New Type SMTPFLSM™ surface mount spring-loaded captive panel screws provide ease of installation and high precision positioning without loose hardware. They mount on P.C. boards in the same manner and at the same time as other surface mount components prior to the automated reflow solder process. This alleviates concerns about potential damage to P.C. boards due to improper secondary installation operations. These fasteners are provided on tape and reel compatible with existing SMT automated installation equipment.

### Features and Benefits
- All metal captive screw assembly installs in one piece utilizing pick and place method
- Combination drive, Torx®/slot
- Solderable finish
- Screw length code “0” retracts flush in up position
- Ease of installation

All dimensions are in inches.

<table>
<thead>
<tr>
<th>Unified Threads</th>
<th>Unified Thread Code</th>
<th>Screw Length Code</th>
<th>A (Shank) Max.</th>
<th>Min. Sheet Thickness</th>
<th>C Max.</th>
<th>E1 ±0.10</th>
<th>E2 Nom</th>
<th>G1 ±0.25</th>
<th>G2 ±0.25</th>
<th>H ±0.10</th>
<th>T1 Nom.</th>
<th>T2 Nom.</th>
<th>ØD Hole Size in Sheet(±0.003 - .000)</th>
<th>ØD Min. Solder Pad</th>
<th>Driver Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>.112-40 (4-40)</td>
<td>SMTPFLSM 440</td>
<td>0</td>
<td>.63</td>
<td>.063</td>
<td>215</td>
<td>.280</td>
<td>.300</td>
<td>40</td>
<td>210</td>
<td>220</td>
<td>.55</td>
<td>.42</td>
<td>.252</td>
<td>.400</td>
<td>T15</td>
</tr>
<tr>
<td>.138-32 (6-32)</td>
<td>SMTPFLSM 632</td>
<td>0</td>
<td>.63</td>
<td>.063</td>
<td>247</td>
<td>.310</td>
<td>.320</td>
<td>40</td>
<td>240</td>
<td>220</td>
<td>.55</td>
<td>.42</td>
<td>.252</td>
<td>.400</td>
<td>T15</td>
</tr>
</tbody>
</table>

**Thread Size: External, ASME B1.1.2, 2A / ASME B1.13M, 6g**

- **Material:** Retainer: Carbon Steel
- **Screw:** Hardened Carbon Steel
- **Spring:** 300 Series Stainless Steel

**Standard Finish:** Retainer: ET - Electro-plated Tin ASTM B 545, Class A with clear Preservative Coating, Annealed
- **Screw:** ZI - Zinc plate, 5µm, colorless

For use in: P.C. Board

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(1) As with all Class 2A/6g external threads with an additive finish, the maximum major and pitch, may equal basic sizes and be gaged to Class 3A/4h, per ANSI B1.12, Section 8, Table 3A and ANSI B1.13M, Section 8, paragraph 8.2.
## PERFORMANCE DATA (1)

<table>
<thead>
<tr>
<th>Unified Type and Thread Size</th>
<th>Min. Tensile Strength (lbs.)</th>
<th>Rec. Tightening Torque (in. lbs.) (2)</th>
<th>Pull-off (lbs.) (3)</th>
<th>Test Sheet Material .060” P.C. Board</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMTPF-440</td>
<td>555</td>
<td>4.4</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>SMTPF-632</td>
<td>724</td>
<td>7.0</td>
<td>105</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Metric Type and Thread Size</th>
<th>Min. Tensile Strength (N)</th>
<th>Rec. Tightening Torque (N•m) (2)</th>
<th>Pull-off (N) (3)</th>
<th>Test Sheet Material 1.5 mm P.C. Board</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMTPF-LSM-M3</td>
<td>2900</td>
<td>0.61</td>
<td>445</td>
<td></td>
</tr>
<tr>
<td>SMTPF-LSM-M3.5</td>
<td>3269</td>
<td>0.8</td>
<td>465</td>
<td></td>
</tr>
</tbody>
</table>

- **Oven**: Quad ZCR convection oven with 4 zones
- **Vias**: None
- **High Temp**: 245°C / 473°F
- **Board Finish**: 62% Sn, 38% Pb
- **Spokes**: 2 Spoke Pattern
- **Paste (lead-free)**: Alpha CVP-390 Sn96.5/Ag3.0Cu (SAC305)
- **Screen Printer**: Ragin Manual Printer
- **Stencil**: .005” / 0.13 mm thick

### TESTING CONDITIONS

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### NUMBER OF PARTS PER REEL

<table>
<thead>
<tr>
<th>Thread Size</th>
<th>Screw Length Code</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td>440</td>
<td>200</td>
</tr>
<tr>
<td>632</td>
<td>150</td>
</tr>
<tr>
<td>M3</td>
<td>200</td>
</tr>
<tr>
<td>M3.5</td>
<td>150</td>
</tr>
</tbody>
</table>

Packaged on 330 mm recyclable reels. Tape width is 24 mm. Supplied with polyimide patch for vacuum pick up. Reels conform to EIA-481.

(1) With lead-free paste. Average values of 30 test points. The data presented here is for general comparison purposes only. Actual performance is dependent upon application variables. We will be happy to provide samples for you to install. If required, we can also test your installed hardware and provide you with the performance data specific to your application.

(2) Torque values shown will produce a preload of 70% minimum tensile with a nut factor “k” equal to .1.

(3) Failure occurred at the solder joint. Screw retention strength is greater than the retainer.

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ReelFast® Surface Mount Captive Panel Screws

INSTALLATION

Polyimide patch applied here for vacuum pickup

Solder paste applied to pad on P.C. Board

Solder fastener in place using standard surface mount techniques

Installs in retracted/unfastened position

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PennEngineering

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Technical support e-mail: techsupport@pemnet.com