

# SEMI M9.7-0708

## SPECIFICATION FOR ROUND 150 mm POLISHED MONOCRYSTALLINE GALLIUM ARSENIDE WAFERS (NOTCHED)

This Standard was technically approved by the global Compound Semiconductor Technical Committee. This edition was approved for publication by the global Audits and Reviews Subcommittee on May 13, 2008. Available at [www.semiviews.org](http://www.semiviews.org) and [www.semi.org](http://www.semi.org) in July 2008; originally published in 1995; previously published February 2000.

### 1 Purpose

1.1 This Specification defines properties of 150 mm monocrystalline GaAs substrates, in agreement with presently established industry practice. 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 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 M12 — Specification for Serial Alphanumeric Marking of the Front Surface of Wafers

### 4 Physical Requirements

**Table 1 Physical Requirements**

| Property                  | Specification                   | Tolerance   | Unit    | Reference |
|---------------------------|---------------------------------|-------------|---------|-----------|
| <b>WAFER</b>              |                                 |             |         |           |
| Diameter                  | 150.0                           | ±0.5        | mm      |           |
| Thickness, center point   | 675                             | ±25         | μm      |           |
| Surface Orientation A     | (100)                           | 0.5 max.    | degrees | Figure 2  |
| Surface Orientation B     |                                 |             |         |           |
| Tilt                      | 2 off (100) towards (110)       | ±0.5        | degrees | Figure 3  |
| Orthogonal Misorientation | 0                               | ±5 max.     | degrees | Figure 4  |
| <b>NOTCH</b>              |                                 |             |         |           |
| Orientation               | [010]                           | ±2          | degrees | Figure 1  |
| Depth                     | 1.0                             | +0.25, -0.0 | mm      | Figure 5  |
| Opening Angle             | 90                              | +5, -1      | degrees | Figure 5  |
| <b>LASER MARKING</b>      |                                 |             |         |           |
| Surface                   | front side                      |             |         |           |
| Position A                | adjacent to notch               |             |         | Figure 6  |
| Position B                | 45 degrees clockwise from notch |             |         | Figure 7  |
| Mandatory Content         | check characters                |             |         | SEMI M12  |

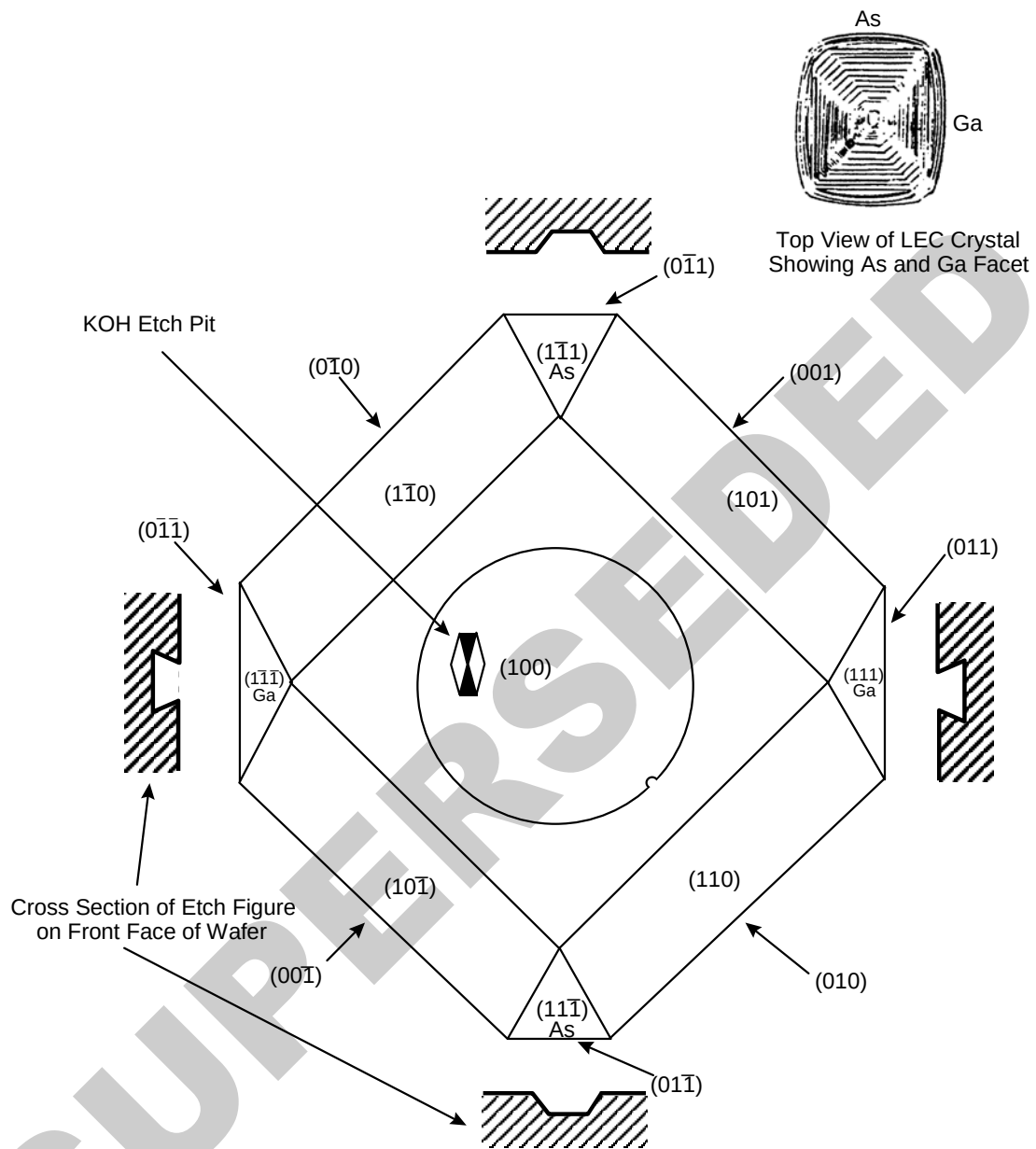


**Figure 1**  
**Diagram Shows a GaAs Wafer with Notch**

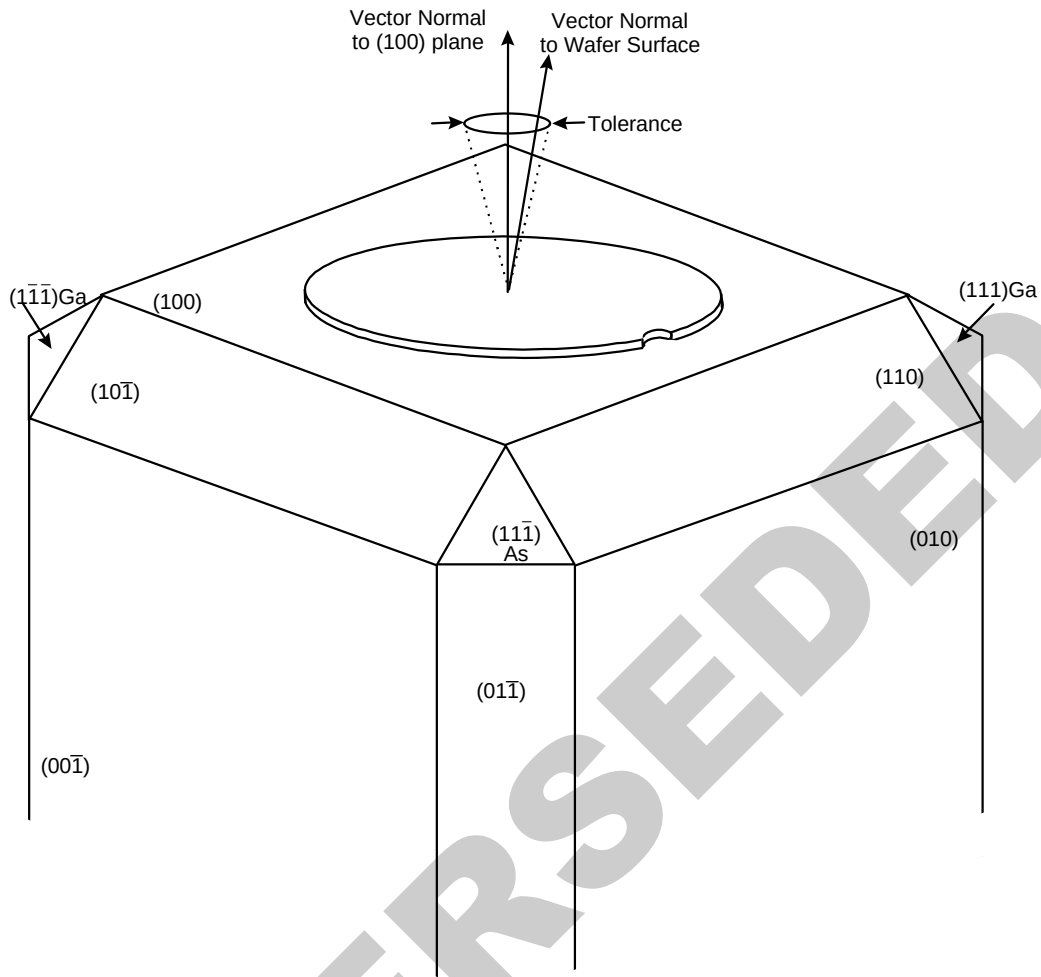


**Figure 2**  
**Notched GaAs Wafer Illustrating Surface Orientation A**