

SEMI G70-0996 (Reapproved 0811) STANDARD FOR EQUIPMENT AND LEADFRAME FIXTURES FOR MEASUREMENT OF PLASTIC PACKAGE LEADFRAMES

This Standard was technically approved by the global Assembly & Packaging Technical Committee. This edition was approved for publication by the global Audits and Reviews Subcommittee on July 1, 2011. Available at www.semiviews.org and www.semi.org in August 2011; originally published in 1996; previously published November 2004.

NOTICE: This Document was reapproved with minor editorial changes.

1 Purpose

1.1 This Standard describes the equipment and leadframe fixtures used for measurement of Z-axis dimensions of plastic package leadframes.

2 Scope

2.1 This Standard mainly describes the equipment and leadframe fixture for measurement of leadframes that are ≤ 0.15 mm in thickness as used for TSOP and TQFP packages listed in group II in Table 1.

2.2 This standard also may be applied for leadframe of conventional packages which are ≥ 0.2 mm in thickness.

Table 1 Package Classification

<i>Group I</i>	<i>Group II</i>
	SSOP
DIP	TSOP
ZIP	TSSOP
SOJ	QFP
SOP	TQFP
QFJ (PLCC)	LQFP
	SVP

NOTE 1: Packages should be classified by EIAJ and JEDEC specifications.

NOTICE: SEMI Standards and Safety Guidelines do not purport to address all safety issues associated with their use. It is the responsibility of the users of the Documents to establish appropriate safety and health practices, and determine the applicability of regulatory or other limitations prior to use.

3 Referenced Standards and Documents

3.1 SEMI Standards and Safety Guidelines

SEMI G57 — Guideline for Standardization of Leadframe Terminology

3.2 EIAJ Standard¹

ED-7411 — General Rules for the Preparation of Outline Drawings of Integrated Circuits, Packages Name and Code

3.3 JEDEC Standards²

JEDEC 95 — Registered and Standard Outlines for Semiconductor Devices

¹ Japan Electronics and Information Technology Industries Association, Ote Center Building, 1-1-3, Otemachi, Chiyoda-ku, Tokyo 100-0004, Japan; <http://www.jeita.or.jp>

² Joint Electron Device Engineering Council, 3103 North 10th Street, Suite 240-S, Arlington, VA 22201, USA; Telephone: 703.907.7560, Fax: 703.907.7583, <http://www.jedec.org>

NOTICE: Unless otherwise indicated, all documents cited shall be the latest published versions.

4 Terminology

4.1 Definitions

NOTE 2: See SEMI G57 for leadframe features terminology.

4.1.1 *burr height* — maximum height of burr above the plane which it protrudes (see Figure 1).

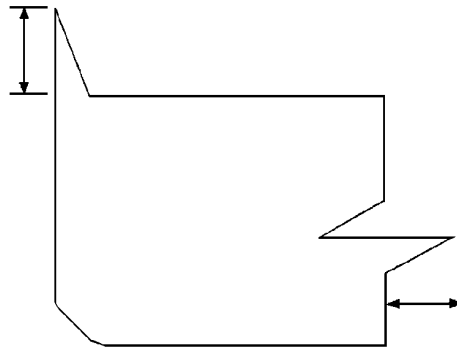


Figure 1
Burr Height

4.1.2 *coil set* — longitudinal bowing of the leadframe strip length (see Figure 2).

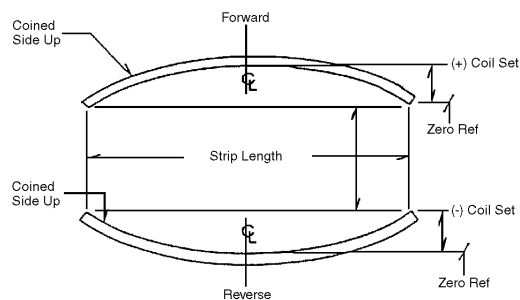


Figure 2
Coil Set

4.1.3 *coined depth* — the difference in height between the top surface of the coined area of an inner lead and the top surface of the coined area at the tip of the lead. Inner lead coining produces a flattened section of the lead that is suitable for wire bonding (see Figure 3).

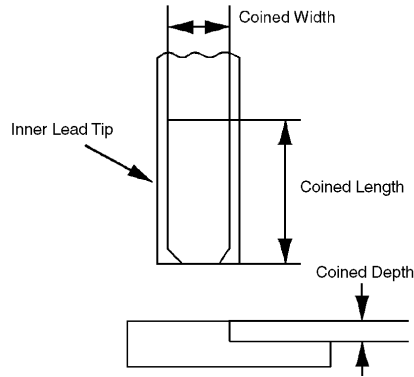


Figure 3
Coined Depth

4.1.4 *crossbow* — transverse bowing of the leadframe (see Figure 4).

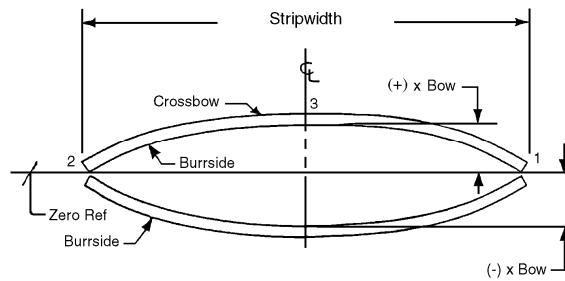


Figure 4
Crossbow

4.1.5 *die pad dimple* — a hollow formed in a die pad using a half-etching technique or stamping to improve the adhesive strength with the die or molding compound and to reduce the stress between the die pad and the die.

4.1.6 *die pad dimple depth* — the maximum depth of the dimple (see Figure 5).

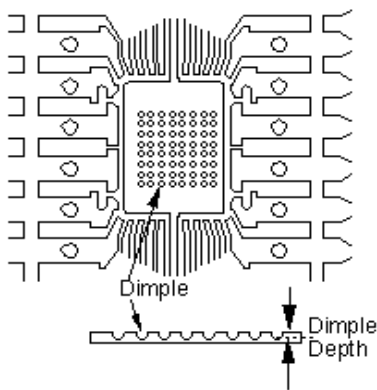


Figure 5
Die Pad Dimple Depth