

# ZIERICK

ENGINEERED INTERCONNECTION SOLUTIONS

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## FEATURES & BENEFITS

- Most economical way to terminate wire to board;
- Smallest footprint;
- High current carrying capability  
- current rating of the termination is the same as the current rating of the terminated wire  
- terminal acts as a heat sink;
- No separate strain relief required;
- High resistance to wire flexing and axial and radial pull forces;
- Terminal lends itself to automated termination;
- Designed to be bulk fed with a special feeder - no surface mount taping required, making terminal more economical in high volume applications;
- Available in taped format.

## INSULATION PIERCING CRIMP FAMILY SURFACE MOUNT TERMINALS PART NUMBERS 1286, 1293 AND 1295



Zierick Manufacturing Corp. has developed a new family of SMT connectors. They are highly reliable and provide an economical way to connect a wire to a Surface Mount Printed Circuit Board. These innovations consist of a surface mounted insulation piercing crimp terminal and a special tool which crimps the wire into the terminal and locks it in position.

This method of wire connection to a PCB is more economical than all other methods currently being used, such as two-piece pin and receptacle types of connections, IDCs, or hand soldering. The terminals have a small footprint, similar in real estate to a hand soldered wire. They are highly reliable since the technique uses a well proven crimping technology with unique insulation piercing spikes. The spikes inside the part penetrate through the wire insulation to the core of the wire and pro-

vide a gas-tight connection during the crimping process. With this method, there is no need to strip the insulation from the wire and the termination can be made not only at the end of the wire, but at any place along the length of the wire. This makes the crimp terminal especially useful with in-line applications, when multiple terminations are required for one single wire such as a series of diodes used in block lettering display applications.

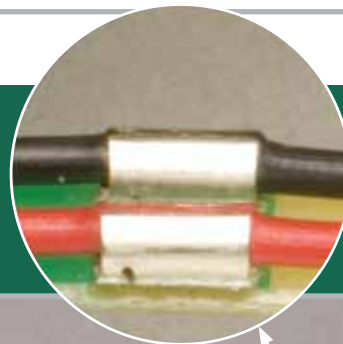
The other important component of this system is the wire terminating crimp tool. A semi-automatic version not only terminates the wire, but also reduces any work related to wire handling.

These are the smallest and the most economical terminals available for an SMT Wire to Board application, and utilize well proven and reliable technology.



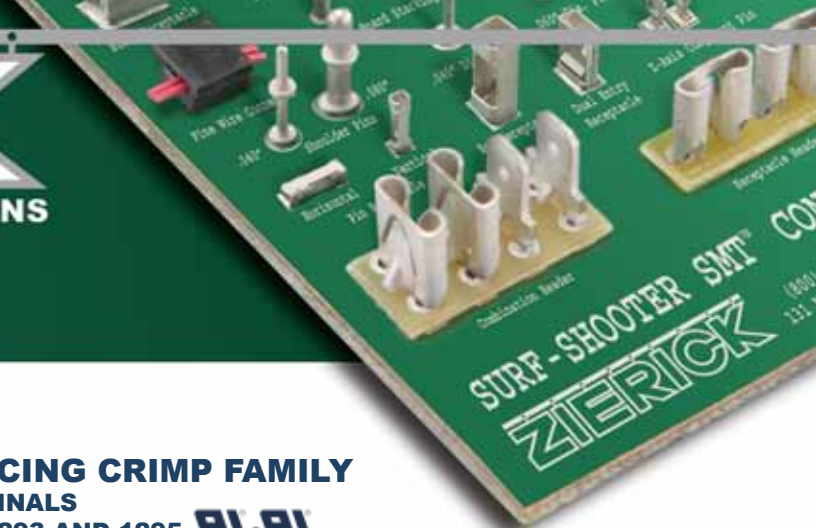
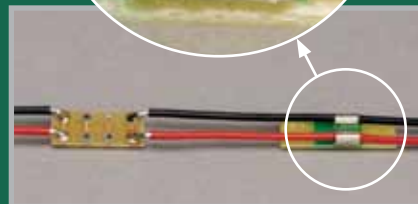
### Old Technology:

Tedious, time consuming, labor intensive, and environmentally unfriendly hand soldering



### New Technology:

Economical, clean and quick SMT Insulation Piercing Connector



**PN 1286 SPECIFICATIONS**

**Part Numbers**

Loose: 1286  
 Taped: 1286T  
 Small Reel: 1286T-SR

**Wire Sizes**

16 AWG (.077 in. OD)  
 18 AWG (.068, .078, .080 in. OD)  
 20 AWG (.068, .073, .082 in. OD)

**Material Thickness / Type**

0.016" (0.41mm) CDA 260 Brass

**Current Rating\***

Up to 13 Amps

**Crimping / Wire Termination Tools**

Mini Press for high volume applications  
 WTC-1286-1 for low volume and/or field terminations

**Standard Finish**

100% Tin over Copper

**Feeder Systems**

SMT Feeder for Loose Piece Terminals  
 Standard 12mm Tape Feeder

**U.S. Patent No. 7,591,666 B2 and other U.S. and international patents**

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**PN 1293 SPECIFICATIONS**

**Part Numbers**

Loose: 1293  
 Taped: 1293T  
 Small Reel: 1293T-SR

**Wire Sizes**

12 AWG (.125 in. OD)  
 14 AWG (.111, .130 in. OD)  
 16 AWG (.124 in. OD)

**Material Thickness / Type**

0.020" (0.51mm) Pre-Plated Brass

**Current Rating\***

Up to 16 Amps

**Crimping / Wire Termination Tools**

Mini Press for high volume applications  
 WTC-1293-1 for low volume and/or field terminations

**Standard Finish**

100% Tin over Copper

**Feeder Systems**

SMT Feeder for Loose Piece Terminals  
 Standard 16mm Tape Feeder

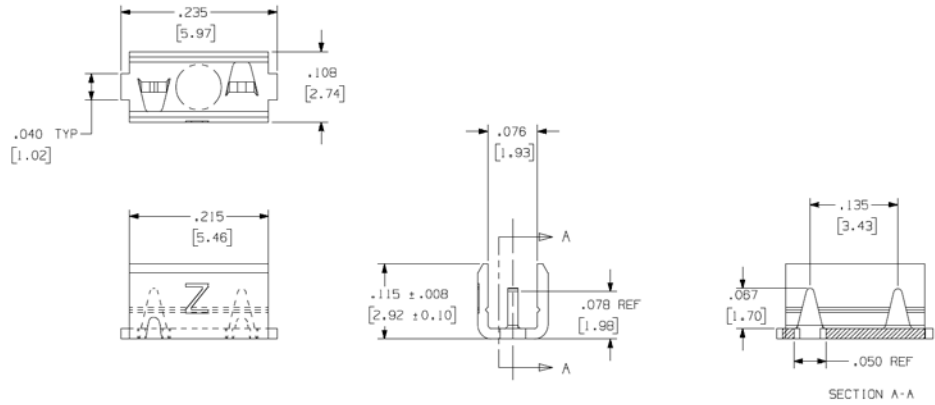
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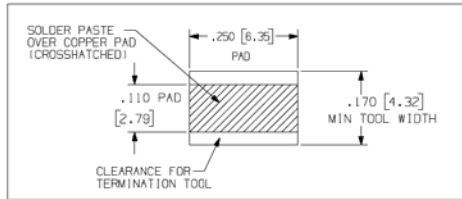
\*Ampacities are only offered as guidelines. Each part should be tested in the customer specific application.

**INSULATION PIERCING CRIMP FAMILY  
 SURFACE MOUNT TERMINALS  
 PART NUMBERS 1286 AND 1293**

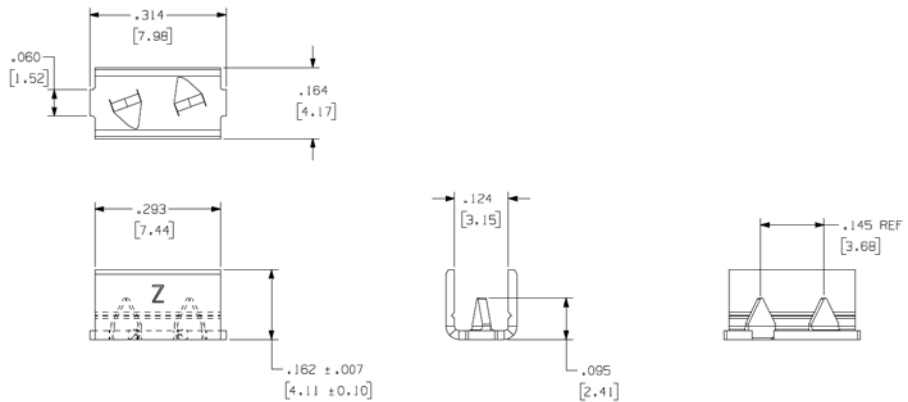
**APPLICATION DRAWING for PART NUMBERS 1286 and 1286T**



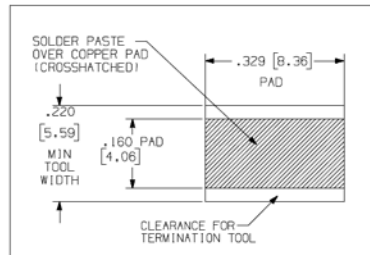
RECOMMENDED SOLDER PAD GEOMETRY



**APPLICATION DRAWING for PART NUMBERS 1293 and 1293T**

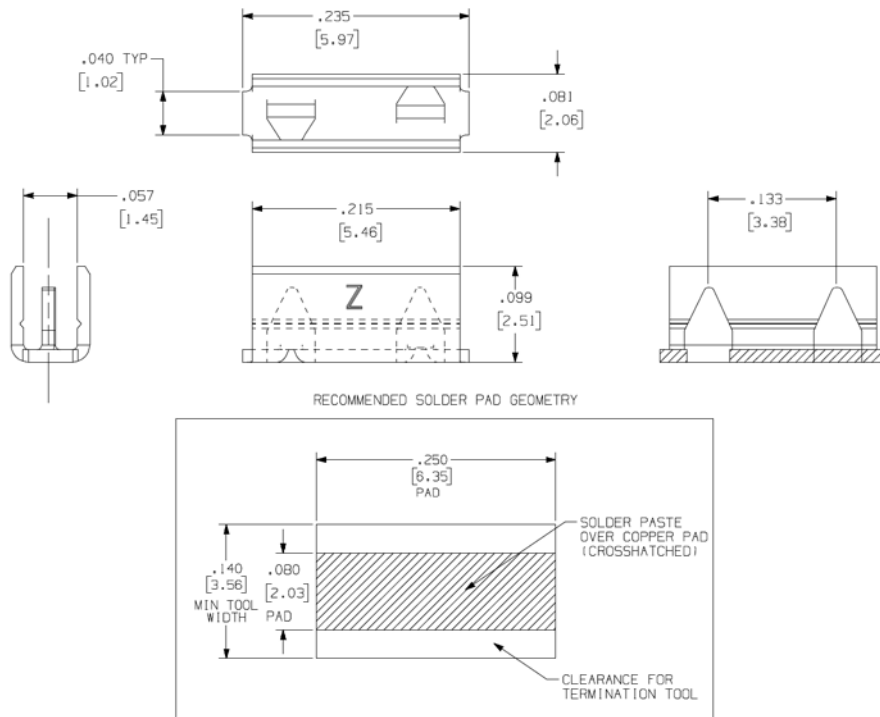


RECOMMENDED SOLDER PAD GEOMETRY




**INSULATION PIERCING CRIMP FAMILY**  
**SURFACE MOUNT TERMINALS**  
**PART NUMBERS 1295 AND 1295T**

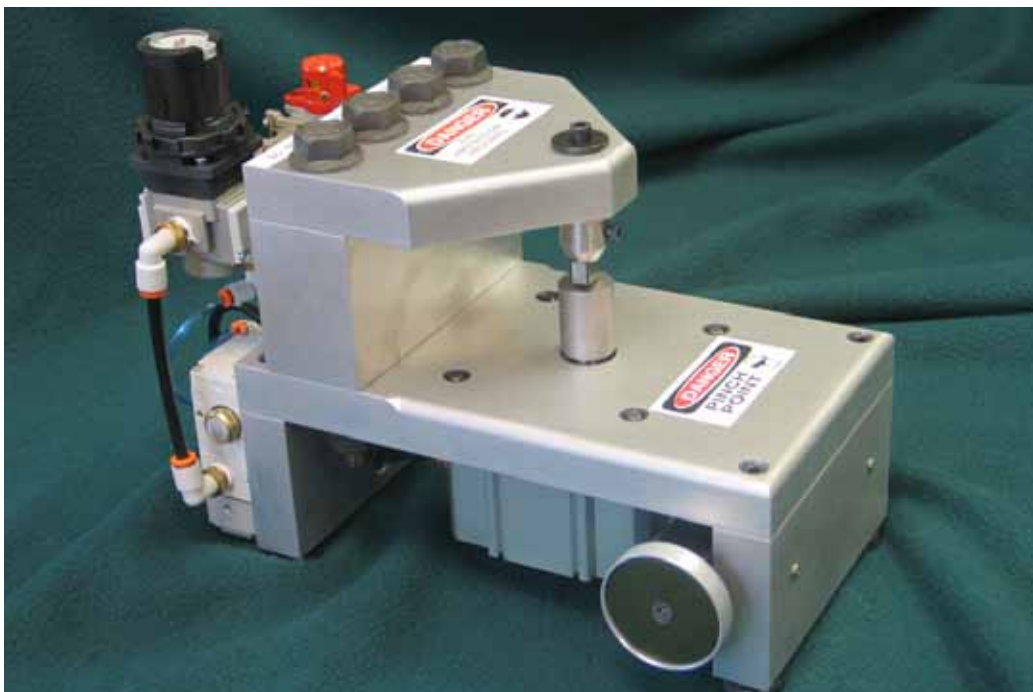
**APPLICATION DRAWING for PART NUMBERS 1295 and 1295T**



**PN 1295 SPECIFICATIONS**

<b>Part Numbers</b>
Loose: 1295 Taped: 1295T Small Reel: 1295T-SR
<b>Wire Sizes</b>
20 AWG (.045, .050, .061 in. OD) 22 AWG (.053, .058 in. OD)
<b>Material Thickness / Type</b>
0.012" (0.30mm) Pre-Plated Brass
<b>Current Rating*</b>
Up to 6.5 Amps
<b>Crimping / Wire Termination Tools</b>
Mini Press for high volume applications WTC-1295-1 for low volume and/or field terminations
<b>Standard Finish</b>
100% Tin over Copper
<b>Feeder Systems</b>
SMT Feeder for Loose Piece Terminals Standard 16mm Tape Feeder
<b>U.S. Patent No. 7,591,666 B2 and other U.S. and international patents</b>
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MP 1000 for high volume wire termination in Zierick Insulation Piercing Crimp Terminals

## About Zierick

Zierick Manufacturing Corporation is the leading source of solutions to complex interconnection requirements and problems. From standard products to custom-made goods, Zierick has invented and produced technologies which have become the industry standard and which will continue to shape the industry in the future. Zierick also provides its customers with assembly equipment, interconnection hardware, and taped terminals. For nearly a century, Zierick has maintained custom stamping capabilities, setting the standard in both design leadership and quality tooling and stamping.

For more information on all Zierick products, contact Zierick Manufacturing Corp., 131 Radio Circle, Mount Kisco, NY, 10549. Toll-free phone number: 800-882-8020. Email: [connectwithus@zierick.com](mailto:connectwithus@zierick.com).

## INSULATION PIERCING CRIMP FAMILY SURFACE MOUNT TERMINALS PART NUMBERS 1286, 1293 AND 1295

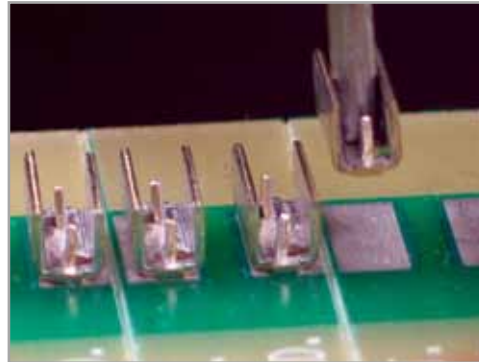


Figure 1: Terminals placed on PCB

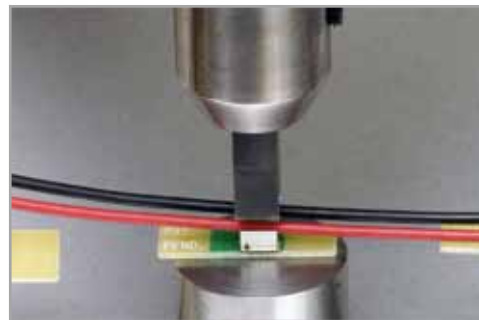


Figure 2: Wire is Crimped into Terminal



Figure 3: Wires Properly Terminated by the Press



Figure 4: Field Wire Termination Tool



Figure 5: Cross Section of Terminated Wire

Figure 1 shows PN 1286 being placed onto pre-pasted SMT solder pads. There are two pads per “board”. After reflow, the terminal is ready to receive the wire (18 AWG for PN 1286).

After the terminal is soldered to the PCB, the wire is placed in its “U” shaped channel and inserted under the tool on the Mini Crimping Press. See Figure 2. The crimping cycle is initiated by simply pressing the two actuator buttons on the sides of the press.

Figure 3 shows the wires properly terminated by the press. The same termination can be performed in the “field” with one of our hand crimping tools, shown in Figure 4.

Figure 5 is a cross-section of the stranded wire that was crimped by the 1286 connector.

The insulation does not need to be stripped from the wire prior to termination. The connection is made by the insulation piercing spikes which are forced into the wire strands. The curved terminal “crimp ears” keep the spikes inside the wire and provide strain relief for the conductor.

This insulation piercing process requires significantly less force to terminate a wire than conventional crimping, therefore shock loading of the PCB assembly is minimized. This process provides a reliable connection through a large range of crimping forces so it is not crimping-force sensitive. It can accommodate variations of PCB and solder thicknesses.