



# Purchase Order Flow Downs

Quality clauses listed by number in this document are available on [ <http://www.ftgcorp.com/c-PO-requirements.html> ], the FTG Circuits web site. The appearance of the individual clause numbers on the front page of any FTG Purchase Order signifies that FTG expects compliance with the listed clauses and failure to comply will be sufficient cause for rejection. Suppliers that cannot comply with any specific clause are expected to advise FTG Circuits in writing of the inability to comply. [Document MAT-001, Quality Clauses]

## QUALITY CLAUSES

- 001 a** Supplier must have an ISO 9001:2000 registered quality system or documented equivalent. The system must include, at a minimum, requirements for approval of their products, procedures, processes, and equipment, as well as methods of qualifying their personnel to perform to the expected requirements.
- b** Supplier must identify the shipped materials with their logo or similar identification, applicable specifications, drawings, and other technical data used to manufacture and verify the product. This includes inspection and process data.
- c** Supplier must provide a Certificate of Conformance showing evidence of product testing, inspection, and compliance.
- d** Supplier must not ship any non-conforming materials or products without written pre-approval from FTG Circuits.
- e** Supplier must advise FTG Circuits in advance of any product or process changes that affect products shipped to our facility and where required obtain written pre-approval to ship that product.
- f** FTG Circuits reserves the right access to all supplier sites and facilities on behalf of our own organization, our customers, and regulatory authorities who have a stake in the products we purchase. This includes the right to review all applicable records and documentation associated with the products purchased.
- g** Supplier must provide evidence that all quality clauses and purchase order terms and conditions have been flowed down to their sub-tier suppliers and contractors. This includes clauses from the suppliers system as well as clauses flowed down from FTG Circuits and through us, our customers.
- h** Supplier must package materials in such a way that they are protected from physical damage and the environment. Damage that occurs in transit is the responsibility of the supplier.
- i** Supplier must not charge for boxing, crating, packaging, or cartage unless it is agreed with FTG Circuits at time of purchase and clearly stated on the Purchase Order.
- j** FTG Circuits reserves the right to cancel all or part of this order if it is not filled in accordance with the "Conditions of Purchase" and "Quality Clauses" by the due date stated on the front of this Purchase Order.
- k** In cases of conflict of any of FTG Circuits' terms with those of the Supplier, FTG's terms will govern unless specific exception is agreed to in writing by FTG Circuits.
- l** Supplier agrees to indemnify and save harmless FTG Circuits against any and all claims for patent infringement or for royalties with respect to any goods, apparatus, to be furnished by the Supplier and/or his sub-tier suppliers. The supplier will defend, at its expense, any or all suits or actions at law which may be brought against FTG Circuits under any such claim for infringements or royalties. FTG Circuits will give notice in writing if the institution of any such suit or proceeding and will permit the Supplier, through its counsel, to defend the same and will give the supplier all needed information, assistance, and authority to enable it to do so.
- m** Acceptance by FTG incoming inspection does not absolve suppliers of quality conformance issues found during subsequent processing and/or product testing.
- n** FTG expects all suppliers and their sub-contractors not to do business with any persons or companies on the U.S. Dept. of Commerce, Denied Persons List, Dept. of State Debarred Parties List, and Dept. of Treasury, and the Foreign Assets Control Specially Designated Nationals list.
- o** Suppliers will adhere to the directions stated in Executive Order 13224, "Executive order on terrorist financing, blocking property, and prohibiting transactions with person who commit, threaten to commit, or support terrorism effective 9/24/01 and any subsequent changes.
- p** The FTG Quality Management System requires that the suppliers retain all manufacturing and quality records for every product shipped to our facility for a minimum of seven years. Exceptions based on customer flow down requirements will be clearly stated on the front of the individual purchase orders when required. If extended retention periods cannot be maintained, storage at FTG must be pre-arranged.
- 002** Raw laminate materials and prepregs must be supplied in accordance with FTG Circuits purchasing specification MAT-006, latest revision. The supplier is responsible to ensure that they are in possession of the latest revision. In addition, all materials must meet the requirements of IPC-4101 [latest revision], Specification for Base Materials for Rigid and Multilayer Printed Boards.
- 003** Raw laminate materials and prepregs must be supplied in accordance with FTG Circuits purchasing specification MAT-006, latest revision. The supplier is responsible to ensure that they are in possession of the latest revision. In addition, all materials must meet the requirements of IPC-4103 [latest revision], Specification for Base Materials for High Speed / High Frequency Applications.
- 004** Soldermask must meet the requirements of IPC-SM-840D, Qualification and Performance of Permanent Soldermask.
- 005** Supplier must supply Material Safety Data Sheet [MSDS] with this shipment.
- 006** Supplier must supply maximum available shelf life data with this shipment. Material with less than three [3] months shelf life remaining must not be shipped.
- 007** Supplier must provide evidence that the tool or equipment supplied has been calibrated prior to shipment.

- 008** Supplier must provide samples for evaluation accompanied by an AS9102 first article prior to the shipment of the completed order.
- 009** The applicable specification for this purchase order for copper materials is IPC-4562.
- 010** The applicable specification for this purchase order for silver materials is IPC-4553.
- 011** The applicable specifications for this purchase order for electro-plated nickel gold materials is are: Gold - ASTM-B-488 and Nickel - SAE-AMS-QQ-N-290.
- 012** The applicable specification for this purchase order for electroless nickel gold materials is IPC-4552.
- 013** The applicable specification for this purchase order for solderable material is J-STD-003.
- 014** Supplier certifies that it will comply with DFAR 252.225-7014 Alternative 1 if the purchase order contains a U.S. Government Department of Defense [DoD] contract number.
- 015** Supplier certifies that it is aware of and will comply with all other DFAR requirements that may be listed on FTG purchase orders and refuse orders if they cannot comply.
- 016** As a manufacturer of bare printed circuit boards, FTG Circuits, Toronto does not purchase electrical components and therefore, it is not subject to the full requirements of AS5553, AS6081, and IDEA-STD-1010. Suppliers dealing in both raw materials and components must in compliance with these stated requirements to ensure an uninterrupted supply of raw materials will always be available to FTG and the suppliers ability to do business is not impacted by government or regulatory intervention.
- 017** FTG Suppliers providing metals in any form must have a copy of the current revision CFSI CMRT (conflict minerals reporting template) on file, including a completed smelter list and make it available to FTG on request in accordance with the Dodd-Frank Act, section 1502 (conflict minerals), release 34-63547.

Last revised: January 11, 2017