



## DEFENSE LOGISTICS AGENCY

LAND AND MARITIME  
POST OFFICE BOX 3990  
COLUMBUS, OH 43218-3990

March 13, 2018

Paul Kamper

Quality Manager

Silicon Turnkey Solutions

801 Buckeye Ct

Milpitas, CA 95035

Hi-Reliability Microelectronics

1804 McCarthy Blvd

Milpitas, CA 95035

Dear Mr. Kamper:

Re: Commercial Laboratory Suitability Status; MIL-STD-883; FSC 5962; VQC-18-032556; Patterson. CN: 057889.

Based on the results of the DLA Land and Maritime audit conducted during the week of July 24<sup>th</sup>, 2017, Silicon Turnkey Solutions & Hi-Reliability Microelectronics are considered suitably equipped to perform the MIL-STD-883 tests, listed in the enclosure, on monolithic microcircuits in accordance with the requirements of military specification MIL-PRF-38535 effective immediately.

Your laboratory is to maintain a record for all microcircuit testing and submit a three-part retention report annually to DLA Land and Maritime-VQC that will include the following three parts as a minimum:

1. Summary of Completed Testing
  - a. Military Part Number
  - b. Vendor Part Number
  - c. Manufacturer/ Customer
  - d. Lot Date Code
  - e. Test Method(s) and Specified Conditions
  - f. Date Test Completed
  - g. Quantity Tested
  - h. Quantity Accepted and Rejected, when evaluating Acceptability
2. Summary of MIL-STD-883 Internal Audit Results
3. Master List of Controlled Documents (External and Internal), including Current Revision

The standard retention-reporting period is the calendar year, from 01 JAN through 31 DEC. Your three-part report is then due by 31 JAN the following year.

Test labs shall notify the qualifying activity immediately after learning of a potential issuance of a GIDEP alert, problem advisory or major quality/reliability problem on their military products utilizing the test methods on the attached enclosure. Failure to provide prior notification may be grounds for removal from DLA Land and Maritime's Commercial Lab Suitability Listing.

This Laboratory Suitability is subject to the policies, procedures, and conditions of the Defense Standardization Program, as published in the manual DoD 4120.24-M, SD-6, and the DLA Land and Maritime-VQ Laboratory Suitability Booklet.

This laboratory suitability is valid until withdrawn by DLA Land and Maritime-VQC. Any deviation to the test method or condition(s) listed herein must be approved by the Qualifying Activity.

If you have any questions, please contact Mr. Philip Patterson at (614) 692-2178.

Sincerely,

MICHAEL S. ADAMS  
Chief  
Custom Devices Branch

Enclosure

Visit us on the web at: [http://landandmaritimeapps.dla.mil/offices/sourcing\\_and\\_qualification/](http://landandmaritimeapps.dla.mil/offices/sourcing_and_qualification/)

| <b>TEST</b>  | <b>METHOD/CONDITION</b>   |
|--|---|
| Insulation Resistance  | 1003 (A-E, 600V, 100na)   |
| Moisture Resistance  | 1004  |
| Steady State Life Test   | 1005 (A-F)  |
| Stabilization Bake   | 1008 (A-D)  |
| Salt Atmosphere  | 1009 (A-D)  |
| Temperature Cycling  | 1010 (A-C)  |
| Thermal Shock  | 1011 (A-C)  |
| Seal   | 1014 (A <sub>1</sub> , A <sub>2</sub> , C <sub>1</sub> )          |
| Burn-in  | 1015 (A-F)  |
| Constant Acceleration  | 2001 (A-E)  |
| Mechanical Shock   | 2002 (A-G)  |
| Solderability  | 2003 (Test A-C)   |
| Lead Integrity   | 2004 (A, A <sub>1</sub> , B <sub>1</sub> , B <sub>2</sub> , D, E) |
| Vibration, Variable Frequency                                  | 2007 (A-C)  |
| External Visual  | 2009  |
| Internal Visual (Monolithic)                                   | 2010  |
| Bond Strength  | 2011 (D)  |
| Internal Visual Inspection for DPA                             | 2013  |
| Resistance to Solvents   | 2015  |
| Physical Dimensions  | 2016  |
| Die Shear Strength   | 2019  |
| Particle Impact Noise Detection (PIND)                         | 2020 (A, B)   |
| Nondestructive Bond Pull                                       | 2023  |
| Lid Torque for Glass Frit Sealed Packages                      | 2024  |
| Adhesion of Lead Finish  | 2025  |
| Random Frequency Vibration                                     | 2026  |
| Substrate Attach Strength                                      | 2027  |
| Pin Grid Destructive Lead Pull                                 | 2028  |
| Ultrasonic Inspection of Die Attach                            | 2030  |
| Flip-Chip Pull-Off   | 2031  |
| Resistance to Soldering Heat                                   | 2036 (A, B, I, J, K)  |
| Solder Column Package Destructive Lead Pull                    | 2038  |
| Electrostatic Discharge Sensitivity Classification             | 3015  |
| IC Latch-Up Test   | 3023 (JESD78)   |
| Electrical Test  | Note 1  |
| Highly Accelerated Temperature and Humidity Stress Test (HAST) | JESD22-A110   |
| Accelerated Moisture Resistance - Unbiased HAST                | JESD22-A118   |

Note 1: Silicon Turnkey Solutions and Hi-Reliability Microelectronics electrical test systems are certified in compliance with MIL-STD-883 paragraph 4.5 as applicable. Their system is suitable to perform electrical test over military case temperature (T<sub>case</sub>) of 25°, 125°, and -55° C. Electrical Test suitability does not cover individual test programs. It is the responsibility of the commercial lab to obtain a record of customer approval stating that the hardware/software integration, including resolution and accuracy are adequate to meet the forcing and measurement conditions required, for the specified device type.