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Finite element model verification for packaged printed circuit board by experimental modal analysis[Print](#) [E-mail](#) [Add to Marked List](#) [Save to EndNote Web](#) [Save to EndNote, RefMan, ProCite](#) [more options](#)**Author(s):** Lee YC (Lee, Ying-Chih)^{1,2}, Wang BT (Wang, Bor-Tsuen)³, Lai YS (Lai, Yi-Shao)², Yeh CL (Yeh, Chang-Lin)⁴, Chen RS (Chen, Rong-Sheng)¹**Source:** MICROELECTRONICS RELIABILITY **Volume:** 48 **Issue:** 11-12 **Pages:** 1837-1846 **Published:** NOV-DEC 2008**Times Cited:** 0 **References:** 24 [Citation Map](#) *beta*

Abstract: In this work, the experimental modal analysis (EMA) was performed to establish an equivalent finite element (FE) model for a standard Joint Electron Device Engineering Council (JEDEC) drop test printed circuit board (PCB) mounted with packages in a full array. Material properties of the equivalent FE model of the packaged PCB were calibrated through an optimization process with respect to natural frequencies based on EMA results obtained with a free boundary condition. The model was then applied to determine screwing tightness of the packaged PCB corresponding to a fixed boundary condition with the four corners of the PCB constrained, as defined by JEDEC for a board-level drop test. Modal damping ratios of the packaged PCB were also provided. (C) 2008 Elsevier Ltd. All rights reserved.

Document Type: Article**Language:** English**KeyWords Plus:** CHIP-SCALE PACKAGES; VIBRATION FATIGUE; TRANSIENT ANALYSIS; SOLDER JOINT; DROP TEST;**Cited by: 0**

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