

PRODUCT SOLUTIONS



SOLUTIONS FOR LOW YIELDING TEST SOCKETS

DESIGN AND OTHER PROBLEMS WITH DUT BOARDS:

- ◆ Solder mask and/or silkscreen on the DUT board under the socket. (*All manufactures of pogo pin sockets specify that this area is to free of solder mask and silk screen.*) This prevents the pogo pins from making good contact to the DUT board by raising the bottom of the socket off the DUT board too far so that the pogo pins do not extend far enough to make contact to the DUT board.
- ◆ Over etched traces on the DUT board (*makes the contact area too small*)
- ◆ Poor gold plating on the DUT board (*most manufactures recommend 50 micro inches of Gold over 200 micro inches of Nickel*)
- ◆ Pads on the DUT board too small or misaligned. (*design problem*)
- ◆ Alignment holes for socket are too large and allow the socket to be misaligned to the pads.
- ◆ DUT board too thin, so DUT board flexes when pressure is placed on the package (*If a thin DUT board is used, a backing plate must be used on the bottom side of the DUT board*)
- ◆ Not cleaning the DUT board before placing the socket on the board. Small pieces of debris or oxidized pads will cause opens or intermittent problems.

POTENTIAL PROBLEMS WITH THE TEST PINS OR SOCKETS:

- ◆ The sockets must be kept clean and free of any debris, including solder and plastic debris from the parts. Many CSP devices leave a lot of debris in the socket. We found that cleaning sockets with compressed air every 10k to 20K insertions will improve yield.
- ◆ Low force pins, (like the L4-311) must be kept very clean. Use compressed air to clean debris off the sockets.
- ◆ Hard stops were not used on the handler, or too much force is used and the pads of the device make indents around the pogo pin holes and cause the pins to stick.
- ◆ Pins are broken or bent. Replace pins
- ◆ Socket was not cleaned before placing on the DUT board and debris on the bottom of the pins cause intermittent contact to the DUT board. Handling of the socket will cause skin particles and other debris to stick to the probes on the bottom of the socket.
- ◆ Faulty pins (pins not to specification, faulty plating, etc). There is always a chance that some faulty pins were not caught in inspection
- ◆ Design problems with the socket. Socket not compatible with the handler or device. This is usually obvious and caused by miscommunication between the customer and socket vendor.

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PROBLEMS WITH HANDLER AND SOCKET

- ◆ Hard stops were not used on the handler, or too much force is used and the pads of the device make indents around the pogo pin holes and cause the pins to stick.
- ◆ Alignment between the handler and socket is off.
- ◆ The handler does not fully compress the package in the socket. Adjust hard stop or pressure of the handler.

POTENTIAL PROBLEMS WITH THE TEST PINS OR SOCKETS:

- ◆ The pocket size is very critical. If the device is smaller than the specification, misalignment in the pocket may cause the pins to miss the pads on the package.
- ◆ Pads on the package are over etched and do not meet specification causing pins to miss the pads on the package.
- ◆ Solder mask covers parts of the pads on the device.
- ◆ Pads on the package are lead free. This required a high force pin (a minimum of 30gm) in order to break through the oxide. Lead free devices require special probes.
- ◆ The pads on the package are rounded. This causes the pads on the device to make indents around the pogo-pin holes and will cause the probes to stick.