SEMI M23.1-0211 (Reapproved 0218)
SPECIFICATION FOR ROUND 50 mm DIAMETER POLISHED MONOCRYSTALLINE INDIUM PHOSPHIDE WAFERS

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 28, 2017. Available at www.semiviews.org and www.semi.org in February 2018; originally published in 1993; previously published February 2011.

1 Purpose

1.1 This Specification defines properties of round 50 mm monocrystalline indium phosphide wafers, 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.

2.2 The complete specification for this product includes all general requirements of SEMI M23, excluding those that are not relevant to this Specification.

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 M23 — Specification for Polished Monocrystalline Indium Phosphide Wafers

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

Table 1 Dimension and Tolerance Requirements

Property	*Dimension*	*Tolerance*	*Units*[#1]
Diameter	50.0	±0.5	mm
Thickness, Center Point			
A	350	±25	µm
B	450	±25	µm
Primary Flat Length	16	±2	mm
Secondary Flat Length	8	±2	mm
Bow	To be specified.		
Total Thickness Variation	To be specified.		

#1 For reference purposes, the metric (SI) units apply.

Table 2 Orientation and Flat Location Requirements

Property	*Requirement*
Option	Dove-Tail
Primary Flat Orientation	$(0\bar{1}1)$ ± 0.5°, under an indium facet. The primary flat shall be perpendicular to the 'Dove-tail' etch figure.
Secondary Flat Orientation	90 ± 5° clockwise from the primary flat.

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Property	*Requirement*
Surface Orientation	
A	{100} ± 0.5°
B	{100} off 2° ± 0.5° toward any {110} plane
Orthogonal Misorientation	±5°

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