Solderball Pin™ Technology

Solderball Pin™ Technology is engineered and widely used on POL (point of load) DC/DC Power applications when a PCB mezzanine design is necessary due to real estate limitations, offering additional thermal dissipation capability via the robust mechanical connection. The Solderball Pin™ functionally replace the conventional through-hole pins, traditionally used for interconnecting parallel PCBs, and provide a SMT-compatible solution for mounting the module to the final assembly and the solderball. The internal pin provides a rigid, high conductivity foundation to the module PCB, while the solderball allows a physical adjustment as each solder joint is formed.

Compact configuration and flexibility as a discrete SMT component facilitates adoption into a broad scope of applications, including electronic lighting controls, remote telemetry monitoring, ethernet, fibre channel, storage area networks, automotive, and many other daughter-to-motherboard module-based subassemblies.

The features and key characteristics are summarized as follows:

Solder sphere: Provides the attachment and interconnection with the SMT host PCB and compensates for co-planarity variances.

Insulator-seal: Provides a positive location of solder sphere during reflow. It is also the element for vacuum pick-and-place equipment.

Copper Alloy pin: Provides a robust plated-through hole attachment with the PCBSA and determines the stack up height between PCBSA and host PCB.

Solderball Pin™ Main Features

- **Solder Sphere: SnAgCu or SnPb**
  - SMT attachment to customer’s Host Printed Circuit Board

- **Pick & Place Disk for Vacuum Pickup**
  - Maintains solderball position through reflow

- **High Conductivity Copper Alloy Pin**
  - Provides robust attachment onto PCB sub assy.

**Coplanarity Compensation Zone**

*Lead Free Available*
**Solderball Pin™ Selection Guide**

<table>
<thead>
<tr>
<th>Part Number Description</th>
<th>Qty Per Reel</th>
<th>Tail Configuration</th>
<th>Pin Size Dia Inches/mm</th>
<th>Stack Height Inches/mm</th>
<th>Tail length Inches/mm</th>
<th>Solderball Diameter</th>
<th>RoHs Compliant</th>
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<tbody>
<tr>
<td>Midi Solderball 0.033&quot; [0.84] Diameter Tapered Pin. 0.071&quot; [1.8] Diameter Ball</td>
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<td>9-B13341AAATT 1,600 Tapered</td>
<td>0.033&quot; [0.84]</td>
<td>0.100&quot; [2.54]</td>
<td>0.074&quot; [1.89]</td>
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</tbody>
</table>

* Stocked by Distributors.  
Consult Factory for other sizes.
Engineered for Form, Fit & Function

**Midi Solderball Pin™**

- **Solder Sphere**
  - dia: 0.071 ±0.004", for 0.110" SMT Pad,
  - compensation: 0.020" (0.508mm),
  - stack up height up to: 0.195" (4.9mm)

- **Insulator Disk**
  - 94V-0, dia: 0.135", thk: 0.030"
  - Pin to Pin spacing: 0.150" (3.81mm) ctrs.
  - Blue: Pb free, Black: Tin/Lead

- **Copper Alloy Pin**
  - min 0.0001-.0002" Ni
  - and 0.0003-.0005" Sn, plated for 0.041" and 0.072" PCB hole sizes

**Mini Solderball Pin™**

- **Solder Sphere**
  - dia: 0.041 ±0.004", for 0.075" SMT Pad,
  - compensation: 0.014" (.35mm),
  - stack up height up to: 0.120" (3.05mm)

- **Insulator Disk**
  - 94V-0, dia: 0.090", thk: 0.020"
  - Pin-pin spacing: 0.100" (2.54mm) centers

- **Copper Alloy Pin**
  - plated for 0.046" PCB hole size or 0.085Ø pad size SMT (2.15mm)

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**Mechanical Specifications:**

- **Pin Terminal:** High Conductivity Copper Alloy
- **Solder Sphere:** RoHs Compliant SAC Alloy or Tin/Lead
- **Packaging:** STD 16mm Tape & Reel per Spec EIA-481
- **Pick & Place:** Pin Trough Paste Via Standard SMT Equipment
- **Configurations:** email: solderballpin@autosplice.com

*Consult Factory for Specific Product Performance and Engineering Characteristics.*
Solderball Pin™ Design Guide

Solderball Pin™ Technology employs a highly conductive copper pin that incorporates a solder ball on the end that interfaces to the host PCB, providing additional solder to compensate for coplanarity variation on SMT board to board interconnection.

Features and Benefits:
- Automatic coplanarity compensation*: 0.020"
- High current carrying capability*: 20 amp DC
- Converts through hole device into SMT
- Conducts heat from device to Host PCB

Application View

SMT Solution to Coplanarity Interconnection
for Power Modules and PCB-based Subassemblies

SMT to SMT

SMT to Through Hole

SMT Board to SMT Coplanarity Variation

SMT Board to Board Coplanarity Variation
Custom Solutions To Co-Planarity Issues

Customer Specific Configuration
Solderball Pin™ Technology

Solderball Pin™ Technology is engineered and widely used on POL (point of load) DC/DC Power applications when a PCB mezzanine design is necessary due to real estate limitations, offering additional thermal dissipation capability via the robust mechanical connection.

Compact configuration and flexibility as a discrete SMT component facilitates adoption into a broad scope of applications, including electronic lighting controls, remote telemetry monitoring, ethernet, fibre channel, storage area networks, automotive, and many other daughter-to-motherboard module-based subassemblies.

To obtain a sample kit contact us at: solderballpin@autosplice.com