

SEMI F102-0306

GUIDE FOR SELECTING SPECIFICATIONS FOR DIMENSION OF COMPONENTS FOR SURFACE MOUNT GAS DISTRIBUTION SYSTEMS

This standard was technically approved by the global Gases Committee. This edition was approved for publication by the global Audits and Reviews Subcommittee on November 29, 2005. It was available at www.semi.org in January 2006 and on CD-ROM in March 2006.

1 Purpose

1.1 This standard establishes the guide for selecting “SPECIFICATIONS FOR DIMENSION OF COMPONENTS FOR SURFACE MOUNT GAS DISTRIBUTION SYSTEMS”.

2 Scope

2.1 This standard applies to “Specifications For Dimension Of Components For Surface Mount Gas Distribution Systems” (SEMI F82, SEMI F83, SEMI F84, SEMI F85, SEMI F86, SEMI F87, SEMI F88, SEMI F89, SEMI F90, SEMI F91, SEMI F92, SEMI F93, SEMI F94, and SEMI F95).

NOTICE: This standard does not purport to address safety issues, if any, associated with its use. It is the responsibility of the users of this standard 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

SEMI F82 — Specification for Dimension of Mass Flow Controller/Mass Flow Meter for 1.125 Inch Type Surface Mount Gas Distribution Systems

SEMI F83 — Specification for Dimension of Two Port Components (Except MFC/MFM) for 1.125 Inch Type Two Fastener Configuration Surface Mount Gas Distribution Systems

SEMI F84 — Specification for Dimension of Three Port Components (Except MFC/MFM) for 1.125 Inch Type Two Fastener Configuration Surface Mount Gas Distribution Systems

SEMI F85 — Specification for Dimension of One Port Components for 1.125 Inch Type Four Fastener Configuration Surface Mount Gas Distribution Systems

SEMI F86 — Specification for Dimension of Two Port Components (Except MFC/MFM) for 1.125 Inch Type Four Fastener Configuration Surface Mount Gas Distribution Systems

SEMI F87 — Specification for Dimension of Three Port Components (Except MFC/MFM) for 1.125 Inch Type Four Fastener Configuration Surface Mount Gas Distribution Systems

SEMI F88 — Specification for Dimension of Standard Size Mass Flow Controllers and Mass Flow Meters for 1.5 Inch Type Surface Mount Gas Distribution Systems

SEMI F89 — Specification for Dimension of Compact Size Mass Flow Controllers and Mass Flow Meters for 1.5 Inch Type Surface Mount Gas Distribution Systems

SEMI F90 — Specification for Dimension of Standard Size Two Port Components (Except MFC/MFM) for 1.5 Inch Type Two Fastener Configuration Surface Mount Gas Distribution Systems

SEMI F91 — Specification for Dimension of Compact Size Two Port Components (Except MFC/MFM) for 1.5 Inch Type Two Fastener Configuration Surface Mount Gas Distribution Systems

SEMI F92 — Specification for Dimension of Compact Size Three Port Components for 1.5 Inch Type Two Fastener Configuration Surface Mount Gas Distribution Systems

SEMI F93 — Specification for Dimension of One Port Components for 1.5 Inch Type Four Fastener Configuration Surface Mount Gas Distribution Systems

SEMI F94 — Specification for Dimension of Two Port Components (Except MFC/MFM) for 1.5 Inch Four Fastener Configuration Type Surface Mount Gas Distribution Systems

SEMI F95 — Specification for Dimension of Three Port Components for 1.5 Inch Four Fastener Configuration Type Surface Mount Gas Distribution Systems

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

4 Explanation of 14 Standards

4.1 See Table 1 and 2, categorized by 1.25 Inch Type and 1.5 Inch Type.

4.2 These 14 Standards specify dimensions of components in surface mount gas distribution systems. Each component is mounted on a base block that is referred to as a substrate. Components may be used independently, but typically, they are rather mounted on a same or series of substrate(s) to make up a gas distribution line. These gas lines, in turn, comprise a surface mount gas distribution system.

4.3 A typical gas distribution line consists of valves, regulators, transducers, filters and mass flow controllers (MFCs). Dimensions of each component are specified in the following documents:

SEMI F82 — Specification for Dimension of Mass Flow Controller/Mass Flow Meter for 1.125 Inch Type Surface Mount Gas Distribution Systems

SEMI F83 — Specification for Dimension of Two Port Components (Except MFC/MFM) for 1.125 Inch Type Two Fastener Configuration Surface Mount Gas Distribution Systems

SEMI F84 — Specification for Dimension of Three Port Components (Except MFC/MFM) for 1.125 Inch Type Two Fastener Configuration Surface Mount Gas Distribution Systems

SEMI F85 — Specification for Dimension of One Port Components for 1.125 Inch Type Four Fastener Configuration Surface Mount Gas Distribution Systems

SEMI F86 — Specification for Dimension of Two Port Components (Except MFC/MFM) for 1.125 Inch Type Four Fastener Configuration Surface Mount Gas Distribution Systems

SEMI F87 — Specification for Dimension of Three Port Components (Except MFC/MFM) for 1.125 Inch Type Four Fastener Configuration Surface Mount Gas Distribution Systems

SEMI F88 — Specification for Dimension of Standard Size Mass Flow Controllers and Mass Flow Meters for 1.5 Inch Type Surface Mount Gas Distribution Systems

SEMI F89 — Specification for Dimension of Compact Size Mass Flow Controllers and Mass Flow Meters for 1.5 Inch Type Surface Mount Gas Distribution Systems

SEMI F90 — Specification for Dimension of Standard Size Two Port Components (Except MFC/MFM) for 1.5 Inch Type Two Fastener Configuration Surface Mount Gas Distribution Systems

SEMI F91 — Specification for Dimension of Compact Size Two Port Components (Except MFC/MFM) for 1.5 Inch Type Two Fastener Configuration Surface Mount Gas Distribution Systems

SEMI F92 — Specification for Dimension of Compact Size Three Port Components for 1.5 Inch Type Two Fastener Configuration Surface Mount Gas Distribution Systems

SEMI F93 — Specification for Dimension of One Port Components for 1.5 Inch Type Four Fastener Configuration Surface Mount Gas Distribution Systems

SEMI F94 — Specification for Dimension of Two Port Components (Except MFC/MFM) for 1.5 Inch Four Fastener Configuration Type Surface Mount Gas Distribution Systems

SEMI F95 — Specification for Dimension of Three Port Components for 1.5 Inch Four Fastener Configuration Type Surface Mount Gas Distribution Systems

NOTE 1: See the following documents for the below items:

- 1) 2-Way Valves: 1.125 inch type is specified in SEMI F83 and SEMI F86; 1.5 inch compact type is specified in SEMI F91; and 1.5 inch standard (large) type is specified in SEMI F90 and SEMI F94.
- 2) 3-Way Valves: 1.125 inch type is specified in SEMI F84 and SEMI F87; and 1.5 inch type is specified in SEMI F92 and SEMI F95.
- 3) Pressure Regulators: 1.125 inch type is specified in SEMI F83 and SEMI F86; and 1.5 inch type is specified in SEMI F90 and SEMI F94.
- 4) Filters: 1.125 inch type is specified in SEMI F83 and SEMI F86; and 1.5 inch type is specified in SEMI F90 and SEMI F94.