



AEROSPACE RECOMMENDED PRACTICE

ARP7519™

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Potential Usage of Life Test Samples for Flight

RATIONALE

This SAE Aerospace Recommended Practice (ARP) describes practices that may support potential usage of life test samples of integrated circuits, microcircuits, multi-chip modules (MCM), hybrid microcircuits, and semiconductor devices as defined in MIL-PRF, MIL-PRF-38535, MIL-PRF-38534, and MIL-PRF-19500. It provides guidelines of when and how such potential life test samples can be used. At this time, guidance is only provided for potential usage of life test samples based on mission criticality as determined by the user authority.

This ARP is based on industry best practices for use of such life test samples to be potentially used for flight parts; it does not provide any recommendation if such samples can be used for flight. The final decision of usage of any life test samples lies with the user authority after considering the complexity levels of components, or assurance levels of hardware along with mission criticality.

1. SCOPE

This SAE Aerospace Recommended Practice (ARP) is not a certification document; it contains no certification requirements beyond those already contained in existing certification documents. The purpose of this ARP is to provide:

- a. Guidelines for potential usage of life samples depending upon the mission environment and at user discretion to use them or not.
- b. Guidelines of:
 1. Who approves the parts to be used.
 2. Notification requirements to manufacturers.
 3. Traceability and segregation.
 4. Packing and labeling of such parts.

This ARP does not claim that the recommended practices and artifacts described herein are the only acceptable ones. They are, however, used widely today, and merit serious consideration of potential usage where applicable in the military and space hardware.

This ARP does not supersede any contracts or legal agreements between contractual parties.

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Full document details: SAE ARP7519

For more information on this standard, visit
<https://www.sae.org/standards/content/ARP7519/>

Documents

Document Sharing Hub

2. REFERENCES

2.1 Applicable Documents

The following publications form a part of this document to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

2.1.1 U.S. Government Publications

Copies of these documents are available online at <https://quicksearch.dla.mil>.

MIL-PRF-19500 Performance Specification: Semiconductor

MIL-PRF-38534 Performance Specification: Hybrids

MIL-PRF-38535 Performance Specification: Microcircuits

MIL-STD-750 Test Method: Semiconductors

MIL-STD-883 Test Method Standard: Microcircuits

2.1.2 JEDEC Publications

Available from JEDEC, 3103 North 10th Street, Suite 240-S, Arlington, VA 22201-2107, www.jedec.org.

JEP122 Failure Mechanisms and Models for Semiconductor Devices

2.2 Definitions

FLIGHT: Actual mission.

PROCURING ACTIVITY: A component of an executive agency having a significant acquisition function. Synonymous with "contracting activity."

TERMINATIONS: Edge of the device surface that connects the devices to a board or substrates of a system.

2.3 Acronyms

ARP	Aerospace Recommended Practice
DoD	Department of Defense
MCM	Multi-Chip Modules
PED	Plastic Encapsulated Discrete Semiconductors
PEM	Plastic Encapsulated Microcircuits
QCI	Quality Conformance Inspection
Qual	Qualification