

ATTACHMENT 6

AEC - Q200 - 006 - REV A

TERMINAL STRENGTH (SMD) / SHEAR STRESS TEST

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.

This document may be downloaded free of charge, however AEC retains the copyright on this material. By downloading this file, the individual agrees not to charge for or resell the resulting material.

Printed in the U.S.A.
All rights reserved

Copyright © 2010 by the Automotive Electronics Council. This document may be freely reprinted with this copyright notice. This document cannot be changed without approval from the AEC Component Technical Committee.

METHOD - 006
PASSIVE COMPONENT
Terminal Strength (SMD) / Shear Stress Test

1.0 SCOPE:

The purpose of this test is to verify that the component terminations can withstand axial stresses that are likely to be applied during normal manufacturing and handling of a finished printed circuit board (PCB) assembly.

1.1 DESCRIPTION:

This test is designed to evaluate the strength of the solder bond between terminations/leads of a surface mounted device and a specified copper pattern on glass epoxy circuit board.

1.2 Reference Documents:

None.

2.0 EQUIPMENT:

Unless otherwise specified, the SMD shall be tested while mounted onto a .062 inch thick FR-4 PCB using 1 ounce of Copper. The Supplier shall use the preferred pad layout for the device being tested. The Supplier shall provide parts placed and reflowed on the test coupon and provided as part of the qualification package. (See Figure 1 below)

2.1 Test Apparatus:

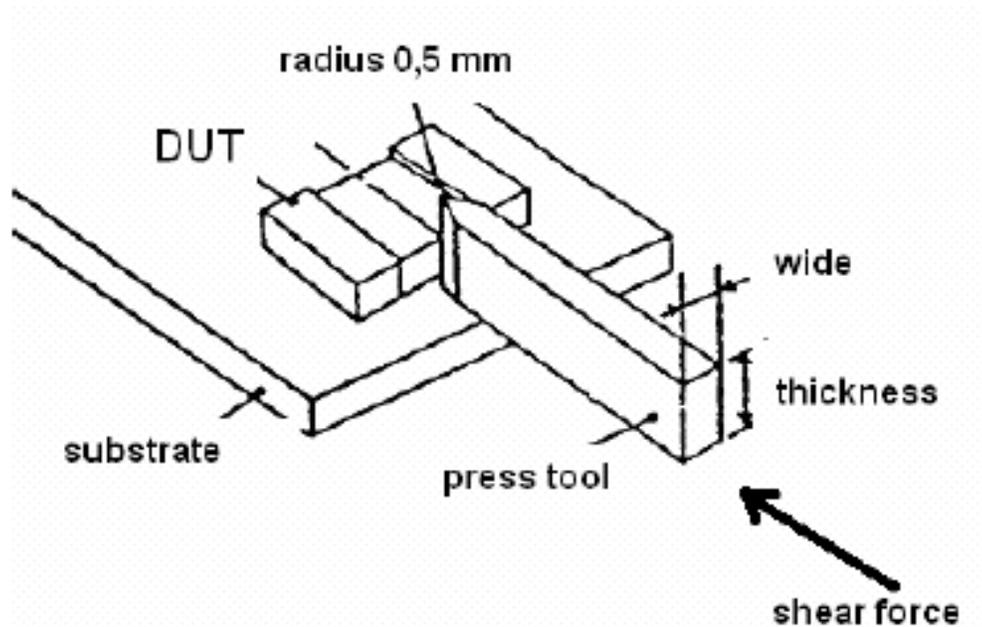
See Figure 1.

Automotive Electronics Council
Component Technical Committee

3.0 TEST PROCEDURE:

With the component mounted on a PCB obtained from the Supplier with the device to be tested, apply a 17.7 N (1.8 Kg) force to the side of a device being tested. This force shall be applied for 60 +1 seconds. Also the force shall be applied gradually as not to apply a shock to the component being tested. (See Figure 1)

Figure 1



Magnification of 20X or greater may be employed for inspection of the mechanical integrity of the device body, terminals and body/terminal junction. Before, during and after the test, the device shall comply with all electrical requirements stated in this specification.

3.1 Sample Size:

The total number of components and lots to be tested is listed in Table 1 of AEC-Q200 specification.

3.2 Pre and Post-Measurement:

Visual and Electrical characterization of devices are to be performed at room temperature per device specification.

4.0 FAILURE CRITERIA

The failure criteria are governed by not meeting the device specification, along with evidence of cracking or part being sheared off from its pad.

Revision History

<u>Rev #</u>	<u>Date of change</u>	<u>Brief summary listing affected paragraphs</u>
-	February 15, 2005	Initial Release.
A	June 1, 2010	Notice Statement (Page 2) Added. Format Updated.