SEMI G89-0211 (Reapproved 0318)
SPECIFICATION FOR LEADFRAME STRIP SIZE

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1 Purpose

1.1 The purpose of this Document is to standardize the strip size specification of leadframe. This defines the width and length of a leadframe strip.

2 Scope

2.1 This Specification is applicable to various types of quad flat package (QFP) leadframe strips, and small outline package (SOP) leadframe strips.

2.2 This Standard can be used as a specification when purchasing these leadframe.

2.3 The configuration of unit designs should be made per the IC chip information, so this Document does not cover the unit size design or configuration.

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 Limitations

3.1 Other dimensional requirement to strip design should be determined by the agreement between leadframe manufacturers and uses. This Specification defines only for the Strip Size.

4 Referenced Standards and Documents

4.1 *ASME Standard*[1]

ASME Y14.5-1994 — Geometric Dimensioning and Tolerancing

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

5 Terminology

5.1 *Abbreviations and Acronyms*

5.1.1 *QFP* — quad flat package

5.1.2 *SOP* — small outline package

5.1.3 *xQFP* — multi-type of QFP

5.1.4 *xSOP* — multi-type of SOP

5.2 *Definitions*

5.2.1 *number of unit* — quantity of a unit in one leadframe strip.

5.2.2 *package* — a finished form of semiconductor device that includes several materials such as encapsulant, wire, die attach material, interposer (metal or organic) and so on.

5.2.3 *package size* — three dimensional sizes (width, length, height) of a IC package body. In this Document, width, length and height are referred as package body size without leads.

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6 Requirements

6.1 *Drawing Conventions and Practices*

6.1.1 Controlling dimensions are millimeters (mm).

6.1.2 Specification and dimensions follow the convention of ASME Y14.5-1994.

6.1.3 Dimensions specified in ¶ 6.2 are designed nominal. The design nominal is the finished nominal.

6.2 *Strip Dimensions*

6.2.1 Nominal size of 70 mm (width) by 250 mm (length) shall be for standardization for both xQFP leadframe and xSOP leadframe.

6.2.2 Nominal size of 78 mm (width) by 250 mm (length) shall be only for package size 28 × 28 xQFP leadframe.

6.2.3 General tolerance of strip size shall be ±0.15 mm for both strip sizes.

6.3 *Layout of Unit Location*

6.3.1 Unit Layout in a strip shall be reference for design work per below mentioned. These values can be changed by the agreement between leadframe providers and their users at the individual business stage.

6.3.2 *xQFP Leadframe Strip Layout*

Table 1 xQFP Strip Size and Layout Dimension

Package Size	*Strip Size (Width × Length)*	*Number of Units*	*a*	*b*
7 × 7	70 × 250	5 × 15	16.700	12.750
10 × 10	70 × 250	4 × 12	20.850	16.000
12 × 12	70 × 250	3 × 10	25.000	23.000
14 × 14	70 × 250	3 × 10	25.000	21.500
14× 20	70 × 250	3 × 8	31.300	21.500
20× 20	70 × 250	2 × 8	31.300	31.000
24 × 24	70 × 250	2 × 7	35.800	33.000
28 × 28	78 × 250	2 × 6	41.750	36.800

6.3.3 *xSOP Leadframe Strip Layout*

6.3.3.1 Strip layout shall be determined by the users based on the package sizes.

6.3.4 *Outline of Leadframe Strip*

6.3.4.1 See Figure 1.

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