

SEMI M9.8-0306 (Reapproved 0812) SPECIFICATION FOR ROUND 200 mm POLISHED MONOCRYSTALLINE GALLIUM ARSENIDE WAFERS (NOTCHED)

This Standard was technically approved by the Compound Semiconductor Materials Global Technical Committee. This edition was approved for publication by the global Audits and Reviews Subcommittee on June 18, 2012. Available at www.semiviews.org and www.semi.org in August 2012; originally published March 2006.

1 Purpose

1.1 This Specification defines properties of 200 mm monocrystalline GaAs substrates. It uniquely defines those mechanical parameters that do not need, for technical reasons, a choice of different values.

2 Scope

2.1 The parameters defined include the values and tolerances of wafer diameter, thickness and surface orientation. The position and depth of the notch and the location of laser marking are also specified.

2.2 The complete Specification of this product includes the requirements of SEMI M9, excluding those that are not relevant to this Specification (e.g., flat positions).

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 Referenced Standards and Documents

3.1 SEMI Standards and Safety Guidelines

SEMI M9 — Specification for Polished Monocrystalline Gallium Arsenide Wafers

SEMI M12 — Specification for Serial Alphanumeric Marking of the Front Surface of Wafers

SEMI T5 — Specification for Alphanumeric Marking of Round Compound Semiconductor Wafers

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

4 Physical Requirements

Table 1 Physical Requirements

<i>Property</i>	<i>Specification</i>	<i>Tolerance</i>	<i>Unit</i>	<i>Reference</i>
WAFER				
Diameter	200.0	±0.5	mm	
Thickness, center point	675 (optional 625)	±25	µm	
Surface orientation	(100)	0.5 max.	degrees	Figure 2
Tilt	2 off (100) towards (110)	±0.5	degrees	Figure 3
Orthogonal misorientation	0	±5 max.	degrees	Figure 4
NOTCH				
Orientation (direction)	[010]	±2	degrees	Figure 1
Depth	1.0	+0.25, -0.0	mm	Figure 5
Opening angle	90	+5, -1	degrees	Figure 5
LASER MARKING				
Surface	front side			

Property	Specification	Tolerance	Unit	Reference
Position	adjacent to notch optional 45° cw from notch			Figure 6 Figure 7

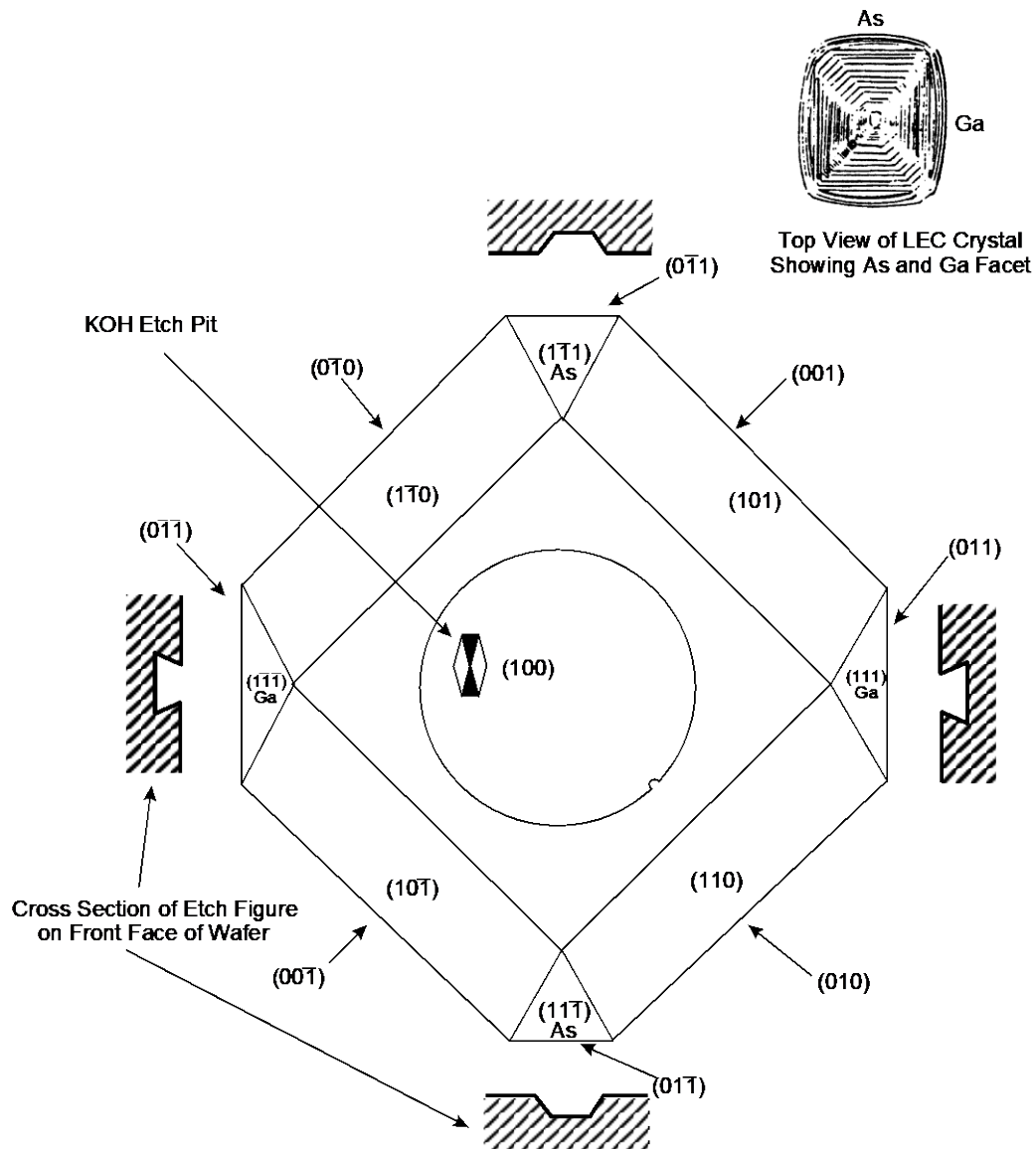


Figure 1
Diagram Shows a GaAs Wafer with Notch

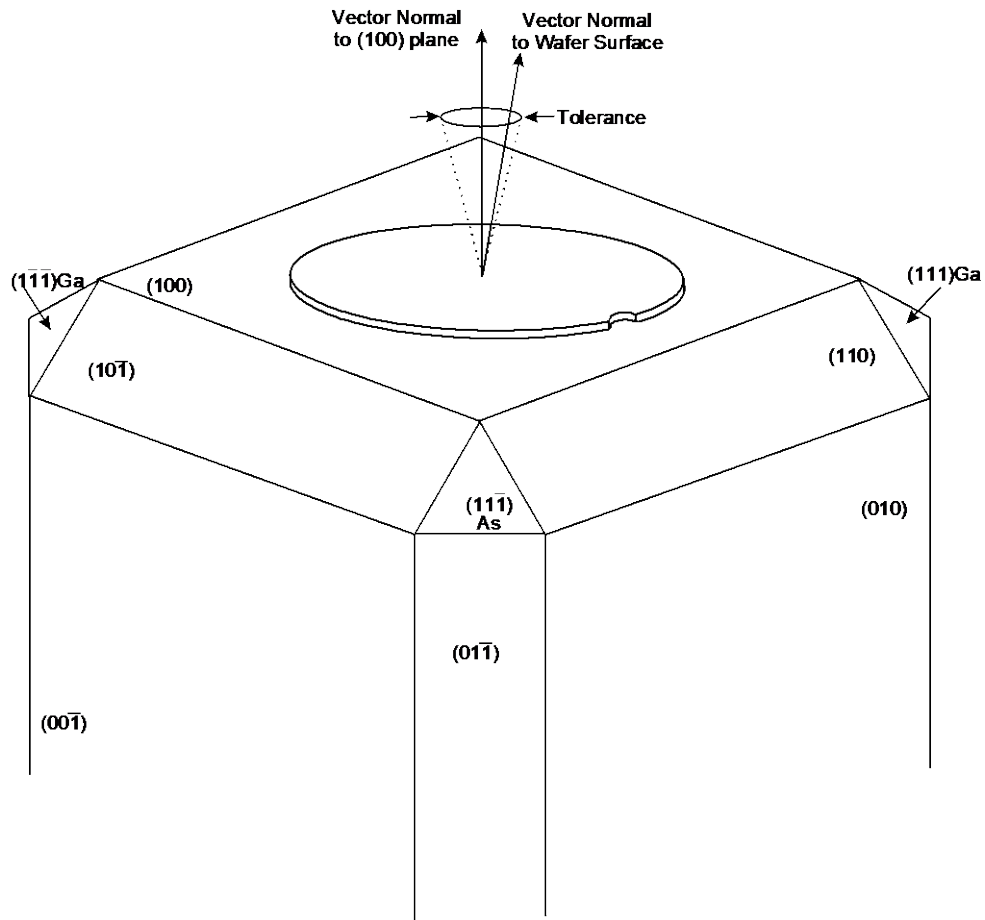


Figure 2
Notched GaAs Wafer Illustrating Surface Orientation