

SEMI G3-90

SPECIFICATION FOR SIDEBRAZED LAMINATES

This Standard was technically approved by the Assembly & Packaging Global Technical Committee. This edition was approved for publication by the global Audits and Reviews Subcommittee. Available at www.semi.org in 1990.

NOTICE: This Standard or Safety Guideline has an Inactive Status because the conditions to maintain Current Status have not been met. Inactive Standards or Safety Guidelines are available from SEMI and continue to be valid for use.

1 Preface

1.1 This Specification covers laminated ceramic sidebrazed packages of 7.62 mm (0.003 in.), 10.16 mm (0.400 in.), 15.24 mm (0.600 in.) and 22.86 mm (0.900 in.) nominal widths. The leadframe which is brazed to this type of package is included in this Specification.

2 Applicable Documents¹

2.1 The following applicable documents, of the revision currently in effect, are part of this Specification to the extent referenced herein.

MIL-STD-105 — Sampling Procedures and Tables for Inspection by Attributes

MIL-STD-883 — Test Methods and Procedures for Microelectronics

MIL-G-45204 — Gold Plating, Electro-Deposited

MIL-M-38510 — General Specification for Microcircuits

3 Terminology

3.1 Definitions

3.1.1 *burr* — an adherent fragment of excess parent material at the component edge.

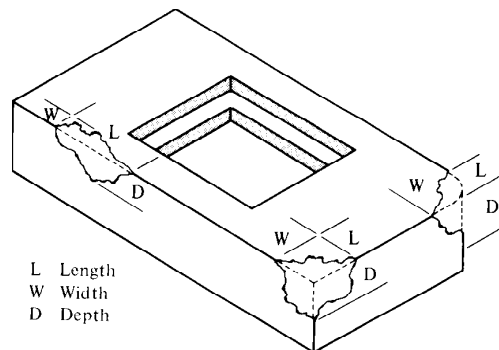


Figure 1
Chip Illustration

3.1.2 *chip* — a region of ceramic missing from the surface or edge of a package which does not go completely through the package. Chip size is given by its length, width and depth from a projection of the design plan-form (see Figure 1).

3.1.3 *crack* — a cleavage or fracture that extends to the surface of a package. It may or may not pass through the entire thickness of the package.

¹ United States Military Standards, Available through the Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120-5099, USA; Telephone: +1.215.697.3321.

3.1.4 *die attach surface* — see Figure 2.

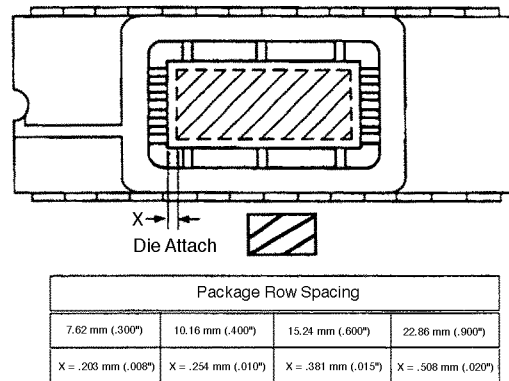


Figure 2
Die Attach Surface

3.1.5 *discoloration* — any change in the color of the package plating as detected by the unaided eye after the application of heat per § 9.1.1.

3.1.6 *foreign material* — an adherent particle other than parent material of that component.

3.1.7 *LSI* — large scale integration.

3.1.8 *layer* — a ceramic or metallized layer that performs a discrete function as a part of the package. Should a layer be comprised of more than one ceramic laminate, all of those laminates shall be considered as comprising one layer if all are common in both plan-form and function. Leadframes shall not be considered as layers.

3.1.9 *MSI* — medium scale integration.

3.1.10 *projection* — an adherent fragment of excess material on the component surface.

3.1.11 *pullback* — the linear distance between the edge of the ceramic and the first measurable metallization interface (see Figure 3).

3.1.12 *rundown* — see Figure 3.

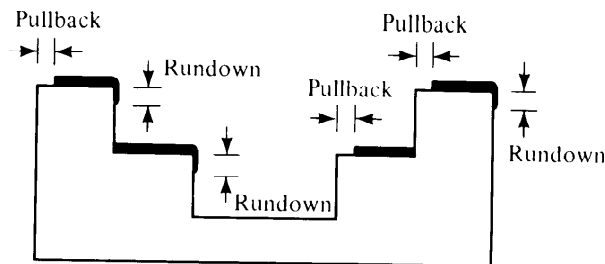


Figure 3
Metallization Misalignment

3.1.13 *SSI* — small scale integration.

3.1.14 *seal area* — a dimensional outline area designated for either metallization or bare ceramic to provide a surface area for sealing (see Figure 4).

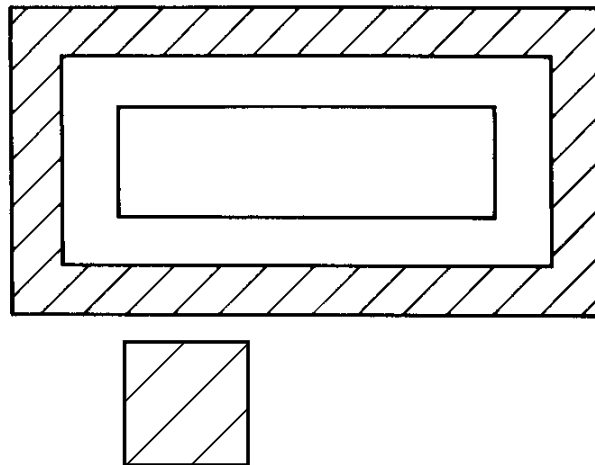
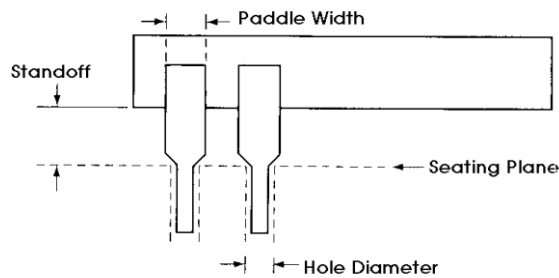


Figure 4
Seal Area

3.1.15 *seating plane* — see Figure 5.

3.1.16 *standoff* — residual air gap after inserting the leads into a ground steel plate with a specific size hole and applying a specified downward pressure (see Figure 5).



NOTE: When determining the seating plane a downward of 10 grams is to be applied to the package.

Figure 5
Leadframe Paddle Width and Standoff

3.1.17 *TIR* — total indicator reading.

3.1.18 *VLSI* — very large scale integration.

3.1.19 *void* — an absence of metallization or plating from a designated area.

4 Ordering Information

4.1 Purchase orders for sidebrazed laminated packages furnished to this Specification shall include the following items:

1. Drawing number and revision level
2. Number of leads and lead series spacing
3. Type and color of ceramic
4. Type and thickness of plating