

Table 3 Printed Board Assembly Simulation to end-use Reliability Test Matrix

Product Application per end use					
End-use Environment	A-Interposer	B-Module	C-Portable	D-Product	E-Back Plane
1-Consumer	6X260°C	6X260°C	6X260°C	6X260°C	6X260°C
2-Computers and Peripherals	6X260°C	6X260°C	6X260°C	6X260°C	6X260°C
3-Telecomm	6X260°C	6X260°C	6X260°C	6X260°C	6X260°C
4-Commercial Aircraft	6X260°C	6X260°C	6X260°C	6X260°C	6X260°C
5-Industrial and Automotive Passenger Compartment	6X260°C	6X260°C	6X260°C	6X260°C	6X260°C
6-Military (ground and shipboard)	6X230°C	6X230°C	6X230°C	6X230°C	6X230°C
7-Space	6X230°C	6X230°C	6X230°C	6X230°C	6X230°C
8-Military Aircraft	6X230°C	6X230°C	6X230°C	6X230°C	6X230°C
9-Automotive (under hood)	6X260°C	6X260°C	6X260°C	6X260°C	6X260°C
10- Bio Medical & Life support	6X230°C	6X230°C	6X230°C	6X230°C	6X230°C

CONCLUSIONS

The aspects of quality and reliability are the concern of every member of the supply chain. Deviations from the indented requirements, as documented by the OEM, are never a reason for acceptance as they filter back to the concept of dissatisfied customers all along the supply chain; most of all the end-use customer. The industry and individual specifications identify the requirements for quality. These have been, and will continue to be, identified as:

- Visual Description
- Dimensional descriptions
- Interconnection Integrity (Microsection)
- Continuity/In-circuit test
- Customer Specific

With the need to establish a method of working with the members of the supply chain the OEMs need a new methodology to establish the fact that the new supplier, with slightly different materials and processes, can produce a product that is identical to that made during the prototype stages.

The term Process Robustness was coined by several OEMs to represent the test methods usually reserved for reliability evaluations now required of a new manufacturer. It is very similar to what the military once coined “First Article Inspection” and it may be for some contractual requirements that these issues will need to be revisited. The methods that would be used to establish “Durability” are:

- HATS test requirements
- IST test requirements
- Solder Float exposure
- Solder reflow simulation

These will become reliability requirements to ascertain product robustness.