

SEMI M9.5-96^E STANDARD FOR ROUND 100 mm POLISHED MONOCRYSTALLINE GALLIUM ARSENIDE WAFERS FOR ELECTRONIC DEVICE APPLICATIONS

^E This standard was editorially modified in April 2006 to correct a typographical error. Changes were made to Table 2.

NOTE: This entire document was revised in 1995.

The complete specification for this product includes all general requirements of SEMI M9.

Table 1 Dimension and Tolerance Requirements

<i>Property</i>	<i>Dimension</i>	<i>Tolerance</i>	<i>Units</i>
DIAMETER ^A	100.0	±0.5	mm
THICKNESS, CENTER POINT	625	±25	μm
PRIMARY FLAT LENGTH	32.5	±2	mm
SECONDARY FLAT LENGTH	18	±2	mm

A The diameter standard means that the dimension is centered to this value.

Table 2 Orientation and Flat- Location Requirements

<i>Property</i>	<i>Requirement</i>
PRIMARY FLAT ORIENTATION	(011) ± 0.5° ^A , under an Arsenic facet. The primary flat shall be perpendicular to the “V” etch figure. ^B
SECONDARY FLAT ORIENTATION	90° ± 5° counterclockwise from the primary flat.
SURFACE ORIENTATION ^C	
A.	(100) ± 0.5° (See Figure 1 in SEMI M9.)
B.	(100) off 2° ± 0.5° toward the (110) plane which is between the primary and secondary flats (See Figure 3 in SEMI M9.)
ORTHOGONAL MISORIENTATION	±5° (See Figure 5 in SEMI M9).

A See Table 1 in SEMI M9.

B Using A-B, bromine-methanol, ammonium hydroxide: hydrogen peroxide etch. See Figures 1 and 3 in SEMI M9. Figure 1 also shows the orientation of the V-groove figures relative to KOH etch pits.

C The frame of reference is the (100) plane of the crystal. It is the wafer normal that is tilted toward the (110) plane of the crystal.

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