



IPC-TM-650 TEST METHODS MANUAL

1 Scope This test describes a procedure which may be conducted to determine if a printed wiring board is constructed to withstand the dynamic vibrational stresses that may be encountered during field service. This test method provides specific parameters for one application in order to present the proper procedures. Specific test conditions must be agreed upon by the customer and the vendor.

2 Applicable Documents

IPC-6012 Qualification and Performance Specification for Rigid Printed Boards

3 Test Specimen The preproduction or production printed wiring board.

4 Apparatus

4.1 Vibration A vibration system capable of producing an input of 25 G's over a frequency range from 20 Hz to 2000 Hz to 20 Hz performed in 16 minutes.

4.2 Mounting Fixtures

4.3 The test fixture must be designed such that resonant vibration inherent in the fixture within the frequency range specified for the test shall be minor. The magnitude of the applied vibration should be monitored on the test fixture near the specimen mounting points.

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4.4 The test specimen shall be restrained from movement by fixturing at all four edges and with the flat surface of the boards mounted perpendicular to the axis of vibration.

5 Test Procedures

5.1 The boards shall successfully pass the interconnection resistance test in accordance with IPC-6012 before and after the vibration test.

5.2 The boards shall be subjected to both a cycling and a resonance dwell test.

5.2.1 The cycling test shall consist of one sweep from 20 Hz to 2000 Hz to 20 Hz performed in 16 minutes. The input acceleration (G's) over the 20-2000-20 Hz frequency range shall be maintained at 15 G's.

5.2.2 The boards shall be subjected to a 30-minute resonance dwell with 25 G's input or a maximum of 100 G's output measured at the geometric center of the board.

5.3 Evaluation Examine boards for warp or delamination and interconnection resistance after exposure to the vibration test.

6 Notes None