm Lead Pitch)

<table>
<thead>
<tr>
<th>Tape Dimensions</th>
<th>Description</th>
<th>Symbol</th>
<th>Size (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cavity</td>
<td>Length</td>
<td>A₀</td>
<td>1.75 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Width</td>
<td>B₀</td>
<td>1.35 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Depth</td>
<td>K₀</td>
<td>1.02 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>P₁</td>
<td>4 ± 0.1</td>
</tr>
<tr>
<td>Distance Between Centerlines</td>
<td>Cavity to Perforation (length)</td>
<td>P₂</td>
<td>2 ± 0.05</td>
</tr>
<tr>
<td></td>
<td>Cavity to Perforation (width)</td>
<td>F</td>
<td>3.5 ± 0.05</td>
</tr>
<tr>
<td>Cover Tape</td>
<td>Width</td>
<td>C</td>
<td>5.4 ± 0.1</td>
</tr>
<tr>
<td>Carrier Tape</td>
<td>Width</td>
<td>W</td>
<td>8 ± 0.3</td>
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</tbody>
</table>

# 2 mm PDFN-8LD

<table>
<thead>
<tr>
<th>Tape Dimensions</th>
<th>Description</th>
<th>Symbol</th>
<th>Size (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cavity</td>
<td>Length</td>
<td>A₀</td>
<td>2.42 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Width</td>
<td>B₀</td>
<td>2.42 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Depth</td>
<td>K₀</td>
<td>1.1 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>P₁</td>
<td>4 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Diameter</td>
<td>D₁</td>
<td>1 ± 0.1</td>
</tr>
<tr>
<td>Distance Between Centerlines</td>
<td>Cavity to Perforation (length)</td>
<td>P₂</td>
<td>2 ± 0.05</td>
</tr>
<tr>
<td></td>
<td>Cavity to Perforation (width)</td>
<td>F</td>
<td>5.5 ± 0.1</td>
</tr>
<tr>
<td>Cover Tape</td>
<td>Width</td>
<td>C</td>
<td>9.2 ± 0.1</td>
</tr>
<tr>
<td>Carrier Tape</td>
<td>Width</td>
<td>W</td>
<td>12 ± 0.3</td>
</tr>
</tbody>
</table>
# Tape and Reel Packaging for Surface Mount Components

## 2 mm STDFN-8LD, 2 mm STQFN-12LD

<table>
<thead>
<tr>
<th>Tape Dimensions</th>
<th>Description</th>
<th>Symbol</th>
<th>Size (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cavity</strong></td>
<td>Length</td>
<td>A₀</td>
<td>2.3 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Width</td>
<td>B₀</td>
<td>2.3 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Depth</td>
<td>K₀</td>
<td>0.75 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>P₁</td>
<td>4 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Diameter</td>
<td>D₁</td>
<td>1 ± 0.25</td>
</tr>
<tr>
<td><strong>Distance Between</strong></td>
<td>Cavity to Perforation (length)</td>
<td>P₂</td>
<td>2 ± 0.05</td>
</tr>
<tr>
<td><strong>Centerlines</strong></td>
<td>Cavity to Perforation (width)</td>
<td>F</td>
<td>3.5 ± 0.05</td>
</tr>
<tr>
<td><strong>Cover Tape</strong></td>
<td>Width</td>
<td>C</td>
<td>5.5 ± 0.1</td>
</tr>
<tr>
<td><strong>Carrier Tape</strong></td>
<td>Width</td>
<td>W</td>
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## 2 x 2.5 mm STQFN-14LD

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<th>Description</th>
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<th>Size (mm)</th>
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<tbody>
<tr>
<td><strong>Cavity</strong></td>
<td>Length</td>
<td>A₀</td>
<td>2.2 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Width</td>
<td>B₀</td>
<td>2.7 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Depth</td>
<td>K₀</td>
<td>0.7 ± 0.05</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>P₁</td>
<td>4 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Diameter</td>
<td>D₁</td>
<td>0.7 ± 0.1</td>
</tr>
<tr>
<td><strong>Distance Between</strong></td>
<td>Cavity to Perforation (length)</td>
<td>P₂</td>
<td>2 ± 0.05</td>
</tr>
<tr>
<td><strong>Centerlines</strong></td>
<td>Cavity to Perforation (width)</td>
<td>F</td>
<td>3.5 ± 0.1</td>
</tr>
<tr>
<td><strong>Cover Tape</strong></td>
<td>Width</td>
<td>C</td>
<td>5.5 ± 0.1</td>
</tr>
<tr>
<td><strong>Carrier Tape</strong></td>
<td>Width</td>
<td>W</td>
<td>8 ± 0.3</td>
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## 3 mm PQFN-12LD, 3 mm PQFN-16LD

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<th>Description</th>
<th>Symbol</th>
<th>Size (mm)</th>
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</thead>
<tbody>
<tr>
<td><strong>Cavity</strong></td>
<td>Length</td>
<td>A₀</td>
<td>3.3 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Width</td>
<td>B₀</td>
<td>3.3 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Depth</td>
<td>K₀</td>
<td>1.1 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>P₁</td>
<td>8 ± 0.1</td>
</tr>
<tr>
<td><strong>Distance Between</strong></td>
<td>Cavity to Perforation (length)</td>
<td>P₂</td>
<td>2 ± 0.1</td>
</tr>
<tr>
<td><strong>Centerlines</strong></td>
<td>Cavity to Perforation (width)</td>
<td>F</td>
<td>5.5 ± 0.1</td>
</tr>
<tr>
<td><strong>Cover Tape</strong></td>
<td>Width</td>
<td>C</td>
<td>9.2 ± 0.1</td>
</tr>
<tr>
<td><strong>Carrier Tape</strong></td>
<td>Width</td>
<td>W</td>
<td>12 ± 0.3</td>
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### 3 mm PQFN-12LD (1.1 mm Height)

<table>
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<th>Symbol</th>
<th>Size (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cavity</strong></td>
<td>Length</td>
<td>$A_0$</td>
<td>3.3 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Width</td>
<td>$B_0$</td>
<td>3.3 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Depth</td>
<td>$K_0$</td>
<td>1.3 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>$P_1$</td>
<td>8 ± 0.1</td>
</tr>
<tr>
<td><strong>Distance Between Centerlines</strong></td>
<td>Cavity to Perforation (length)</td>
<td>$P_2$</td>
<td>2 ± 0.05</td>
</tr>
<tr>
<td></td>
<td>Cavity to Perforation (width)</td>
<td>$F$</td>
<td>5.5 ± 0.05</td>
</tr>
<tr>
<td><strong>Cover Tape</strong></td>
<td>Width</td>
<td>$C$</td>
<td>9.2 ± 0.1</td>
</tr>
<tr>
<td><strong>Carrier Tape</strong></td>
<td>Width</td>
<td>$W$</td>
<td>12 ± 0.3</td>
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</tbody>
</table>

### 3 x 6 mm PDFN-14LD

<table>
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<th>Tape Dimensions</th>
<th>Description</th>
<th>Symbol</th>
<th>Size (mm)</th>
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<tbody>
<tr>
<td><strong>Cavity</strong></td>
<td>Length</td>
<td>$A_0$</td>
<td>3.25 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Width</td>
<td>$B_0$</td>
<td>6.35 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Depth</td>
<td>$K_0$</td>
<td>1.1 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>$P_1$</td>
<td>8 ± 0.1</td>
</tr>
<tr>
<td><strong>Distance Between Centerlines</strong></td>
<td>Cavity to Perforation (length)</td>
<td>$P_2$</td>
<td>2 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Cavity to Perforation (width)</td>
<td>$F$</td>
<td>7.5 ± 0.1</td>
</tr>
<tr>
<td><strong>Cover Tape</strong></td>
<td>Width</td>
<td>$C$</td>
<td>13.3 ± 0.1</td>
</tr>
<tr>
<td><strong>Carrier Tape</strong></td>
<td>Width</td>
<td>$W$</td>
<td>16 ± 0.3</td>
</tr>
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</table>

### 4 mm PQFN-16LD, 4 mm PQFN-20LD, 4 mm PQFN-24LD

<table>
<thead>
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<th>Description</th>
<th>Symbol</th>
<th>Size (mm)</th>
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<tbody>
<tr>
<td><strong>Cavity</strong></td>
<td>Length</td>
<td>$A_0$</td>
<td>4.35 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Width</td>
<td>$B_0$</td>
<td>4.35 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Depth</td>
<td>$K_0$</td>
<td>1.1 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>$P_1$</td>
<td>8 ± 0.1</td>
</tr>
<tr>
<td><strong>Distance Between Centerlines</strong></td>
<td>Cavity to Perforation (length)</td>
<td>$P_2$</td>
<td>2 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Cavity to Perforation (width)</td>
<td>$F$</td>
<td>5.5 ± 0.1</td>
</tr>
<tr>
<td><strong>Cover Tape</strong></td>
<td>Width</td>
<td>$C$</td>
<td>9.2 ± 0.1</td>
</tr>
<tr>
<td><strong>Carrier Tape</strong></td>
<td>Width</td>
<td>$W$</td>
<td>12 ± 0.3</td>
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</tbody>
</table>
# Tape and Reel Packaging for Surface Mount Components

## 4 x 6 mm PQFN-32LD

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<td>$A_0$</td>
<td>$4.2 \pm 0.1$</td>
</tr>
<tr>
<td></td>
<td>Width</td>
<td>$B_0$</td>
<td>$6.2 \pm 0.1$</td>
</tr>
<tr>
<td></td>
<td>Depth</td>
<td>$K_0$</td>
<td>$1.2 \pm 0.1$</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>$P_1$</td>
<td>$8 \pm 0.1$</td>
</tr>
<tr>
<td>Carrier Tape</td>
<td>Width</td>
<td>$W$</td>
<td>$12 \pm 0.3$</td>
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## 4 x 7 mm PQFN-36LD

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<tr>
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<td>Length</td>
<td>$A_0$</td>
<td>$4.2 \pm 0.1$</td>
</tr>
<tr>
<td></td>
<td>Width</td>
<td>$B_0$</td>
<td>$7.2 \pm 0.1$</td>
</tr>
<tr>
<td></td>
<td>Depth</td>
<td>$K_0$</td>
<td>$1.2 \pm 0.1$</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>$P_1$</td>
<td>$8 \pm 0.1$</td>
</tr>
<tr>
<td>Carrier Tape</td>
<td>Width</td>
<td>$W$</td>
<td>$12 \pm 0.3$</td>
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## 5 mm PQFN-20LD, 5 mm PQFN-28LD, 5 mm PQFN-32LD

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<th>Description</th>
<th>Symbol</th>
<th>Size (mm)</th>
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<tbody>
<tr>
<td>Cavity</td>
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<td>$5.25 \pm 0.1$</td>
</tr>
<tr>
<td></td>
<td>Width</td>
<td>$B_0$</td>
<td>$5.25 \pm 0.1$</td>
</tr>
<tr>
<td></td>
<td>Depth</td>
<td>$K_0$</td>
<td>$1.1 \pm 0.1$</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>$P_1$</td>
<td>$8 \pm 0.1$</td>
</tr>
<tr>
<td>Distance Between Centerlines</td>
<td>Cavity to Perforation (length)</td>
<td>$P_2$</td>
<td>$2 \pm 0.1$</td>
</tr>
<tr>
<td></td>
<td>Cavity to Perforation (width)</td>
<td>$F$</td>
<td>$5.5 \pm 0.1$</td>
</tr>
<tr>
<td>Cover Tape</td>
<td>Width</td>
<td>$C$</td>
<td>$9.2 \pm 0.1$</td>
</tr>
<tr>
<td>Carrier Tape</td>
<td>Width</td>
<td>$W$</td>
<td>$12 \pm 0.3$</td>
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</table>
# Tape and Reel Packaging for Surface Mount Components

## 5 x 6 mm PQFN-32LD

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<th>Description</th>
<th>Symbol</th>
<th>Size (mm)</th>
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</thead>
<tbody>
<tr>
<td>Cavity</td>
<td>Length</td>
<td>A₀</td>
<td>5.3 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Width</td>
<td>B₀</td>
<td>6.3 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Depth</td>
<td>K₀</td>
<td>1.2 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>P₁</td>
<td>8 ± 0.1</td>
</tr>
<tr>
<td>Carrier Tape</td>
<td>Width</td>
<td>W</td>
<td>16 ± 0.3</td>
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</tbody>
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## 5 x 7 mm PQFN-40LD

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<th>Symbol</th>
<th>Size (mm)</th>
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<tbody>
<tr>
<td>Cavity</td>
<td>Length</td>
<td>A₀</td>
<td>5.5 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Width</td>
<td>B₀</td>
<td>7.5 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Depth</td>
<td>K₀</td>
<td>1.5 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>P₁</td>
<td>8 ± 0.1</td>
</tr>
<tr>
<td>Distance Between Centerlines</td>
<td>Cavity to Perforation (length)</td>
<td>P₂</td>
<td>2 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Cavity to Perforation (width)</td>
<td>F</td>
<td>7.5 ± 0.1</td>
</tr>
<tr>
<td>Cover Tape</td>
<td>Width</td>
<td>C</td>
<td>13.3 ± 0.1</td>
</tr>
<tr>
<td>Carrier Tape</td>
<td>Width</td>
<td>W</td>
<td>16 ± 0.3</td>
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## 6 x 5 mm PDFN-8LD

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<th>Size (mm)</th>
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<td>Cavity</td>
<td>Length</td>
<td>A₀</td>
<td>6.5 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Width</td>
<td>B₀</td>
<td>5.5 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Depth</td>
<td>K₀</td>
<td>1.4 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>P₁</td>
<td>8 ± 0.1</td>
</tr>
<tr>
<td>Distance Between Centerlines</td>
<td>Cavity to Perforation (length)</td>
<td>P₂</td>
<td>2 ± 0.05</td>
</tr>
<tr>
<td></td>
<td>Cavity to Perforation (width)</td>
<td>F</td>
<td>5.5 ± 0.05</td>
</tr>
<tr>
<td>Cover Tape</td>
<td>Width</td>
<td>C</td>
<td>9.3 ± 0.1</td>
</tr>
<tr>
<td>Carrier Tape</td>
<td>Width</td>
<td>W</td>
<td>12 ± 0.3</td>
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</tbody>
</table>
## Tape and Reel Packaging for Surface Mount Components

### 6 x 6 mm PQFN-20LD

<table>
<thead>
<tr>
<th>Tape Dimensions</th>
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<th>Symbol</th>
<th>Size (mm)</th>
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<tbody>
<tr>
<td>Cavity</td>
<td>Length</td>
<td>A₀</td>
<td>6.3 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Width</td>
<td>B₀</td>
<td>6.3 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Depth</td>
<td>K₀</td>
<td>1.2 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>P₁</td>
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</tr>
<tr>
<td>Carrier Tape</td>
<td>Width</td>
<td>W</td>
<td>16 ± 0.3</td>
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### 6 x 7 mm PQFN-37LD

<table>
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<th>Size (mm)</th>
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<tbody>
<tr>
<td>Cavity</td>
<td>Length</td>
<td>A₀</td>
<td>6.4 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Width</td>
<td>B₀</td>
<td>7.4 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Depth</td>
<td>K₀</td>
<td>1.2 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>P₁</td>
<td>12 ± 0.1</td>
</tr>
<tr>
<td>Carrier Tape</td>
<td>Width</td>
<td>W</td>
<td>16 ± 0.3</td>
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</tbody>
</table>

### 7 mm LGA-16LD

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<th>Symbol</th>
<th>Size (mm)</th>
</tr>
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<tbody>
<tr>
<td>Cavity</td>
<td>Length</td>
<td>A₀</td>
<td>7.4 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Width</td>
<td>B₀</td>
<td>7.4 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Depth</td>
<td>K₀</td>
<td>1.9 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
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</tr>
<tr>
<td>Distance Between Centerlines</td>
<td>Cavity to Perforation (length)</td>
<td>P₂</td>
<td>2 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Cavity to Perforation (width)</td>
<td>F</td>
<td>7.5 ± 0.1</td>
</tr>
<tr>
<td>Cover Tape</td>
<td>Width</td>
<td>C</td>
<td>13.3 ± 0.1</td>
</tr>
<tr>
<td>Carrier Tape</td>
<td>Width</td>
<td>W</td>
<td>16 ± 0.3</td>
</tr>
</tbody>
</table>
## Tape and Reel Packaging for Surface Mount Components

### 8 mm BGA

<table>
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<th>Description</th>
<th>Symbol</th>
<th>Size (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cavity</strong></td>
<td>Length</td>
<td>A0</td>
<td>8.3 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Width</td>
<td>B0</td>
<td>8.3 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Depth</td>
<td>K0</td>
<td>2.7 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>P1</td>
<td>12 ± 0.1</td>
</tr>
<tr>
<td><strong>Distance Between Centerlines</strong></td>
<td>Cavity to Perforation (length)</td>
<td>P2</td>
<td>2 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Cavity to Perforation (width)</td>
<td>F</td>
<td>7.5 ± 0.1</td>
</tr>
<tr>
<td><strong>Cover Tape</strong></td>
<td>Width</td>
<td>C</td>
<td>13.3 ± 0.1</td>
</tr>
<tr>
<td><strong>Carrier Tape</strong></td>
<td>Width</td>
<td>W</td>
<td>16 ± 0.1</td>
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### 15 mm BGA

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<th>Description</th>
<th>Symbol</th>
<th>Size (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cavity</strong></td>
<td>Length</td>
<td>A0</td>
<td>15.3 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Width</td>
<td>B0</td>
<td>15.3 ± 0.1</td>
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<td></td>
<td>Depth</td>
<td>K0</td>
<td>3.8 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>P1</td>
<td>20 ± 0.1</td>
</tr>
<tr>
<td><strong>Distance Between Centerlines</strong></td>
<td>Cavity to Perforation (length)</td>
<td>P2</td>
<td>2 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Cavity to Perforation (width)</td>
<td>F</td>
<td>11.5 ± 0.1</td>
</tr>
<tr>
<td><strong>Cover Tape</strong></td>
<td>Width</td>
<td>C</td>
<td>21 ± 0.1</td>
</tr>
<tr>
<td><strong>Carrier Tape</strong></td>
<td>Width</td>
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</tbody>
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### BD-1

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<tr>
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<td>Length</td>
<td>A₀</td>
<td>0.82 ± 0.05</td>
</tr>
<tr>
<td></td>
<td>Width</td>
<td>B₀</td>
<td>0.82 ± 0.05</td>
</tr>
<tr>
<td></td>
<td>Depth</td>
<td>K₀</td>
<td>0.395 ± 0.05</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>P₁</td>
<td>4 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Pocket Hole Diameter</td>
<td>D₁</td>
<td>0.35 ± 0.05</td>
</tr>
<tr>
<td><strong>Distance Between Centerlines</strong></td>
<td>Cavity to Perforation (length)</td>
<td>P₂</td>
<td>2 ± 0.05</td>
</tr>
<tr>
<td></td>
<td>Cavity to Perforation (width)</td>
<td>F</td>
<td>3.5 ± 0.05</td>
</tr>
<tr>
<td><strong>Cover Tape</strong></td>
<td>Width</td>
<td>C</td>
<td>5.3 ± 0.1</td>
</tr>
<tr>
<td><strong>Carrier Tape</strong></td>
<td>Width</td>
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### BD-2

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<td><strong>Cavity</strong></td>
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<td>A₀</td>
<td>1.1 ± 0.05</td>
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<td></td>
<td>Width</td>
<td>B₀</td>
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<td>Depth</td>
<td>K₀</td>
<td>0.298 ± 0.028</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>P₁</td>
<td>4 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Pocket Hole Diameter</td>
<td>D₁</td>
<td>0.5 ± 0.05</td>
</tr>
<tr>
<td><strong>Distance Between Centerlines</strong></td>
<td>Cavity to Perforation (length)</td>
<td>P₂</td>
<td>2 ± 0.05</td>
</tr>
<tr>
<td></td>
<td>Cavity to Perforation (width)</td>
<td>F</td>
<td>3.5 ± 0.05</td>
</tr>
<tr>
<td><strong>Cover Tape</strong></td>
<td>Width</td>
<td>C</td>
<td>5.3 ± 0.1</td>
</tr>
<tr>
<td><strong>Carrier Tape</strong></td>
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<td>8 ± 0.1</td>
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### BD-3

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<td>Width</td>
<td>B₀</td>
<td>0.7 ± 0.05</td>
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<td></td>
<td>Depth</td>
<td>K₀</td>
<td>0.36 ± 0.05</td>
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<tr>
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<td>Pitch</td>
<td>P₁</td>
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<tr>
<td></td>
<td>Pocket Hole Diameter</td>
<td>D₁</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Distance Between Centerlines</strong></td>
<td>Cavity to Perforation (length)</td>
<td>P₂</td>
<td>2 ± 0.05</td>
</tr>
<tr>
<td></td>
<td>Cavity to Perforation (width)</td>
<td>F</td>
<td>3.5 ± 0.05</td>
</tr>
<tr>
<td><strong>Cover Tape</strong></td>
<td>Width</td>
<td>C</td>
<td>5.3 ± 0.1</td>
</tr>
<tr>
<td><strong>Carrier Tape</strong></td>
<td>Width</td>
<td>W</td>
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</table>
# Application Note

## Tape and Reel Packaging for Surface Mount Components

### CR-5

<table>
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<th>Description</th>
<th>Symbol</th>
<th>Size (mm)</th>
</tr>
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<td>A₀</td>
<td>9.02 ± 0.1</td>
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<tr>
<td></td>
<td>Width</td>
<td>B₀</td>
<td>9.91 ± 0.1</td>
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<tr>
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<td>Depth</td>
<td>K₀</td>
<td>2.03 ± 0.1</td>
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<td>Pitch</td>
<td>P₁</td>
<td>12 ± 0.1</td>
</tr>
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<td>Distance Between</td>
<td>Cavity to Perforation (length)</td>
<td>P₂</td>
<td>2 ± 0.1</td>
</tr>
<tr>
<td>Centerlines</td>
<td>Cavity to Perforation (width)</td>
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<td>11.5 ± 0.1</td>
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<tr>
<td>Cover Tape</td>
<td>Width</td>
<td>C</td>
<td>21 ± 0.1</td>
</tr>
<tr>
<td>Carrier Tape</td>
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<td>24 ± 0.3</td>
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### LCC1

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<td>2 ± 0.1</td>
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<tr>
<td>Centerlines</td>
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<td>F</td>
<td>11.5</td>
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<tr>
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<td>Cavity to Perforation (width)</td>
<td>F</td>
<td>11.5</td>
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<td>Cavity to Perforation (width)</td>
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<td>Depth</td>
<td>K₀</td>
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<td></td>
<td>Pitch</td>
<td>P₁</td>
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</tr>
<tr>
<td>Distance Between Centerlines</td>
<td>Cavity to Perforation (length)</td>
<td>P₂</td>
<td>2 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Cavity to Perforation (width)</td>
<td>F</td>
<td>11.5</td>
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<tr>
<td>Carrier Tape</td>
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<td>W</td>
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# Tape and Reel Packaging for Surface Mount Components

## MSOP-8, MSOP-8EP, MSOP-10

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<td></td>
<td>Width</td>
<td>B₀</td>
<td>3.4 ± 0.1</td>
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<tr>
<td></td>
<td>Depth</td>
<td>K₀</td>
<td>1.4 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>P₁</td>
<td>8 ± 0.1</td>
</tr>
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<td>Distance Between Centerlines</td>
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<td>2 ± 0.1</td>
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<tr>
<td></td>
<td>Cavity to Perforation (width)</td>
<td>F</td>
<td>5.5 ± 0.1</td>
</tr>
<tr>
<td>Cover Tape</td>
<td>Width</td>
<td>C</td>
<td>9.2 ± 0.1</td>
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<tr>
<td>Carrier Tape</td>
<td>Width</td>
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## ODS-120

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<th>Size (mm)</th>
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<td>Width</td>
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<td>Depth</td>
<td>K₀</td>
<td>1.42 - 1.78</td>
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<td>Pitch</td>
<td>P₁</td>
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<td>Distance Between Centerlines</td>
<td>Cavity to Perforation (length)</td>
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<td>2 ± 0.05</td>
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<td>Cavity to Perforation (width)</td>
<td>F</td>
<td>3.5 ± 0.05</td>
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<td>Cover Tape</td>
<td>Width</td>
<td>C</td>
<td>5.4 ± 0.1</td>
</tr>
<tr>
<td>Carrier Tape</td>
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## ODS-186

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<td></td>
<td>Depth</td>
<td>K₀</td>
<td>1.37 ± 0.1</td>
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<tr>
<td></td>
<td>Pitch</td>
<td>P₁</td>
<td>12 ± 0.1</td>
</tr>
<tr>
<td>Distance Between Centerlines</td>
<td>Cavity to Perforation (length)</td>
<td>P₂</td>
<td>2 ± 0.1</td>
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<tr>
<td></td>
<td>Cavity to Perforation (width)</td>
<td>F</td>
<td>7.5 ± 0.1</td>
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<tr>
<td>Cover Tape</td>
<td>Width</td>
<td>C</td>
<td>13.3 ± 0.1</td>
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<tr>
<td>Carrier Tape</td>
<td>Width</td>
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# Tape and Reel Packaging for Surface Mount Components

## ODS-1056

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<td>Cavity Width</td>
<td>B₀</td>
<td>2 ± 0.1</td>
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<tr>
<td>Cavity Depth</td>
<td>K₀</td>
<td>1.19 ± 0.1</td>
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<tr>
<td>Pitch</td>
<td>P₁</td>
<td>4 ± 0.1</td>
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<tr>
<td>Cavity to Perforation (length)</td>
<td>P₂</td>
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<tr>
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<td>F</td>
<td>3.5 ± 0.05</td>
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<tr>
<td>Cover Tape Width</td>
<td>C</td>
<td>5.4 ± 0.1</td>
</tr>
<tr>
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## ODS-1072

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<td>K₀</td>
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<td>Cavity to Perforation (length)</td>
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<tr>
<td>Cavity to Perforation (width)</td>
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<td>5.5 ± 0.05</td>
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<td>9.3 ± 0.1</td>
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## ODS-1079

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<tr>
<td>Cavity Width</td>
<td>B₀</td>
<td>3.2 ± 0.1</td>
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<tr>
<td>Cavity Depth</td>
<td>K₀</td>
<td>3.12 ± 0.1</td>
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<tr>
<td>Pitch</td>
<td>P₁</td>
<td>8 ± 0.1</td>
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<td>Cavity to Perforation (length)</td>
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<td>2 ± 0.05</td>
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<tr>
<td>Cavity to Perforation (width)</td>
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<td>5.5 ± 0.05</td>
</tr>
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<td>Cover Tape Width</td>
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<td>9.3 ± 0.1</td>
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<tr>
<td>Carrier Tape Width</td>
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<td>12 ± 0.3</td>
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**For further information and support please visit:**
[https://www.macom.com/support](https://www.macom.com/support)
### ODS-1091

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<td>Pitch</td>
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<td>9.3 ± 0.1</td>
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### ODS-1294,1295,1306

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<td>Depth</td>
<td>K₀</td>
<td>0.3 ± 0.05</td>
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<tr>
<td></td>
<td>Pitch</td>
<td>P₁</td>
<td>4.0 ± 0.1</td>
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<tr>
<td>Distance Between Centerlines</td>
<td>Cavity to Perforation (length)</td>
<td>P₂</td>
<td>2 ± 0.05</td>
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<tr>
<td></td>
<td>Cavity to Perforation (width)</td>
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<td>3.5 ± 0.05</td>
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<tr>
<td>Cover Tape</td>
<td>Width</td>
<td>C</td>
<td>5.4 ± 0.1</td>
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### ODS-1305,1269

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<td>Width</td>
<td>B₀</td>
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<td>Depth</td>
<td>K₀</td>
<td>0.28 ± 0.03</td>
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<td>Pitch</td>
<td>P₁</td>
<td>4 ± 0.1</td>
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<tr>
<td>Distance Between Centerlines</td>
<td>Cavity to Perforation (length)</td>
<td>P₂</td>
<td>2 ± 0.05</td>
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<tr>
<td></td>
<td>Cavity to Perforation (width)</td>
<td>F</td>
<td>3.5 ± 0.05</td>
</tr>
<tr>
<td>Cover Tape</td>
<td>Width</td>
<td>C</td>
<td>5.4 ± 0.1</td>
</tr>
<tr>
<td>Carrier Tape</td>
<td>Width</td>
<td>W</td>
<td>8 ±0.3/-0.1</td>
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</table>
# Tape and Reel Packaging for Surface Mount Components

## ODS-1402, 1411, 1500

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<th>Symbol</th>
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<td>0.47 ± 0.03</td>
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<td>Depth</td>
<td>$K_0$</td>
<td>0.31 ± 0.03</td>
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<td>Pitch</td>
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<tr>
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<td>Cavity to Perforation (length)</td>
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<td></td>
<td>Cavity to Perforation (width)</td>
<td>$F$</td>
<td>3.5 ± 0.05</td>
</tr>
<tr>
<td><strong>Cover Tape</strong></td>
<td>Width</td>
<td>$C$</td>
<td>5.4 ± 0.1</td>
</tr>
<tr>
<td><strong>Carrier Tape</strong></td>
<td>Width</td>
<td>$W$</td>
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## QSOP-16, QSOP-16EP

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<td>Depth</td>
<td>$K_0$</td>
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<td>Pitch</td>
<td>$P_1$</td>
<td>8 ± 0.1</td>
</tr>
<tr>
<td><strong>Distance Between Centerlines</strong></td>
<td>Cavity to Perforation (length)</td>
<td>$P_2$</td>
<td>2 ± 0.1</td>
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<tr>
<td></td>
<td>Cavity to Perforation (width)</td>
<td>$F$</td>
<td>7.5 ± 0.1</td>
</tr>
<tr>
<td><strong>Cover Tape</strong></td>
<td>Width</td>
<td>$C$</td>
<td>13.3 ± 0.1</td>
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<tr>
<td><strong>Carrier Tape</strong></td>
<td>Width</td>
<td>$W$</td>
<td>16 ± 0.3</td>
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## QSOP-24

<table>
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<td><strong>Cavity</strong></td>
<td>Length</td>
<td>$A_0$</td>
<td>6.5 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Width</td>
<td>$B_0$</td>
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<tr>
<td></td>
<td>Depth</td>
<td>$K_0$</td>
<td>2.1 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>$P_1$</td>
<td>8 ± 0.1</td>
</tr>
<tr>
<td><strong>Distance Between Centerlines</strong></td>
<td>Cavity to Perforation (length)</td>
<td>$P_2$</td>
<td>2 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Cavity to Perforation (width)</td>
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<td>7.5 ± 0.1</td>
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<tr>
<td><strong>Cover Tape</strong></td>
<td>Width</td>
<td>$C$</td>
<td>13.3 ± 0.1</td>
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### QSOP-28

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<tr>
<td>Pitch</td>
<td>( P_1 )</td>
<td></td>
<td>8 ± 0.1</td>
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<tr>
<td><strong>Distance Between Centerlines</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Cavity to Perforation (length)</td>
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<td>2 ± 0.1</td>
</tr>
<tr>
<td>Cavity to Perforation (width)</td>
<td>( F )</td>
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<tr>
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### R-1, R-4, R-5, R-15

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<tr>
<td>Pitch</td>
<td>( P_1 )</td>
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<tr>
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### SC70-3LD, SC70-6LD

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</tr>
<tr>
<td>Cavity to Perforation (width)</td>
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<td>5.4 ± 0.1</td>
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<td><strong>Carrier Tape</strong></td>
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### SC-79

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<td>P₁</td>
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<td>Cavity to Perforation</td>
<td>P₂</td>
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<tr>
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<td>Width</td>
<td>C</td>
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<tr>
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<td>Width</td>
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### SM-1, SM-23, SM-69, SM-87, SM-89, SM-134

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<tr>
<td></td>
<td>Depth</td>
<td>K₀</td>
<td>5.3 ± 0.1</td>
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<tr>
<td></td>
<td>Pitch</td>
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<tr>
<td>Carrier Tape</td>
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### SM-2, SM-4, SM-74, SM-108

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<td>10.26 ± 0.1</td>
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<tr>
<td></td>
<td>Width</td>
<td>B₀</td>
<td>13.46 ± 0.1</td>
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<tr>
<td></td>
<td>Depth</td>
<td>K₀</td>
<td>6.1 ± 0.1</td>
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<tr>
<td></td>
<td>Pitch</td>
<td>P₁</td>
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<tr>
<td>Carrier Tape</td>
<td>Width</td>
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<td>24 ± 0.3</td>
</tr>
</tbody>
</table>

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Tape and Reel Packaging for Surface Mount Components

### SM-3

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<tr>
<td></td>
<td>Width</td>
<td>B₀</td>
<td>20.5 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Depth</td>
<td>K₀</td>
<td>5.3 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>P₁</td>
<td>24 ± 0.1</td>
</tr>
<tr>
<td>Carrier Tape</td>
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### SM-7-1

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<tr>
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<td>Width</td>
<td>B₀</td>
<td>21.4 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Depth</td>
<td>K₀</td>
<td>5.6 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>P₁</td>
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</tr>
<tr>
<td>Carrier Tape</td>
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### SM-20

<table>
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<tr>
<td></td>
<td>Width</td>
<td>B₀</td>
<td>15.4 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Depth</td>
<td>K₀</td>
<td>7.1 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>P₁</td>
<td>12 ± 0.1</td>
</tr>
<tr>
<td>Carrier Tape</td>
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### SM-22

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<tr>
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<td>Depth</td>
<td>K₀</td>
<td>2.8 ± 0.1</td>
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<td>Pitch</td>
<td>P₁</td>
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# Tape and Reel Packaging for Surface Mount Components

## SM-24

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<td>Width</td>
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<td>Pitch</td>
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## SM-26

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<td></td>
<td>Pitch</td>
<td>P₁</td>
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<tr>
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## SM-28

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## SM-41

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<td>Depth</td>
<td>K₀</td>
<td>7.4 ± 0.1</td>
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<td></td>
<td>Pitch</td>
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<tr>
<td>Carrier Tape</td>
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# Tape and Reel Packaging for Surface Mount Components

## SM-44, SM-68

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<td>Width</td>
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<td>Depth</td>
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<td>Pitch</td>
<td>P₁</td>
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<tr>
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## SM-46

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<td>Width</td>
<td>B₀</td>
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<td>Depth</td>
<td>K₀</td>
<td>6.8 ± 0.1</td>
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<tr>
<td></td>
<td>Pitch</td>
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</tr>
<tr>
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## SM-52

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</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>P₁</td>
<td>8 ± 0.1</td>
</tr>
<tr>
<td>Carrier Tape</td>
<td>Width</td>
<td>W</td>
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## SM-55

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<td>Depth</td>
<td>K₀</td>
<td>3.5 ± 0.1</td>
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<tr>
<td></td>
<td>Pitch</td>
<td>P₁</td>
<td>12 ± 0.1</td>
</tr>
<tr>
<td>Carrier Tape</td>
<td>Width</td>
<td>W</td>
<td>16 ± 0.3</td>
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### SM-106

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<th>Symbol</th>
<th>Size (mm)</th>
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<td>Width</td>
<td>(B_0)</td>
<td>20.8 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Depth</td>
<td>(K_0)</td>
<td>6 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>(P_1)</td>
<td>24 ± 0.1</td>
</tr>
<tr>
<td>Carrier Tape</td>
<td>Width</td>
<td>(W)</td>
<td>32 ± 0.3</td>
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</table>

### SOD-323

<table>
<thead>
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<th>Description</th>
<th>Symbol</th>
<th>Size (mm)</th>
</tr>
</thead>
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<td>Length</td>
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<td>1.46 ± 0.1</td>
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<td></td>
<td>Width</td>
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<td>2.9 ± 0.05</td>
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<td></td>
<td>Depth</td>
<td>(K_0)</td>
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<td>(P_2)</td>
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<tr>
<td></td>
<td>Cavity to Perforation (width)</td>
<td>(F)</td>
<td>3.5 ± 0.05</td>
</tr>
<tr>
<td>Cover Tape</td>
<td>Width</td>
<td>(C)</td>
<td>5.4 ± 0.1</td>
</tr>
<tr>
<td>Carrier Tape</td>
<td>Width</td>
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### SOIC-8 (SO-8)

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<td>6.4 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Width</td>
<td>(B_0)</td>
<td>5.2 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Depth</td>
<td>(K_0)</td>
<td>2.1 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>(P_1)</td>
<td>8 ± 0.1</td>
</tr>
<tr>
<td>Distance Between Centerlines</td>
<td>Cavity to Perforation (length)</td>
<td>(P_2)</td>
<td>2 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Cavity to Perforation (width)</td>
<td>(F)</td>
<td>5.5 ± 0.1</td>
</tr>
<tr>
<td>Cover Tape</td>
<td>Width</td>
<td>(C)</td>
<td>9.2 ± 0.1</td>
</tr>
<tr>
<td>Carrier Tape</td>
<td>Width</td>
<td>(W)</td>
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# Tape and Reel Packaging for Surface Mount Components

## SOIC-14 (SO-14), SSOP-24

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<td>A₀</td>
<td>6.5 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Width</td>
<td>B₀</td>
<td>9 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Depth</td>
<td>K₀</td>
<td>2.1 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>P₁</td>
<td>8 ± 0.1</td>
</tr>
<tr>
<td>Distance Between Centerlines</td>
<td>Cavity to Perforation (length)</td>
<td>P₂</td>
<td>2 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Cavity to Perforation (width)</td>
<td>F</td>
<td>7.5 ± 0.1</td>
</tr>
<tr>
<td>Cover Tape</td>
<td>Width</td>
<td>C</td>
<td>13.3 ± 0.1</td>
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<tr>
<td>Carrier Tape</td>
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## SOIC-16 (SO-16), SSOP-28

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<th>Symbol</th>
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<td>Cavity</td>
<td>Length</td>
<td>A₀</td>
<td>6.5 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Width</td>
<td>B₀</td>
<td>10.3 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Depth</td>
<td>K₀</td>
<td>2.1 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>P₁</td>
<td>8 ± 0.1</td>
</tr>
<tr>
<td>Distance Between Centerlines</td>
<td>Cavity to Perforation (length)</td>
<td>P₂</td>
<td>2 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Cavity to Perforation (width)</td>
<td>F</td>
<td>7.5 ± 0.1</td>
</tr>
<tr>
<td>Cover Tape</td>
<td>Width</td>
<td>C</td>
<td>13.3 ± 0.1</td>
</tr>
<tr>
<td>Carrier Tape</td>
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<td>W</td>
<td>16 ± 0.3</td>
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## SOT-23

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<th>Size (mm)</th>
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<td>Cavity</td>
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<td>3.125 ± 0.125</td>
</tr>
<tr>
<td></td>
<td>Width</td>
<td>B₀</td>
<td>2.835 ± 0.165</td>
</tr>
<tr>
<td></td>
<td>Depth</td>
<td>K₀</td>
<td>1.23 ± 0.11</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>P₁</td>
<td>4 ± 0.1</td>
</tr>
<tr>
<td>Distance Between Centerlines</td>
<td>Cavity to Perforation (length)</td>
<td>P₂</td>
<td>2 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Cavity to Perforation (width)</td>
<td>F</td>
<td>3.5 ± 0.1</td>
</tr>
<tr>
<td>Cover Tape</td>
<td>Width</td>
<td>C</td>
<td>5.4 ± 0.1</td>
</tr>
<tr>
<td>Carrier Tape</td>
<td>Width</td>
<td>W</td>
<td>8 ± 0.3</td>
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# Tape and Reel Packaging for Surface Mount Components

## SOT-25, SOT-26

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<td></td>
</tr>
<tr>
<td>Length</td>
<td>( A_0 )</td>
<td></td>
<td>3.2 ± 0.1</td>
</tr>
<tr>
<td>Width</td>
<td>( B_0 )</td>
<td></td>
<td>3.2 ± 0.1</td>
</tr>
<tr>
<td>Depth</td>
<td>( K_0 )</td>
<td></td>
<td>1.4 ± 0.1</td>
</tr>
<tr>
<td>Pitch</td>
<td>( P_1 )</td>
<td></td>
<td>4 ± 0.1</td>
</tr>
<tr>
<td><strong>Distance Between Centerlines</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cavity to Perforation (length)</td>
<td>( P_2 )</td>
<td></td>
<td>2 ± 0.1</td>
</tr>
<tr>
<td>Cavity to Perforation (width)</td>
<td>( F )</td>
<td></td>
<td>3.5 ± 0.1</td>
</tr>
<tr>
<td><strong>Cover Tape</strong></td>
<td>Width</td>
<td>( C )</td>
<td>5.4 ± 0.1</td>
</tr>
<tr>
<td><strong>Carrier Tape</strong></td>
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<td>( W )</td>
<td>8 ± 0.3</td>
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## SOT-89

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<th>Symbol</th>
<th>Size (mm)</th>
</tr>
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<td></td>
</tr>
<tr>
<td>Length</td>
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<td>Width</td>
<td>( B_0 )</td>
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<td>Depth</td>
<td>( K_0 )</td>
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<td>1.9 ± 0.1</td>
</tr>
<tr>
<td>Pitch</td>
<td>( P_1 )</td>
<td></td>
<td>8 ± 0.1</td>
</tr>
<tr>
<td><strong>Distance Between Centerlines</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cavity to Perforation (length)</td>
<td>( P_2 )</td>
<td></td>
<td>2 ± 0.1</td>
</tr>
<tr>
<td>Cavity to Perforation (width)</td>
<td>( F )</td>
<td></td>
<td>5.5 ± 0.5</td>
</tr>
<tr>
<td><strong>Cover Tape</strong></td>
<td>Width</td>
<td>( C )</td>
<td>9.3 ± 0.1</td>
</tr>
<tr>
<td><strong>Carrier Tape</strong></td>
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<td>( W )</td>
<td>12 ± 0.2</td>
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## SOT-143

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<th>Symbol</th>
<th>Size (mm)</th>
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<td></td>
<td></td>
</tr>
<tr>
<td>Length</td>
<td>( A_0 )</td>
<td></td>
<td>3.1 ± 0.1</td>
</tr>
<tr>
<td>Width</td>
<td>( B_0 )</td>
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<td>2.69 ± 0.1</td>
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<td>Depth</td>
<td>( K_0 )</td>
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<td>1.3 ± 0.1</td>
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<tr>
<td>Pitch</td>
<td>( P_1 )</td>
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<td>4 ± 0.1</td>
</tr>
<tr>
<td><strong>Distance Between Centerlines</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cavity to Perforation (length)</td>
<td>( P_2 )</td>
<td></td>
<td>2 ± 0.1</td>
</tr>
<tr>
<td>Cavity to Perforation (width)</td>
<td>( F )</td>
<td></td>
<td>3.5 ± 0.1</td>
</tr>
<tr>
<td><strong>Cover Tape</strong></td>
<td>Width</td>
<td>( C )</td>
<td>5.4 ± 0.1</td>
</tr>
<tr>
<td><strong>Carrier Tape</strong></td>
<td>Width</td>
<td>( W )</td>
<td>8 ± 0.3</td>
</tr>
</tbody>
</table>
## Tape and Reel Packaging for Surface Mount Components

### SOW-16 (SOIC-16 Wide Body)

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<th>Description</th>
<th>Symbol</th>
<th>Size (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cavity</strong></td>
<td>Length</td>
<td>A₀</td>
<td>10.9 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Width</td>
<td>B₀</td>
<td>10.7 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Depth</td>
<td>K₀</td>
<td>3 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>P₁</td>
<td>12 ± 0.1</td>
</tr>
<tr>
<td><strong>Distance Between Centerlines</strong></td>
<td>Cavity to Perforation (length)</td>
<td>P₂</td>
<td>2 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Cavity to Perforation (width)</td>
<td>F</td>
<td>7.5 ± 0.1</td>
</tr>
<tr>
<td><strong>Cover Tape</strong></td>
<td>Width</td>
<td>C</td>
<td>13.3 ± 0.1</td>
</tr>
<tr>
<td><strong>Carrier Tape</strong></td>
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<td>16 ± 0.3</td>
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### SOW-24 (SOIC-24 Wide Body)

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<th>Symbol</th>
<th>Size (mm)</th>
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</thead>
<tbody>
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<td>Length</td>
<td>A₀</td>
<td>10.7 ± 0.2</td>
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<tr>
<td></td>
<td>Width</td>
<td>B₀</td>
<td>15.8 ± 0.2</td>
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<tr>
<td></td>
<td>Depth</td>
<td>K₀</td>
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</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>P₁</td>
<td>12 ± 0.1</td>
</tr>
<tr>
<td><strong>Distance Between Centerlines</strong></td>
<td>Cavity to Perforation (length)</td>
<td>P₂</td>
<td>2 ± 0.1</td>
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<tr>
<td></td>
<td>Cavity to Perforation (width)</td>
<td>F</td>
<td>11.5 ± 0.1</td>
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## Tape and Reel Packaging for Surface Mount Components

### SSOP-8

<table>
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<tr>
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<th>Symbol</th>
<th>Size (mm)</th>
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<tbody>
<tr>
<td>Cavity</td>
<td>Length</td>
<td>A₀</td>
<td>3.4 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Width</td>
<td>B₀</td>
<td>8.3 ± 0.1</td>
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<td></td>
<td>Depth</td>
<td>K₀</td>
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<td>Pitch</td>
<td>P₁</td>
<td>8</td>
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<tr>
<td>Distance Between Centerlines</td>
<td>Cavity to Perforation (length)</td>
<td>P₂</td>
<td>2 ± 0.1</td>
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<tr>
<td></td>
<td>Cavity to Perforation (width)</td>
<td>F</td>
<td>7.5 ± 0.1</td>
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<tr>
<td>Cover Tape</td>
<td>Width</td>
<td>C</td>
<td>13.3 ± 0.1</td>
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<tr>
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### SSOP-20

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<td>8.2 ± 0.1</td>
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<tr>
<td></td>
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<td>Depth</td>
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<td>Pitch</td>
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<tr>
<td>Distance Between Centerlines</td>
<td>Cavity to Perforation (length)</td>
<td>P₂</td>
<td>2 ± 0.1</td>
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<tr>
<td></td>
<td>Cavity to Perforation (width)</td>
<td>F</td>
<td>7.5 ± 0.1</td>
</tr>
<tr>
<td>Cover Tape</td>
<td>Width</td>
<td>C</td>
<td>13.3 ± 0.1</td>
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<tr>
<td>Carrier Tape</td>
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### TSSOP-16, TSSOP-16EP

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<td>Width</td>
<td>B₀</td>
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<tr>
<td></td>
<td>Depth</td>
<td>K₀</td>
<td>1.6 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Pitch</td>
<td>P₁</td>
<td>8 ± 0.1</td>
</tr>
<tr>
<td>Distance Between Centerlines</td>
<td>Cavity to Perforation (length)</td>
<td>P₂</td>
<td>2 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>Cavity to Perforation (width)</td>
<td>F</td>
<td>7.5 ± 0.1</td>
</tr>
<tr>
<td>Cover Tape</td>
<td>Width</td>
<td>C</td>
<td>13.3 ± 0.1</td>
</tr>
<tr>
<td>Carrier Tape</td>
<td>Width</td>
<td>W</td>
<td>16 ± 0.3</td>
</tr>
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### 4.0 Component Orientation for Tape and Reel

1 mm X1DFN-6LD

2 mm PDFN-8LD, 2 mm STDFN-8LD, 2 mm STQFN-12LD

1.2 x 1.5 mm TDFN-6LD (0.5 mm Lead Pitch)

3 mm PQFN-12LD, 3 mm PQFN-16LD

1.5 x 1.2 mm TDFN-6LD (0.4 mm Lead Pitch)

3 mm PQFN-12LD (1.1 mm Height)

2 mm PDFN-8LD, 2 mm STDFN-8LD, 2 mm STQFN-12LD

2 x 2.5 mm STQFN-14LD

3 mm PQFN-12LD, 3 mm PQFN-16LD

3 mm PQFN-12LD (1.1 mm Height)

3 x 6 mm PDFN-14LD

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### 4 mm PQFN-16LD, 4 mm PQFN-20LD, 4 mm PQFN-24LD

![Diagram of 4 mm PQFN-16LD, 4 mm PQFN-20LD, 4 mm PQFN-24LD packaging](image1)

### 5 mm PQFN-20LD, 5 mm PQFN-28LD, 5 mm PQFN-32LD

![Diagram of 5 mm PQFN-20LD, 5 mm PQFN-28LD, 5 mm PQFN-32LD packaging](image2)

### 4 x 6 mm PQFN-32LD

![Diagram of 4 x 6 mm PQFN-32LD packaging](image3)

### 5 x 6 mm PQFN-32LD

![Diagram of 5 x 6 mm PQFN-32LD packaging](image4)

### 4 x 7 mm PQFN-36LD

![Diagram of 4 x 7 mm PQFN-36LD packaging](image5)

### 5 x 7 mm PQFN-40LD

![Diagram of 5 x 7 mm PQFN-40LD packaging](image6)
Tape and Reel Packaging for Surface Mount Components

6 x 5 mm PDFN-8LD

6 x 6 mm PQFN-20LD

6 x 7 mm PQFN-37LD

7 mm LGA-16LD

User Direction of Feed

8 mm BGA

15 mm BGA

For further information and support please visit:
https://www.macom.com/support
Tape and Reel Packaging for Surface Mount Components

BD-1, Bumped Die, 0.705 mm Sq. (bumps facing down)

User Direction of Feed

BD-2, Bumped Die, 0.925 x 1.095 mm (bumps facing down)

User Direction of Feed

BD-3, Bumped Die, 0.485 x 0.605 mm (bumps facing down)

User Direction of Feed

CR-5

(ORION CARRIER TAPE R2412-AM108)

User Direction of Feed

LCC1                                                            RT3

User Direction of Feed

LCC1                                                            TR3

User Direction of Feed
Tape and Reel Packaging for Surface Mount Components

- LSM1, LSM6
  - RT3
  - User Direction of Feed

- LSM2
  - TR3
  - User Direction of Feed

- LSM3
  - TR3
  - User Direction of Feed

Visit www.macom.com for additional data sheets and product information.
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Tape and Reel Packaging for Surface Mount Components

**MSOP-8, -10**

(ADVANTEK CARRIER TAPE MINS08-AC102.P2R)

5.3(Mo), 3.4(Bs), 1.4(Ko), 8(P1), 12(W)

**QSOP-24, SOIC-14**

(ADVANTEK CARRIER TAPE SOIC14-CC92.OP2)

6.5(Mo), 9(Bs), 2.1(Ko), 8(P1), 16(W)

**ODS-1294, 1295 & 1306**

USER DIRECTION OF FEED

**QSOP-28, SOIC-16**

(ANDANTEK CARRIER TAPE SOIC-AC90.0P2)

6.5(Mo), 10.3(Bs), 2.1(Ko), 8(P1), 16(W)

**QSOP-16, QSOP-16EP, TSSOP-16**

(ADVANTEK CARRIER TAPE TSS016-AC95.OP2)

6.8(Mo), 5.4(Bs), 1.6(Ko), 1.3(K1), 8(P1), 16(W)
Tape and Reel Packaging for Surface Mount Components

R-1, R-4, R-15

SM-2, SM-4, SM-44, SM-68, SM-74, SM-108

SC70-3LD, SC70-6LD

SM-3, SM-26

SC-79, SOD-323

SM-7-1, SM-28, SM-55

SM-1, SM-23, SM-41, SM-69, SM-87, SM-89, SM-134

SM-20

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Tape and Reel Packaging for Surface Mount Components

SM-22

User Direction of Feed

SM-106

User Direction of Feed

SM-24

User Direction of Feed

SM-46

User Direction of Feed

SM-52

User Direction of Feed

SM-106

User Direction of Feed

SM-22

User Direction of Feed

SM-24

User Direction of Feed

SM-46

User Direction of Feed

SM-52

User Direction of Feed

SOIC-8

User Direction of Feed

SOT-23

User Direction of Feed

SOT-25, SOT-26

User Direction of Feed
Tape and Reel Packaging for Surface Mount Components

SOT-89

Direction of Feed

SSOP-8

(ADVANTEK CARRIER TAPE SSOP08-CC78.0P2)

3.4(Ao), 8.3(Bb), 2.54(Ka), 1.91(K1), 8(P1), 16(W)

SOT-143

(ADVANTEK CARRIER TAPE SOT-143-AV1000.P1)

3.2(Ao), 2.7(Bb), 1.35(Ko), 4(P1), 8(W)

SSOP-20

(ADVANTEK CARRIER TAPE SSOP20-CC79.2P2)

8.2(Ao), 7.5(Bb), 2.5(Ko), 2.7(K1), 12(P1), 16(W)

SOW-16 (SOIC-16 Wide Body)

Forward

User Direction of Feed

SSOP-24

Forward

User Direction of Feed

SOW-24 (SOIC-24 Wide Body)

Forward

User Direction of Feed

SSOP-28

Forward

User Direction of Feed

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## 5.0 Reel Information

<table>
<thead>
<tr>
<th>Package Type</th>
<th>Max. Devices per Reel</th>
<th>Reel Diameter (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mm X1DFN-6LD, 2 mm STDFN-8LD, 2 mm STQFN-12LD, 2 x 2.5 mm STQFN-14LD</td>
<td>3000</td>
<td>7</td>
</tr>
<tr>
<td>1.2 x 1.5 mm TDFN-6LD (0.5 mm pitch), 1.5 x 1.2 mm TDFN-6LD (0.4 mm pitch)</td>
<td>3000</td>
<td>7</td>
</tr>
<tr>
<td>2 mm PDFN-8LD</td>
<td>3000</td>
<td>13</td>
</tr>
<tr>
<td>3 mm PQFN-12LD, 3 mm PQFN-12LD (1.1 mm height), 3 mm PQFN-16LD, 3 x 6 mm PDFN-14LD, 4 mm PQFN-16LD, 4 mm PQFN-20LD, 4 mm PQFN-24LD</td>
<td>1000</td>
<td>7</td>
</tr>
<tr>
<td>3 mm PQFN-12LD, 3 mm PQFN-12LD (1.1 mm height), 3 mm PQFN-16LD, 3 x 6 mm PDFN-14LD</td>
<td>3000</td>
<td>13</td>
</tr>
<tr>
<td>4 x 6 mm PQFN-32LD, 4 x 7 mm PQFN-36LD</td>
<td>1000</td>
<td>7</td>
</tr>
<tr>
<td>5 mm PQFN-20LD, 5 mm PQFN-28LD, 5 mm PQFN-32LD</td>
<td>1000</td>
<td>7</td>
</tr>
<tr>
<td>5 x 6 mm PQFN-36LD, 5 x 7 mm PQFN-40LD</td>
<td>1000</td>
<td>7</td>
</tr>
<tr>
<td>6 x 5 mm PDFN-8LD, 6 x 7 mm PQFN-37LD</td>
<td>1000</td>
<td>13</td>
</tr>
<tr>
<td>6 x 6 mm PQFN-20LD</td>
<td>3000</td>
<td>13</td>
</tr>
<tr>
<td>7 mm LGA-16LD</td>
<td>500</td>
<td>7</td>
</tr>
<tr>
<td>8 mm BGA, 15 mm BGA</td>
<td>1000</td>
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</tr>
<tr>
<td>BD-1, BD-2, BD-3</td>
<td>3000</td>
<td>7</td>
</tr>
<tr>
<td>CR-5</td>
<td>2500</td>
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<tr>
<td>LCC1, LSM1, LSM2, LSM3</td>
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<td>13</td>
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<tr>
<td>MSOP8, MSOP-8EP, MSOP-10</td>
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<tr>
<td>ODS-120</td>
<td>2000</td>
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<tr>
<td>ODS-186</td>
<td>750</td>
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<td>ODS-1056</td>
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<tr>
<td>ODS-1072</td>
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<tr>
<td>ODS-1079</td>
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<tr>
<td>ODS-1091</td>
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<tr>
<td>ODS-1269, 1294, 1295, 1305, 1306, 1402, 1411, 1500</td>
<td>3000</td>
<td>7</td>
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</table>
### 5.0 Reel Information (continued)^3,4^ 

<table>
<thead>
<tr>
<th>Package Type</th>
<th>Max. Devices per Reel</th>
<th>Reel Diameter (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>QSOP-16, QSOP-16EP, QSOP-24, QSOP-28</td>
<td>1000</td>
<td>7</td>
</tr>
<tr>
<td>R-1, R-4, R-5, R-15</td>
<td>500</td>
<td>13</td>
</tr>
<tr>
<td>SC70-3LD, SC70-6LD, SC-79, SOT-23, SOT-25, SOT-26, SOT-89, SOT-143, SOD-323</td>
<td>3000</td>
<td>7</td>
</tr>
<tr>
<td>SM-1, SM-55, SM-69</td>
<td>900</td>
<td>13</td>
</tr>
<tr>
<td>SM-2, SM-4, SM-7-1, SM-20, SM-23, SM-24, SM-41, SM-44</td>
<td>500</td>
<td>13</td>
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<tr>
<td>SM-3, SM-26, SM-28, SM-46, LSM6</td>
<td>300</td>
<td>13</td>
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<tr>
<td>SM-22</td>
<td>2000</td>
<td>13</td>
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<tr>
<td>SM-52</td>
<td>2500</td>
<td>13</td>
</tr>
<tr>
<td>SM-87, SM-89, SM-134</td>
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<tr>
<td>SOIC-8 (SO-8)</td>
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<td></td>
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<td></td>
<td>2000 (E-Series)</td>
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<tr>
<td>SOIC 14 (SO-14), SOIC 16 (SO-16)</td>
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<tr>
<td></td>
<td>3000</td>
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<tr>
<td>SOW-16 (SOIC-16 Wide Body), SOW-24 (SOIC-24 Wide Body)</td>
<td>1000</td>
<td>13</td>
</tr>
<tr>
<td>SSOP-8</td>
<td>900</td>
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<tr>
<td></td>
<td>3000</td>
<td>13</td>
</tr>
<tr>
<td>SSOP-20, SSOP-24, SSOP-28</td>
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</tr>
<tr>
<td>TSSOP-16, TSSOP-16EP</td>
<td>1000</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>2500</td>
<td>13</td>
</tr>
</tbody>
</table>

3. See individual data sheets for part number ordering information.
4. Most device in tape and reel must be ordered in multiples of 100 pieces, with a minimum order quantity of either 200 or 500 pieces per part number. Consult factory for individual package types.
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