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External visual test method

PUBLICLY AVAILABLE SPECIFICATION

INTERNATIONAL
ELECTROTECHNICAL
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EXTERNAL VISUAL TEST METHOD

FOREWORD

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IEC-PAS 62163 was submitted by JEDEC and has been processed by IEC technical committee 47: Semiconductor devices.

The text of this PAS is based on the following document:	This PAS was approved for publication by the P-members of the committee concerned as indicated in the following document:
Draft PAS	**Report on voting**
47/1463/PAS	47/1496/RVD

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TEST METHOD B101

EXTERNAL VISUAL

1.0 PURPOSE

The purpose of this examination is to verify that the materials, design, construction, markings, and workmanship of the device are in accordance with the applicable procurement document. External Visual is a non-destructive test and applicable for all package types. The test is useful for qualification, process monitor, or lot acceptance, or both.

2.0 APPARATUS

Apparatus used in this test shall be capable of demonstrating device conformance to the applicable requirements.

3.0 PROCEDURE

The device shall be examined in accordance with the requirements of the applicable procurement document and the criteria listed in paragraph 4.0. Where adherence of foreign material is in question, devices may be subjected to a clean filtered air stream (suction or explusion) of 88 feet per second, maximum, and reinspected.

4.0 FAILURE CRITERIA

Devices shall be considered to fail if they exhibit any of the following:

4.1 Device design, lead identification, markings (content, placement, and legibility), materials, construction, and workmanship, are not in accordance with the applicalbe procurement document.

4.2 Visible evidence of corrosion, contamination or breakage [grossly bent or broken leads, cracked seals (except for glass meniscus)], defective (peeling, flaking, or blistering) or damaged plating or exposed base metal. (Discoloration of the finish shall not be cause for failure unless there is evidence of flaking, pitting or corrosion).

4.0 FAILURE CRITERIA (Continued)

4.3 Leads that are not intact and aligned in their normal location; free of sharp or unspecified lead bends; and (for ribbon leads) free of twist outside the normal lead plane.

4.4 Leads that are not free of foreign material such as paint or other adherent deposits.

4.5 Evidence of any nonconformance with the detail drawing or applicable procurement document, absence of any required feature, or evidence of damage, corrosion, or contamination that will interfere with the normal application of the device.

4.6 Defects or damage resulting from manufacturing, handling, testing, or the following:

(a) Cracked or broken packages. Surface scratches shall not be cause for failure, except where they violate other criteria stated herein for marking, finish, etc.

(b) Any chip-out dimension that exceeds 0.060 inch (1.52 mm) in any direction on the surface and has a depth that exceeds 25% of the thickness of the affected package element (i.e., cover, base or wall).

(c) Any chip-out that exposes either sealing glass (not previously exposed prior to the chip-out) or any lead frame material that is not intended to be exposed by design.

5.0 SUMMARY

The following details shall be specified in the applicable procurement document:

(a) Requirements for markings and the lead or pin identification (see 4.0).

(b) Detailed requirements for materials, design, construction, and workmanship (see 4.0).

(c) Sample size and Quality level.