SEMI F117-1121
SPECIFICATION FOR DIMENSIONS OF SANDWICH COMPONENTS FOR 1.125 INCH TYPE SURFACE MOUNT GAS DISTRIBUTION SYSTEMS

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NOTICE: This Document replaces SEMI C88-0815.

1 Purpose

1.1 This Standard establishes the physical dimensions of filters, check valves, restrictors, port converters and other components for 1.125 inch type surface mount gas distribution systems.

2 Scope

2.1 This Standard applies to components that are installed in between a substrate and a component in a sandwich or stacked manner.

2.2 This Standard establishes standard dimensions to provide interchangeability for components of equivalent function.

2.3 This Standard applies to two and four fastener configurations.

2.4 This Standard only applies to components for systems which control flow of ≤50 slm nitrogen equivalent at 308 kPa (44.7 psia).

2.5 This Standard only applies to components with operating pressures less than 3445 kPa (500 psia) at 20°C.

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 This Standard only addresses the component; it does not address the seals, the sealing system, or the assembly process and does not guarantee the performance of the sealing system. The user should be aware that gas delivery system performance and sealing system performance are addressed elsewhere in the SEMI Standards.

3.2 International, national, and local codes, regulations, and laws should be consulted to ensure that the equipment meets regulatory requirements in each location of use.

4 Referenced Standards and Documents

4.1 None.

5 Terminology

5.1 *Abbreviations and Acronyms*

5.1.1 *kPa* — 1000 newton per square meter

5.1.2 *psia* — pound per square inch absolute

5.1.3 *slm* — standard liters per minute (at 101.3 kPa, 0.0°C [14.73 psia, 32°F])

5.2 *Definitions*

5.2.1 *components for surface mount* — a gas distribution system component having inlets and outlets located on the bottom of the component with the attachment mechanism accessible from the top.

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5.2.2 *four fastener configuration* — the component has four fasteners located on an interface, independent of number of sealing points.

5.2.3 *port converter* — a sandwich component that either changes the port count or port direction.

5.2.4 *sandwich component* — a gas distribution system component having inlets and outlets located on the top and bottom of the component with the attachment mechanism passing through the component.

5.2.5 *seal type converter* — a sandwich component that converts from one surface mount seal type to another.

5.2.6 *side port adapter* — a sandwich component that provides a tube stub protruding from the side.

5.2.7 *two fastener configuration* — the component has two fasteners per sealing point. The sealing point is located in the middle of the two fasteners.

6 Dimensional Requirements

6.1 *Thickness* — This Standard applies to the thickness of a sandwich component as illustrated in Figure 1.

6.2 *Adapters, Converters, Restrictors, and Check Valves*

6.2.1 Dimensional requirements for adapters, converters, restrictors, and check valves are specified in Table 1.

6.3 *Filters*

6.3.1 Dimensional requirements for filters are specified in Table 2 and are categorized by flow rate.

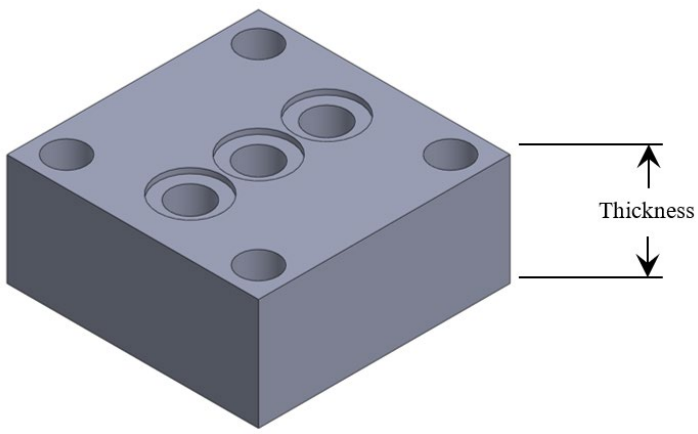

Figure 1
Representative Sandwich Component

Table 1 Adapters, Converters, Restrictors, and Check Valves

Component Type	*Component Thickness mm (inch)*
Port Converter	15.2 (0.60)
Seal Type Converter	15.2 (0.60)
Check Valve	15.2 (0.60)
Restrictor	7.6 (0.30)
Side Port Adapter	7.6 (0.30)

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