JEDEC STANDARD

Resistance to Solder Shock for Through-Hole Mounted Devices

JESD22-B106E

(Revision of JESD22-B106D, April 2008)

NOVEMBER 2016

JEDEC SOLID STATE TECHNOLOGY ASSOCIATION

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Published by
©JEDEC Solid State Technology Association 2016
3103 North 10th Street
Suite 240 South
Arlington, VA 22201-2107

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TEST METHOD B106E

RESISTANCE TO SOLDER SHOCK FOR THROUGH-HOLE MOUNTED DEVICES

(From JEDEC Board Ballot JCB-98-98, JCB-05-12, JCB-08-09, and JCB-16-46, formulated under the cognizance of JC-14.1 Committee on Reliability Test Methods for Packaged Devices.)

1 Scope

This test method is used to determine whether solid state devices can withstand the effect of the temperature shock to which they will be subjected during soldering of their leads in a solderwave process and/or solder fountain (rework/replacement) process. The heat is conducted through the leads into the device package from solder heat at the reverse side of the board.

This test method shall not be used to simulate wave soldering of surface mount device packages that are glued onto the same side of the board as the solder wave and are fully submerged into the solder wave. The test method for simulating SMT devices through the wave is JESD22-A111, *Evaluation Procedure for Determining Capability to Bottom Side Board Attach by Full Body Solder Immersion of Small Surface Mount Solid State Devices*.

In order to establish a standard test procedure for the most reproducible methods, the solder dip method is used because of its more controllable conditions. This procedure will determine whether devices are capable of withstanding the soldering temperature encountered in printed wiring board assembly operations, without degrading their electrical characteristics or internal connections. This test is **destructive** and may be used for qualification, lot acceptance and as a product monitor.

2 Apparatus

2.1 Solder Pot

A solder pot of sufficient size to contain at least 0.91 kg (2 lbs.) of solder shall be used. Its dimensions shall allow immersion of the leads to the depth specified in 4.3 without touching the bottom of the pot. The apparatus shall be capable of maintaining the solder at the temperature specified in 4.2 at the location where the device leads make contact with the solder.

2.2 Dipping Device

A mechanical dipping device shall be used that is capable of controlling the rates of immersion and emersion of the leads and providing the dwell time specified in 4.3.