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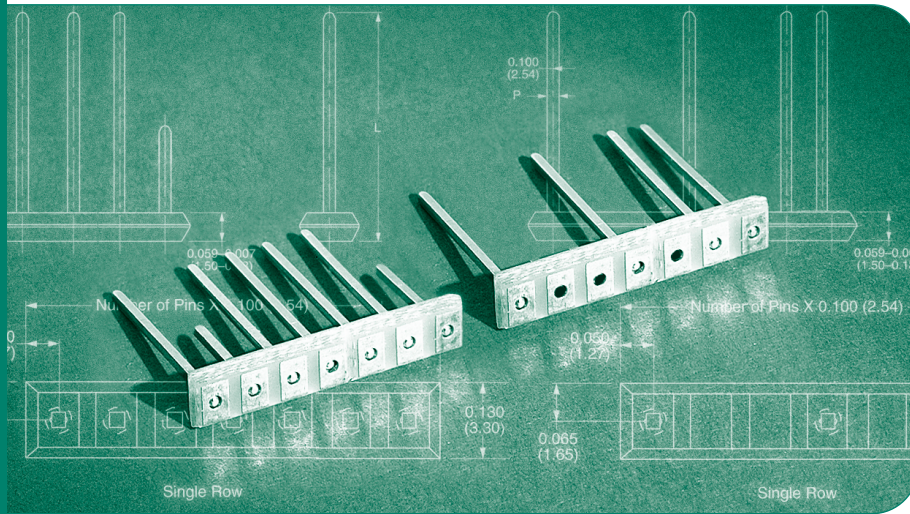
Zierick SMT Headers

Custom engineered with your process in mind

Need custom pin headers?

Zierick headers are available with pins missing at positions you specify. We can also provide pins of differing lengths on a single header. Now that's flexibility.

correct an assembly mistake during reflow. You're familiar with the benefits of using capillary action: stronger solder joints, assured co-planarity, and greater locational accuracy on the solder pad.



The header assembly is designed to allow it to move with the PCB it's placed onto, significantly reducing header warpage. This results in proper individual pin soldering position and high reliability connections. The result, of course, is not only less rework,

but also more reliable connections and higher quality assemblies. It gets better. These headers promote capillary action of the reflowing solder to correctly position even misplaced or off center headers on the PCB. There is no other header we know of that can

correct an assembly mistake during reflow. You're familiar with the benefits of using capillary action: stronger solder joints, assured co-planarity, and greater locational accuracy on the solder pad.

The pin header is one more innovative product in the Zierick SMT connection line.

Challenge Us!

What's your biggest design challenge? Too many parts out of tolerance? Bottleneck in production? Too much rework? Zierick's specialty is designing connectors that answer your product requirements, while accommodating your production needs. Many of our connector designs have become industry standards, and our assembly equipment offers high performance for relatively small capital investment. What can we do for you? Challenge us and let the next innovation be yours.

Please call **800 882 8020** or e-mail sales@zierickhq.com with your technical question. Our R&D Department will provide the answer. Then look for success stories in future issues of InterConnections. The next one could be yours.

ZIERICK

Manufacturing Corporation
www.zierick.com
800•882•8020



Reach for Your Mouse

Zierick Has Built a Better Website

Zierick has entirely redesigned and expanded www.zierick.com, making it easier to navigate and richer in content. Compare our website with any other site for convenience, content and design. "Drop down" menus along with "jump" menus let you go from any page to any other page without having to scroll in search of a link. Each page contains a powerful search engine in the same position at

the top right so you don't have to return to the home or previous page to enter a part number or component type. Reference pages from our on-line catalogs are now available in PDF format so you can easily print files.

We've also posted Catalog 38, *Surface Mount & Through Hole Interconnection & Assembly Solutions* and Catalog 35, *Interconnection Hardware* along with datasheets, brochures, and other useful information. The complete product offering is fully described including drawings, specs, and ordering information.

Visit us at www.zierick.com today and tell us what you think.



JST Connects with Zierick for high quality

Japanese manufacturer JST, maker of cable assemblies, contacts, and other interconnection parts, is using (and crediting) Zierick components on its sample boards. Quality sells quality, and JST has found a willing partner in Zierick.

Connect with us at these shows

APEX, Stand # 5049

San Diego, CA, January 20 - 24, 2002

web link: www.goapex.org

SMT/HYBRID/PACKAGING, Booth 1-123

MESAGO Messe & Kongress GmbH

Nuremberg Germany, June 18 - 20, 2002

web link: www.mesago.de

Assembly Tech Expo

Donald E. Stephens Convention Center, Booth #54050

Rosemont, IL, September 24-26, 2002

Visit www.zierick.com for a guest pass to the show

web link: www.atexpo.com

Contact Us

ZIERICK

Manufacturing Corporation
131 Radio Circle
Mt. Kisco, New York 10549
(914) 666 2911
800 882 8020
Fax (914) 666 0216
Email: sales@zierickhq.com
www.zierick.com



Placement of Surface Mount Terminals

In response to the considerable interest generated by Zierick's "capillary-action" SMT terminals, we present here a description of one of the conclusive experiments performed during development of these SMT parts.

The intent of the experiment was to identify which variables had the most significant effect on

component placement location and solder joint reliability. Therefore, it was imperative to test a variety of PCB land sizes with aligned and offset stencil and with aligned and offset terminal placement. Both solder paste location and terminal location were measured before and after solder reflow.

The Experiment

A 3" x 3", 1/16" thick, FR-4 board with 1-ounce copper pads was used with a variety of pad sizes and pitches. Figure 1 shows the test board layout. The highlighted pad sizes were the test pads. Thirty boards were tested with 3,000 components placed. A manual screen printer with an 0.008" thick stainless steel stencil was used. Two resin-based, no-clean, solder creams were used for pitches as small as 0.025" and 0.015". Solder paste thickness before reflow ranged from 0.006" to 0.010".

A vacuum component placement system placed some components on center and some components offset on the pads. The offset pads had three combinations: 1) both component and solder paste were offset 0.015" in same direction so the component was lined up exactly with the paste but not the pad, 2) solder paste and component were offset 0.015" in both X and Y directions but in opposite directions relative to the pad so that total component/paste offset was 0.030", and 3) terminals lined up exactly with solder pad, but solder paste was offset 0.015" in both directions.

The terminals were reflowed using a convection conveyor oven. A temperature profile was taken by attaching a thermocouple near the solder joints. The PCB pads, stenciled solder paste, solder paste thickness, and pin location before and after reflow were measured with an optical

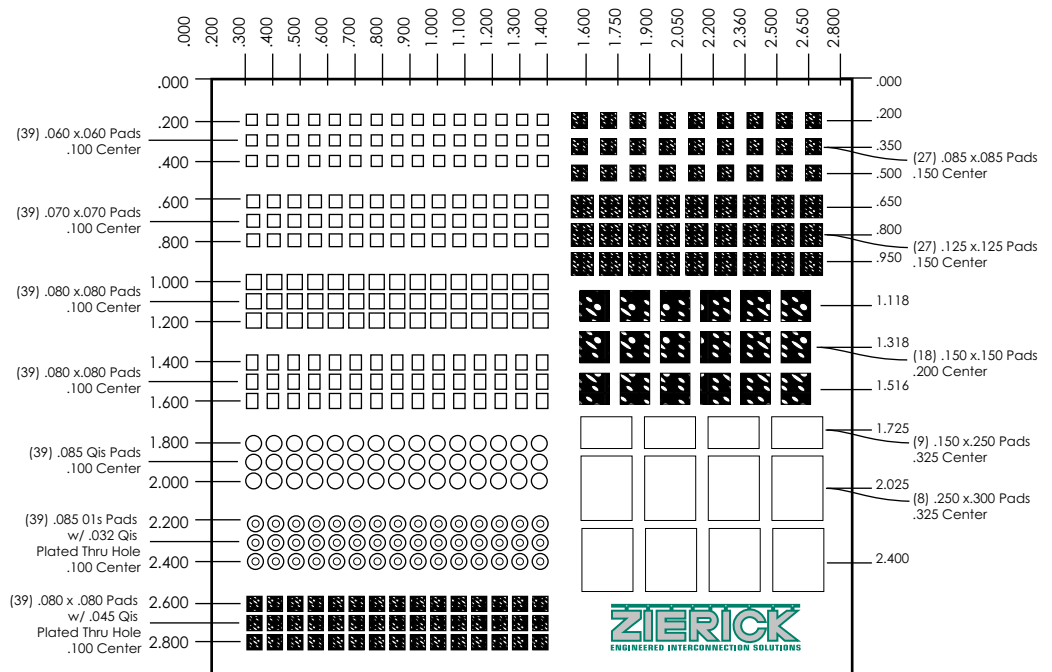


Figure 1

coordinate measuring system. Pin/solder joint strength was determined by pushing with a force parallel and also perpendicular to the pin. The quality of the fillet was visually inspected.

Data Analysis

After reflow, the pins with capillary action (with pad size close to the pin base size) stay exactly where they were placed before reflow. These pins also remained perfectly perpendicular to the PCB, unlike their non-capillary action counterparts, while solder

joint pull strength was above 30Lbs in all cases.

If you would like the technical data and analysis, contact us and ask for the paper *Surface Mount Posts, IDCs, Receptacles, with related Test and Design Considerations*.

Check your mail box to win an XBox!

The Zierick Challenge is coming soon—and, with it is your chance to win! You've seen Zierick solve customers' challenges for year, and now it's your turn. Meet the challenge by answering five exciting brain teasers—one with every mailing we send (Or you can visit www.zierick.com/challenge to enter.) Answer correctly and you could win one of these exciting prizes: the computer simulation game

Sim City 3000 Unlimited, a high-tech and practical **turbometer**, an **electronic tape measure**, a **Brunton Sherpa** environmental data gatherer, or a hand-held **global positioning system**.

The more teasers you answer (limit one entry per person/per puzzle), the greater your chances of winning the Grand Prize—one of three **Microsoft Xbox** game consoles.

So, visit www.zierick.com, and be looking for your chance to win. Amaze your friends, stump your colleagues, and accept the Zierick Challenge!



Limit one entry per person, per puzzle.

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