GENERAL DYNAMICS
Ordnance and Tactical Systems

Healdsburg Supplier Quality Requirements

QR-0048

Revision	Date
-	02/27/2019

Printed Wiring Boards/Assemblies

Revision History

REV.	CN #	DATE INCORP.	NOTES
-	40764	02/27/2019	Initial Release

Requirements

A) **Solderability**

- All electronic component lots with greater than 1 year since solderability was verified/certified shall be re-inspected to verify solderability, per the requirements of IPC J-STD-002 or equivalent. When solderability inspection is performed as part of the documented assembly process, per IPC J-STD-001, that option may be used in lieu of solderability testing. Component lots that fail to meet solderability requirements shall not be used for assembly.

B) **PWB Testing and Inspection**

- PWB's on this order shall be tested and conform to the requirements of IPC-6012 Class 3 or IPC-6013 Class 3.
- For thermal stress testing and cross-section analysis, the PCB fabrication supplier shall add test coupon(s) to the fabrication panel that are representative of the actual board construction. Coupon(s) used for thermal stress testing purposes and cross-section evaluations at the final quality check are to be subjected to thermal stress testing as defined in IPC-TM-650. Each shipment shall be accompanied by one representative test coupon for each lot or batch along with a legible copy of all applicable test data from the tests conducted on printed wiring boards or subassemblies submitted to GD-OTS
- PWB shall meet the requirement of Acceptability of Printed Boards IPC-A-600 Class 3.

C) **Electrical Test**

- The supplier shall create a net list from GD-OTS supplied Gerber files and shall test bare PWBs against their generated net list data. Electrical Test shall comply with applicable sections of the current revision of IPC 6012 or IPC 6013

D) **Serialization and Marking**

- Subcontractor shall apply unique serialization to each PWA/PWB and this number shall be used to identify the specific PWA/PWB through the entire process and on all documentation provided to GD-OTS. All serialization shall be clear and easily interpreted. Serial numbers of units that are considered "Scrap" shall not be duplicated.

E) **Cleaning Requirement**

- Supplier shall pre-clean bare boards and rinse with de-ionized water until an ionic contamination level of less than 1.55 micrograms per square centimeter is obtained. Record actual contamination level. After cleaning, handle boards with non-contaminating gloves until all components have been installed. Boards shall be baked at 150 degrees F +/- 10% for 10 hours minimum prior to solder application.

F) **Repair and/or modification**

- Repair and/or modification of the PWB/PWA are not authorized. IPC-7721 is not applicable.

G) Use of Lead-free Solders

- Lead-free soldering is prohibited

H) Moisture Sensitive Solid State Devices

- For solid state devices in non-hermetic packages, the supplier shall establish the moisture sensitivity classification for each such device based, preferably upon part manufacturer assessment and testing. Moisture sensitivity classification must be used by part installers to govern pre-installation storage conditions, out of bag time length, and to specify possible part pre-conditioning prior to installation, to avoid possible part damage from circuit installation temperature excursions (case rupture from contained water vaporization) and related stresses, reference IPC/JEDEC J-STD-033.