

## ELECTRICAL TESTING

Verifying the performance of electronic components early is a critical step for preventing production delays, cost overruns and even device failures that can have catastrophic consequences within a final application. With stakes this high, it is essential that electrical testing is performed by a facility you can trust. Advanced Component Testing (ACT) is an ISO17025-accredited facility with Lab Suitability accreditation from the U.S. Defense Logistics Agency for testing electronic components to key MIL-STD-750, -883 and -202 specifications. ACT customers come to us for a variety of reasons including qualification testing prior to production, up screening COTS parts to MIL-SPEC status, recertification testing, and failure analysis.



ACT's highly trained technicians, software engineers and test engineers create customized bench and automated test routines for new and legacy semiconductors, integrated circuits and more. All testing is performed using highly specialized test equipment, often via custom designed test fixtures. In addition to quality testing, Advanced Component Testing can perform up screening to permit parts substitutions and testing to unique customer flow-down requirements.

Having met the most rigorous mil/aerospace standards, ACT is also well qualified to electrically test electronic components for the commercial, automotive, communications, medical and industrial sectors. ACT leads the industry in certifications and accreditations and specializes in short-lead-time and high-mix component testing.

### Test Offering

To MilSpec test methods or other required standard.

- AC/DC Characteristics
- Functional
- Parametric
- Group A, B, C
- V-I Curve Trace
- Up Screening
- Burn-In
- Life Testing
- Failure Analysis
- At High/Low Temperatures from -70C to +260C

### Test Plan Strategies

ACT engineers, programmers and technicians develop detailed manual and automated electrical test routines to comply with the following lab standards and flow-down requirements.

- QTSL level for FSC 5961+5962
- MIL-STD-750, > 100 Test Methods
- MIL-STD-883, > 50 Test Methods
- MIL-STD-202, 11 Test Methods
- DFARS Part 252.246-7007
- AS6171 Counterfeit Detection Testing Procedures
- AS6081 Counterfeit Avoidance Protocol
- CCAP-101

### DEVICES

**PASSIVE**  
*Capacitors  
Inductors  
Resistors*

**DISCRETE SEMIS**  
*Arrays  
Diodes  
Rectifiers/SCRs  
Transistors  
TRIACs*

**LINEAR**  
*ADCs, DACs  
Analog Switches  
Op-Amps  
Opto Couplers  
Voltage Regulators*

**DIGITAL**  
*CMOS, ECL, TTL*

**MEMORY**  
*DRAM, SRAM,  
EEPROM, EPROM,  
Flash*

**MICROPROCESSORS**

*And more:  
mixed signal +  
non-discrete*

### PACKAGES

*Axial Leaded  
DIP  
DPAC  
QFP  
PLCC  
Radial Leaded  
SOIC  
SOP  
SOTxx  
TOxx  
TSOP  
And More...*

## ACT Methodology

At ACT we take a consultative approach to electrical testing. We apply our extensive knowledge of EEE devices, and the detailed procedures for testing them to each standard, to evaluate the initial test requirements to ensure the final test plan meets all testing goals including flow-down requirements. Our engineers and technicians are also highly skilled at building specialized test fixtures and developing custom procedures for bench testing as well as parts-specific algorithms for volume automated testing. The end result is a comprehensive report that includes an analysis summary, sampling information, full read-record or pass/fail data, color photos, and (when authenticity testing is also requested) a parts history analysis.

| Test # / Operator |                    | 8a/MC                       |       |       |       |       |       |       |       |  |
|-------------------|--------------------|-----------------------------|-------|-------|-------|-------|-------|-------|-------|--|
| Device            | Test               | Output Current Hi-Z state   |       |       |       |       |       |       |       |  |
|                   | Symbol             | Io(off)high                 |       |       |       |       |       |       |       |  |
|                   | Conditions         | Vcc=5.5v, CE!=5v, Vout=5.5v |       |       |       |       |       |       |       |  |
|                   | Passing Conditions | < 40 $\mu$ Amps             |       |       |       |       |       |       |       |  |
|                   | Units              | $\mu$ Amps                  |       |       |       |       |       |       |       |  |
|                   | PIN                | F0                          | F1    | F2    | F3    | F4    | F5    | F6    | F7    |  |
| 1                 | Pass               | 0.012                       | 0.013 | 0.014 | 0.010 | 0.009 | 0.012 | 0.010 | 0.013 |  |
| 2                 | Pass               | 0.013                       | 0.011 | 0.009 | 0.009 | 0.009 | 0.010 | 0.009 | 0.013 |  |
| 3                 | Pass               | 0.015                       | 0.011 | 0.010 | 0.010 | 0.010 | 0.010 | 0.010 | 0.014 |  |
| 4                 | Pass               | 0.015                       | 0.011 | 0.010 | 0.010 | 0.010 | 0.011 | 0.010 | 0.015 |  |
| 5                 | Pass               | 0.021                       | 0.015 | 0.013 | 0.013 | 0.013 | 0.013 | 0.013 | 0.021 |  |
| 6                 | Pass               | 0.014                       | 0.012 | 0.011 | 0.009 | 0.010 | 0.010 | 0.011 | 0.014 |  |
| 7                 | Pass               | 0.016                       | 0.011 | 0.012 | 0.011 | 0.011 | 0.011 | 0.011 | 0.014 |  |
| 8                 | Pass               | 0.015                       | 0.011 | 0.011 | 0.010 | 0.010 | 0.010 | 0.010 | 0.013 |  |
| 9                 | Pass               | 0.015                       | 0.012 | 0.013 | 0.012 | 0.012 | 0.012 | 0.013 | 0.015 |  |
| 10                | Pass               | 0.015                       | 0.010 | 0.010 | 0.010 | 0.009 | 0.009 | 0.010 | 0.014 |  |
| 11                | Pass               | 0.020                       | 0.017 | 0.017 | 0.016 | 0.016 | 0.016 | 0.017 | 0.019 |  |
| 12                | Pass               | 0.023                       | 0.015 | 0.014 | 0.014 | 0.014 | 0.013 | 0.014 | 0.022 |  |
| 13                | Pass               | 0.014                       | 0.011 | 0.010 | 0.010 | 0.010 | 0.011 | 0.010 | 0.014 |  |

Sample DC Characteristics Test Results from  
ACT Certificate of Compliance Report

## Additional Services

- Advanced Authenticity Inspection for counterfeit detection
- Material Analyses including XRF metal composition and RoHS/MIL lead compliance
- Logistics Services including bake out/dry pack and tape and reeling
- Solderability testing, device programming/erasure, fine/gross leak testing and more
- Device blank checking and programming

## Total Quality Management

The Quality Management System (QMS) at Advanced Component Testing has been developed and certified to meet the requirements of ISO 9001:2008 Quality Management Systems Requirements. ACT's QMS is focused on improving the quality and accuracy of our testing. By monitoring, evaluating and adjusting our and administrative and technical processes, ACT is able to maximize test reliability while maintaining competitive pricing.

