Automotive Electronics Council
Component Technical Committee

ATTACHMENT 2

AEC - Q102-002

BOARD FLEX TEST (BF)

Automotive Electronics Council

Component Technical Committee

NOTICE

AEC documents contain material that has been prepared, reviewed, and approved through the AEC Technical
Committee.

AEC documents are designed to serve the automotive electronics industry through eliminating misunderstandings between manufacturers and purchasers, facilitating interchangeability and improvement of products, and assisting the purchaser in selecting and obtaining with minimum delay the proper product for use by those other than AEC members, whether the standard is to be used either domestically or internationally.

AEC documents are adopted without regard to whether or not their adoption may involve patents or articles, materials, or processes. By such action AEC does not assume any liability to any patent owner, nor does it assume any obligation whatever to parties adopting the AEC documents. The information included in AEC documents represents a sound approach to product specification and application, principally from the automotive electronics system manufacturer viewpoint. No claims to be in conformance with this document shall be made unless all requirements stated in the document are met.

Inquiries, comments, and suggestions relative to the content of this AEC document should be addressed to the AEC Technical Committee on the link http://www.aecouncil.com.

Published by the Automotive Electronics Council.

Automotive Electronics Council
Component Technical Committee

METHOD – 002

OPTOELECTRONIC COMPONENT BOARD FLEX TEST (BF)

1. SCOPE

1.1 Description:

This specification establishes the procedure and criteria to determine the ability of surface mounted optoelectronic components to withstand bending, flexing and pulling forces which occur on printed circuit boards during handling and assembly.

2. EQUIPMENT:

2.1 Test Apparatus:

The apparatus shall consist of mechanical means to apply a force which will bend the board (D) x = 2 mm minimum (or as defined in the customer specification).

3. TEST PROCEDURE:

3.1 Sample Size:

Specified in AEC-Q102 table 2.

3.2 Test Enviroment:

Part mounted on an FR4 board provided by the supplier for the part being tested with the following requirements:

1. Land pattern is supplier's standard for part being tested.

2. Part mounted on a FR4 PCB board, which is 1.6mm ± 0.2 mm thick and as a Layer-thickness 35 µm ± 10 µm. Part should be mounted using a soldering reflow profile according to JEDEC J-STD-020

3. Place the board into a fixture similar to the one shown in Figure 1 with the component facing down. Apply a force which will bend the board (D) x = 2 mm minimum (or as defined in the customer specification). The duration of the applied forces shall be 60 (+ 5) Sec. The force is to be applied only once to the board.

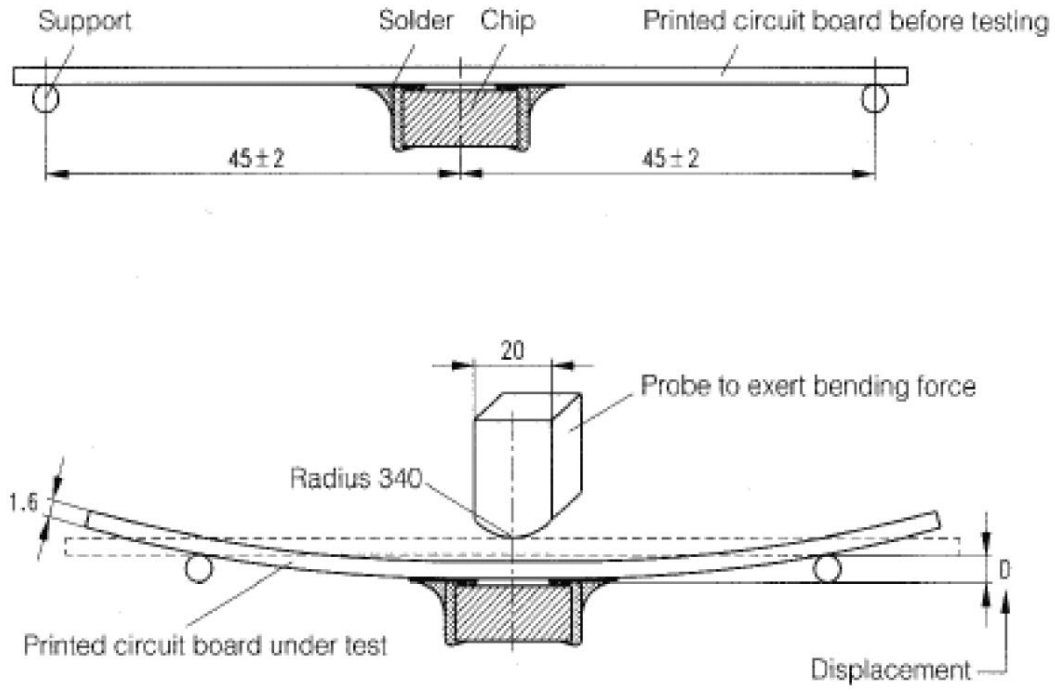

Figure 1: Board Flex Test Fixture

3.3 Measurement:

A test monitor (e.g., electrical testing of Vf or leakage current) shall be used to detect when a part cracks or a solder joint failure occurs. It is recommended to use the test monitor during the time the force is being applied. In addition the parts shall be examined under a magnification of up to 50X after stress.

4. FAILURE CRITERIA:

A failure is when a part cracks or causes a change in the electrical parameter being monitored.

Cracked solder joints between part and PCB will no be considered as a failure, but test should be repeated because it cannot be ensured that the part itself underwent the whole bending stress.

Automotive Electronics Council
Component Technical Committee

Revision History

Rev #	Date of change	Brief summary listing affected sections
-	Apr. 6, 2020	Initial Release.