

Record of Letter Ballot Review by TC Chapter for Procedural Review

Region/Locale: [Europe](#)
 Global Technical Committee: [Compound Semiconductor Materials](#)
 TC Chapter Cochair: [Arnd Weber \(SiCrystal\)](#)
 Standards Staff: [Kevin Nguyen](#)

	Scheduled in Background Statement	Actual
Date	TBD	April 29, 2021
Location	TBD	OVTCCM
Reason for Change of Date and/or Location (if changed)	COVID-19	

Note: See Regulations ¶ 9.5 Exceptions for allowable reason to change.

I. Document Number and Title

Document Number 6615	Document Title REVISION OF SEMI M55-0817, SPECIFICATION FOR POLISHED MONOCRYSTALLINE SILICON CARBIDE WAFERS
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II. Tally

Standards staff to fill in.

Voting Tally: As-cast tally after close of voting period

Note: A minimum of 60% of the Voting Interests that have TC Members within the global technical committee that issued the Letter Ballot must return Votes. (Regulations ¶ 9.6.2.1.1)

Voting Tally:

Voting Interest:	Returned Votes	Distribution	Return Rate	
Letter Ballot	71	÷ 95	= 74.7%	≥60%
Intercommittee Ballot	42			
Voting Interest Reject(s)	0	Total Voters with Rejects		0
Voting Interest Accept(s)	60			

Note: See Regulations § 3.2.1 for definition of Voting Interest.

III. Rejects

None

IV. Other Technical Issues

None

V. Comments

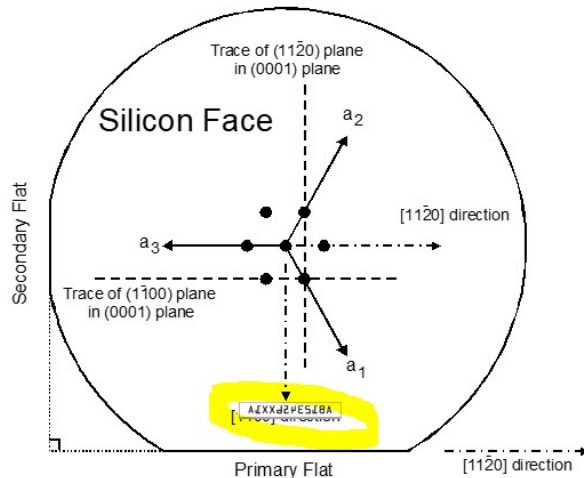
V- (i) Voters' Comments

Commenter 1 ([Toshimasa Yamamoto/DENSO](#)) - Comment 1

Comment	*TF/TC Chapter to fill in section/paragraph #, if necessary.	
	In Fig A2 -5, the "Lasemark" and "[11-00] Direction" characters immediately above the primary flat overlap and are therefore be difficult to read, so it should be moved.	
Action	The TC Chapter agreed to do one of the following actions.	
	*No motion is required in this step.	
	<input type="checkbox"/>	Already addressed by Commenter #, Comment #
	<input type="checkbox"/>	No further action was taken by the TC Chapter.
	<input type="checkbox"/>	Refer to the TF for more consideration.
	<input type="checkbox"/>	New Business
	<input checked="" type="checkbox"/>	Editorial Change
	Options for editorial change (check one)	<input type="checkbox"/> Case 1: No vote in this section: <i>To be included and voted on as a group in § VI. Editorial Changes Other than Those Voted on in § V.</i>
		<input checked="" type="checkbox"/> Case 2: Voted in this section: <i>Original section number and at least one full sentence are required in "FROM" and "TO" fields.</i>

Editorial Changes

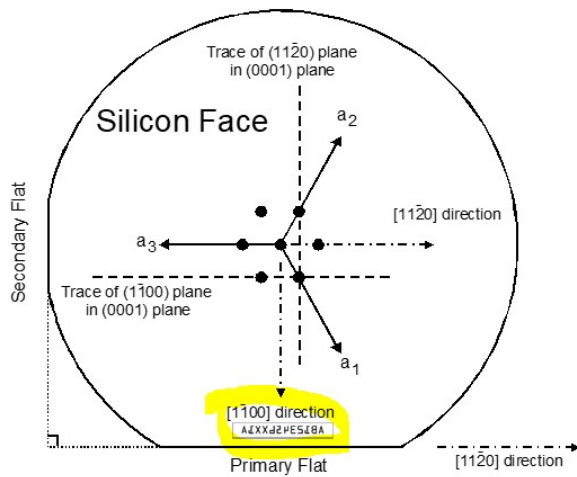
FROM: Figure A2-5



#1 For the exact dimensions and tolerances of primary and secondary flats see Tables A1-5 and A1-6, for those of lasermark see SEMI T5.

Figure A2-5
Relation of Lattice Sites, Crystallographic Planes and Flats (flat length not to scale)
The position of the secondary flat is shown for view on the silicon face.

TO: Figure A2-5



#1 For the exact dimensions and tolerances of primary and secondary flats see Tables A1-5 and A1-6, for those of lasermark see SEMI T5.

Figure A2-5
Relation of Lattice Sites, Crystallographic Planes and Flats (flat length not to scale)
The position of the secondary flat is shown for view on the silicon face.

Justification (If necessary)

Editorial. Formatting error. It is caused by MS Word, when switching off markup-display

Motion	To approve above editorial change(s)
Motion by/2nd by	By: Tom Barbieri / Cree, Inc. Second: Christian Kranert / Fraunhofer IISB
Discussion	None
Vote	7-Y 0-N; Motion passed.

Commenter 1 (Toshimasa Yamamoto/DENSO) - Comment 2

***TF/TC Chapter to fill in section/paragraph #, if necessary.**

The “Thickness "and" Edge Profile Coordinate ” options in the p 13 Table A1 -8 and p 14 Table A1 -9 are in a different order and **should be unified** if possible.

Option	Parameter	Value	Tolerance	Unit	Notes
Option 1	Thickness	350	±25	μm	Only for high power applications (HP)
	Edge Profile Coordinate Cy (see Table A1-5)	116		μm	T/3 Template
Option 2	Thickness	500	±25	μm	Only for high power applications (HP) and high frequency applications (HF)
	Edge Profile Coordinate Cy (see Table A1-5)	125		μm	T/4 Template

Table A1-9 Dimensional and Tolerance Characteristics of 200-mm Silicon Carbide Wafers

Change from

Option	Parameter	Value	Tolerance	Unit	Notes
Option 1 #1	Thickness	500	±25	μm	
	GMLYMER (Warp)	0	≤75	μm	For high power applications and high frequency applications Customer and supplier have to agree on chuck-layout and gravity correction
	Edge Profile Coordinate Cy (see Table A1-5)	125		μm	T/4 Template
Option 2 #1	Thickness	350	±25	μm	
	GMLYMER (Warp)	0	≤85	μm	For high power applications Customer and supplier have to agree on chuck-layout and gravity correction
	Edge Profile Coordinate Cy (see Table A1-5)	116		μm	T/3 Template

to

Option	Parameter	Value	Tolerance	Unit	Notes
Option1 #1	Thickness	350	±25	μm	
	GMLYMER (Warp)	0	≤85	μm	For high power applications Customer and supplier have to agree on chuck-layout and gravity correction
	Edge Profile Coordinate Cy (see Table A1-5)	116		μm	T/3 Template
Option2 #1	Thickness	500	±25	μm	
	GMLYMER (Warp)	0	≤75	μm	For high power applications and high frequency applications Customer and supplier have to agree on chuck-layout and gravity correction
	Edge Profile Coordinate Cy (see Table A1-5)	125		μm	T/4 Template

The TC Chapter agreed to do one of the following actions.

***No motion is required in this step.**

Already addressed by Commenter #, Comment #

No further action was taken by the TC Chapter.

Comment

Action

		Refer to the TF for more consideration.																																						
		New Business																																						
	x	Editorial Change																																						
Options for editorial change (check one)		Case 1: No vote in this section: To be included and voted on as a group in § VI. Editorial Changes Other than Those Voted on in § V.																																						
	x	Case 2: Voted in this section: Original section number and at least one full sentence are required in "FROM" and "TO" fields.																																						
Editorial Changes 1	FROM: Table A1-9 Dimensional and Tolerance Characteristics of 200-mm Silicon Carbide Wafers																																							
		<table border="1"> <thead> <tr> <th></th> <th><i>Property</i></th> <th><i>Dimension</i></th> <th><i>Tolerance</i></th> <th><i>Units</i></th> <th><i>Note</i></th> </tr> </thead> <tbody> <tr> <td rowspan="3">Option 1 #1</td> <td>Thickness</td> <td>500</td> <td>±25</td> <td>µm</td> <td></td> </tr> <tr> <td>GMLYMER (Warp)</td> <td>0</td> <td>≤75</td> <td>µm</td> <td>For high power applications and high frequency applications Customer and supplier have to agree on chuck-layout and gravity correction</td> </tr> <tr> <td>Edge Profile Coordinate C_y (see Table A1-5)</td> <td>125</td> <td></td> <td>µm</td> <td>T/4 Template</td> </tr> <tr> <td rowspan="3">Option 2 #1</td> <td>Thickness</td> <td>350</td> <td>±25</td> <td>µm</td> <td></td> </tr> <tr> <td>GMLYMER (Warp)</td> <td>0</td> <td>≤85</td> <td>µm</td> <td>For high power applications Customer and supplier have to agree on chuck-layout and gravity correction</td> </tr> <tr> <td>Edge Profile Coordinate C_y (see Table A1-5)</td> <td>116</td> <td></td> <td>µm</td> <td>T/3 Template</td> </tr> </tbody> </table>		<i>Property</i>	<i>Dimension</i>	<i>Tolerance</i>	<i>Units</i>	<i>Note</i>	Option 1 #1	Thickness	500	±25	µm		GMLYMER (Warp)	0	≤75	µm	For high power applications and high frequency applications Customer and supplier have to agree on chuck-layout and gravity correction	Edge Profile Coordinate C _y (see Table A1-5)	125		µm	T/4 Template	Option 2 #1	Thickness	350	±25	µm		GMLYMER (Warp)	0	≤85	µm	For high power applications Customer and supplier have to agree on chuck-layout and gravity correction	Edge Profile Coordinate C _y (see Table A1-5)	116		µm	T/3 Template
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	<p>#1 Thickness option 500µm is regarded as the recommended option. The option with thickness 350µm in combination with higher Warp values is intended for applications optimized for thinner substrates on the cost of a higher Warp specification, giving room for progress on the evolving market.</p> <p>#2 It is recommended to consider SFQR as an additional requirement by customer and supplier.</p>																																							

TO: Table A1-9 Dimensional and Tolerance Characteristics of 200-mm Silicon Carbide Wafers					
	<i>Property</i>	<i>Dimension</i>	<i>Tolerance</i>	<i>Units</i>	<i>Note</i>
Option 1 #1	Thickness	350	±25	µm	
	GMLYMER (Warp)	0	≤85	µm	For high power applications Customer and supplier have to agree on chuck-layout and gravity correction
	Edge Profile Coordinate C _y (see Table A1-5)	116		µm	T/3 Template
Option 2 #1	Thickness	500	±25	µm	
	GMLYMER (Warp)	0	≤75	µm	For high power applications and high frequency applications Customer and supplier have to agree on chuck-layout and gravity correction
	Edge Profile Coordinate C _y (see Table A1-5)	125		µm	T/4 Template
<p>#1 Thickness option 500µm is regarded as the recommended option. The option with thickness 350µm in combination with higher Warp values is intended for applications optimized for thinner substrates on the cost of a higher Warp specification, giving room for progress on the evolving market.</p> <p>#2 It is recommended to consider SFQR as an additional requirement by customer and supplier.</p> <p>Justification (if necessary) Editorial. To improve readability. Swap rows to match with previous table A1-8, so that 350 µm thickness appears before 500 µm</p>					
Motion	To approve above editorial change(s)				
Motion by/2nd by	By: Tom Barbieri / Cree, Inc. Second: Michael Buchweitz-Moenke / Infineon Technologies Austria AG				
Discussion	None				
Vote	6-Y 0-N; <i>Motion passed</i>				

Commenter 1 (Toshimasa Yamamoto/DENSO) - Comment 3

Comment	*TF/TC Chapter to fill in section/paragraph #, if necessary.	
	<p>Table of content Page 1 In List of Tables Table A1-6 , Delete “2 inch and” “Table A1-6 Dimensional and Tolerance Characteristics of 2-inch and 3-inch Silicon Carbide Wafers with Secondary Flat”</p>	
Action	The TC Chapter agreed to do one of the following actions.	
	*No motion is required in this step.	
		Already addressed by Commenter #, Comment #
	x	No further action was taken by the TC Chapter. Should be taken care by publication as table of content will be automatically updated.
	Refer to the TF for more consideration.	

<input type="checkbox"/>	New Business
<input type="checkbox"/>	Editorial Change

This table is needed for each Comment accompanied a Vote

Commenter 1 (Toshimasa Yamamoto/DENSO) - Comment 4

Comment	<p>*TF/TC Chapter to fill in section/paragraph #, if necessary.</p> <p>Page 12 In Table A1-6</p>																																																							
	<p>Table A1-6 Dimensional and Tolerance Characteristics of 2-inch and 3-inch Silicon Carbide Wafers with Secondary Flat</p> <table border="1"> <thead> <tr> <th rowspan="2">Nominal Diameter</th> <th colspan="2">50.8mm (2 inch)</th> <th colspan="3">76.2mm (3 inch)</th> <th rowspan="2">Note</th> </tr> <tr> <th>Dimension</th> <th>Tolerance</th> <th>Dimension</th> <th>Tolerance</th> <th>Units</th> </tr> </thead> <tbody> <tr> <td>Diameter</td> <td>50.8</td> <td>±0.25</td> <td>76.2</td> <td>±0.25</td> <td>mm</td> <td></td> </tr> <tr> <td>Primary Flat Length</td> <td>15.8</td> <td>±1.6</td> <td>22.0</td> <td>±2.0</td> <td>mm</td> <td></td> </tr> <tr> <td>Secondary Flat Length</td> <td>8.0</td> <td>±1.6</td> <td>11.0</td> <td>±1.5</td> <td>mm</td> <td></td> </tr> <tr> <td>GMLYMER (Warp)</td> <td>0</td> <td>≤25</td> <td>≤25</td> <td>≤25</td> <td>µm</td> <td></td> </tr> <tr> <td>GBIR (Total Thickness Variation)</td> <td>0</td> <td>≤10</td> <td>≤10</td> <td>≤15</td> <td>µm</td> <td></td> </tr> <tr> <td>SBIR (Local Thickness Variation)</td> <td>0</td> <td>≤5</td> <td>≤5</td> <td>≤5</td> <td>µm</td> <td></td> </tr> </tbody> </table>		Nominal Diameter	50.8mm (2 inch)		76.2mm (3 inch)			Note	Dimension	Tolerance	Dimension	Tolerance	Units	Diameter	50.8	±0.25	76.2	±0.25	mm		Primary Flat Length	15.8	±1.6	22.0	±2.0	mm		Secondary Flat Length	8.0	±1.6	11.0	±1.5	mm		GMLYMER (Warp)	0	≤25	≤25	≤25	µm		GBIR (Total Thickness Variation)	0	≤10	≤10	≤15	µm		SBIR (Local Thickness Variation)	0	≤5	≤5	≤5	µm	
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<p>76.2mm(3 inch)</p> <p>GMLYMER(Warp) Change Dimension from “≤25” to “0” and Tolerance From “≤25 “ to “≤25 “</p> <p>GBIR(Total Thickness Variation) Change Dimension from “≤10” to “0”</p> <p>SBIR(Local Thickness Variation) Change Dimension from “≤5” to “0” and Tolerance From “≤5 “ to “≤5 “</p>																																																								
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	Options for editorial change (check one)	<input type="checkbox"/>	<p>Case 1: No vote in this section:</p> <p>To be included and voted on as a group in § VI. Editorial Changes Other than Those Voted on in § V.</p>																																																					
	<input checked="" type="checkbox"/>	<p>Case 2: Voted in this section:</p> <p>Original section number and at least one full sentence are required in “FROM” and “TO” fields.</p>																																																						

FROM: Table A1-6 Dimensional and Tolerance Characteristics of 3-inch Silicon Carbide Wafers with Secondary Flat

<i>Nominal Diameter</i>	<i>76.2mm (3 inch)</i>			
<i>Property</i>	<i>Dimension</i>	<i>Tolerance</i>	<i>Units</i>	<i>Note</i>
Diameter	76.2	±0.25	mm	
Primary Flat Length	22.0	±2.0	mm	
Secondary Flat Length	11.0	±1.5	mm	
GMLYMER (Warp)	≤25		μm	
GBIR (Total Thickness Variation)		≤15	μm	
SBIR (Local Thickness Variation)	≤5		μm	
Thickness	350	±25	μm	For high power and high frequency applications (HP and HF)
Edge Profile Coordinate C _y (T/3 template) (see Table A1-5)	126		μm	

#1 Edge Profile Coordinate T/4 Template is not specified.

1

TO: Table A1-6 Dimensional and Tolerance Characteristics of 3-inch Silicon Carbide Wafers with Secondary Flat

<i>Nominal Diameter</i>	<i>76.2mm (3 inch)</i>			
<i>Property</i>	<i>Dimension</i>	<i>Tolerance</i>	<i>Units</i>	<i>Note</i>
Diameter	76.2	±0.25	mm	
Primary Flat Length	22.0	±2.0	mm	
Secondary Flat Length	11.0	±1.5	mm	
GMLYMER (Warp)	≤25	±2.5	μm	
GBIR (Total Thickness Variation)	0	≤15	μm	
SBIR (Local Thickness Variation)	≤5	±5	μm	
Thickness	350	±25	μm	For high power and high frequency applications (HP and HF)
Edge Profile Coordinate C _y (T/3 template) (see Table A1-5)	126		μm	

#1 Edge Profile Coordinate T/4 Template is not specified.

Justification (if necessary)

Formatting error. Restore original values. An error was introduced during the ballot preparation. The original table A1-6 shows these values (highlighted in yellow) below. The ballot inadvertently shifted these values.

Table A1-6 Dimensional and Tolerance Characteristics of 2-inch and 3-inch Silicon Carbide Wafers with Secondary Flat

<i>Nominal Diameter</i>	<i>50.8mm (2 inch)</i>		<i>76.2mm (3 inch)</i>			
<i>Property</i>	<i>Dimension</i>	<i>Tolerance</i>	<i>Dimension</i>	<i>Tolerance</i>	<i>Units</i>	<i>Note</i>
Diameter	50.8	±0.25	76.2	±0.25	mm	
Primary Flat Length	15.8	±1.6	22.0	±2.0	mm	
Secondary Flat Length	8.0	±1.6	11.0	±1.5	mm	
GMLYMER (Warp)	0	≤25	0	≤25	μm	
GBIR (Total Thickness Variation)	0	≤10	0	≤15	μm	
SBIR (Local Thickness Variation)	0	≤5	0	≤5	μm	
Thickness	250	±25	N/A	N/A	μm	For opto-electronic applicatio (OP)
	380	±25	350	±25	μm	For high power and high frequency applicatio (HP and HF)
Edge Profile Coordinate C_y (T/3 template) (see Table A1-5)	83		83		μm	For 250 μ thickness
	126		126		μm	For 380 μ thickness

#2 Edge Profile Coordinate T/4 Template is not specified.

Motion	To approve above editorial change(s)
Motion by/2nd by	By: Tom Barbieri / Cree, Inc. Second: Hans Christian Alt / Munich University
Discussion	None
Vote	6-Y 0-N; Motion passed.

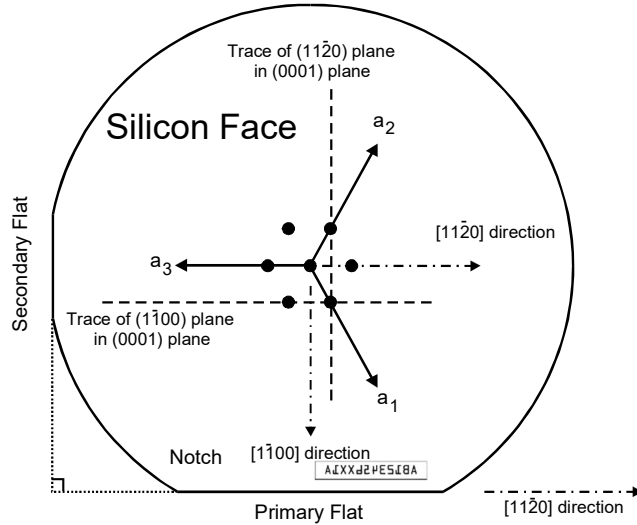
Commenter 1 (Toshimasa Yamamoto/DENSO) - Comment 5

Comment	<p>*TF/TC Chapter to fill in section/paragraph #, if necessary. Page 17 In Table A1-12</p>					
	<table border="1"> <tr> <td rowspan="2" style="text-align: center; vertical-align: middle;"><i>Resistivity*</i></td> <td>Conductive wafers See Table A1-2 for possible applications</td> <td>SEMI MF673#4</td> </tr> <tr> <td>High-resistivity or semi-insulating material See Table A1-2 for possible applications</td> <td>SEMI M87#4</td> </tr> </table> <p>As noted above, some characters in the table are missing.</p>		<i>Resistivity*</i>	Conductive wafers See Table A1-2 for possible applications	SEMI MF673#4	High-resistivity or semi-insulating material See Table A1-2 for possible applications
<i>Resistivity*</i>	Conductive wafers See Table A1-2 for possible applications	SEMI MF673#4				
	High-resistivity or semi-insulating material See Table A1-2 for possible applications	SEMI M87#4				
Action	<p>The TC Chapter agreed to do one of the following actions.</p>					
	<p>*No motion is required in this step.</p>					
	<input type="checkbox"/>	Already addressed by Commenter #, Comment #				
	<input type="checkbox"/>	No further action was taken by the TC Chapter.				
	<input type="checkbox"/>	Refer to the TF for more consideration.				
	<input type="checkbox"/>	New Business				
<input checked="" type="checkbox"/>	Editorial Change					
Options for editorial change (check one)	<input type="checkbox"/>	<p>Case 1: No vote in this section:</p> <p>To be included and voted on as a group in § VI. Editorial Changes Other than Those Voted on in § V.</p>				
	<input checked="" type="checkbox"/>	<p>Case 2: Voted in this section:</p> <p>Original section number and at least one full sentence are required in "FROM" and "TO" fields.</p>				
Editorial Changes	1	<p>FROM:</p> <p>Table A1-12 Test Methods for SiC Wafer Specification and Order Entry</p> <table border="1"> <tr> <td rowspan="2" style="text-align: center; vertical-align: middle;"><i>Resistivity*</i></td> <td>Conductive wafers See Table A1-2 for possible applications</td> </tr> <tr> <td>High-resistivity or semi-insulating material See Table A1-2 for possible applications</td> </tr> </table>	<i>Resistivity*</i>	Conductive wafers See Table A1-2 for possible applications	High-resistivity or semi-insulating material See Table A1-2 for possible applications	
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	High-resistivity or semi-insulating material See Table A1-2 for possible applications					
	<p>TO:</p> <p>Table A1-12 Test Methods for SiC Wafer Specification and Order Entry</p> <table border="1"> <tr> <td rowspan="2" style="text-align: center; vertical-align: middle;"><i>Resistivity*</i></td> <td>Conductive wafers See Table A1-2 for possible applications</td> </tr> <tr> <td>High-resistivity or semi-insulating material See Table A1-2 for possible applications</td> </tr> </table>	<i>Resistivity*</i>	Conductive wafers See Table A1-2 for possible applications	High-resistivity or semi-insulating material See Table A1-2 for possible applications		
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	High-resistivity or semi-insulating material See Table A1-2 for possible applications					
<p>Justification (If necessary) Editorial. Formatting error.</p>						
Motion	To approve above editorial change(s)					
Motion by/2nd by	By: Tom Barbieri / Cree, Inc. Second: Christian Kranert / Fraunhofer IISB					
Discussion	None					
Vote	6-Y 0-N; Motion passed.					

Commenter 1 (Toshimasa Yamamoto/DENSO) - Comment 6

Comment	<p>*TF/TC Chapter to fill in section/paragraph #, if necessary. Page 20 In Figure A2-5</p>			
	<p>NOTE #1 Change from “Tables A1-5 and A1-6” to “Tables A1-6, A1-7 and A1-8”.</p>			
Action	<p>The TC Chapter agreed to do one of the following actions.</p>			
	<p>*No motion is required in this step.</p>			
	<input type="checkbox"/>	Already addressed by Commenter #, Comment #		
	<input type="checkbox"/>	No further action was taken by the TC Chapter.		
	<input type="checkbox"/>	Refer to the TF for more consideration.		
	<input type="checkbox"/>	New Business		
	<input checked="" type="checkbox"/>	Editorial Change		
Editorial Changes	Options for editorial change (check one)	<input type="checkbox"/>	<p>Case 1: No vote in this section: To be included and voted on as a group in § VI. Editorial Changes Other than Those Voted on in § V.</p>	
		<input checked="" type="checkbox"/>	<p>Case 2: Voted in this section: Original section number and at least one full sentence are required in “FROM” and “TO” fields.</p>	
	1	FROM:	<div style="text-align: center;"> </div>	
		#1	<p>For the exact dimensions and tolerances of primary and secondary flats see Tables A1-5 and A1-6, for those of lasermark see SEMI T5.</p> <p>Figure A1-1 Relation of Lattice Sites, Crystallographic Planes and Flats (flat length not to scale) The position of the secondary flat is shown for view on the silicon face.</p>	

TO:



#1 For the exact dimensions and tolerances of primary and secondary flats see Tables A1-5-6 and A1-67, and A1-8 for those of lasermark see SEMI T5.

Figure A1-2
Relation of Lattice Sites, Crystallographic Planes and Flats (flat length not to scale)
The position of the secondary flat is shown for view on the silicon face.

Justification (If necessary)

Editorial. The primary and secondary flats are defined in the tables A1-6, A1-7, A1-8 for Wafer dimensions 76.2mm, 100mm, 150mm respectively. A1-5 (edge contour) is something completely different and would make no sense as a reference here.

Motion	To approve above editorial change(s)
Motion by/2nd by	By: Tom Barbieri / Cree, Inc. Second: Ulrich Kretzer / Freiberger Compound Materials GmbH
Discussion	None
Vote	6-Y 0-N; Motion passed.

V-(ii) Comments Created by Handling Negative None

VI. Editorial Changes Other than Those Voted on in § V

Original section/paragraph number and at least one full sentence are required in "FROM" and "TO" fields.

None other than above.

VII. Approval Conditions Check

VII. - (i). Approval Rate

APPROVAL CONDITION 1: All Negatives have been discussed and were withdrawn, found not related, found not persuasive, or addressed by a technical change. (*Regulations ¶ 9.6.2.1.2*)

APPROVAL CONDITION 2: At least 90% of the sum of valid Voting Interest Accept and Voting Interest Reject Votes must be Accept. (*Regulations ¶ 9.6.2.1.3*)

Note: If both approval conditions are not satisfied, the Document fails.

		Accepts		(Accepts + Valid Rejects)					
Approval Rate	=	60	/	60	=	100.0%		≥	90%

VII. – (ii) Approval Level (check one)

Note: See *Regulations § 9.6.2* for further information.

Globally Approved (No Ratification Ballot needed):

The Letter Ballot meets the Letter Ballot approval conditions for the global technical committee.

Need a Ratification Ballot:

The Letter Ballot meets the Letter Ballot approval conditions for the TC Chapter and a Ratification Ballot will be issued to validate technical changes.

VIII. Safety Check

Note: See *Regulations § 15* for further information.

Motion	<input checked="" type="checkbox"/>	This is not a Safety Document, when all safety-related information is removed, the Document is still technically sound and complete. (<i>Regulations ¶ 8.7.1</i>)
	<input type="checkbox"/>	This is a Safety Document, when all safety-related information is removed, the Document is not technically sound and complete. (<i>Regulations ¶ 8.7.2</i>)
	<input type="checkbox"/>	Safety Checklist (<i>Regulations ¶ 15.3</i>) is complete and has been included with the Document throughout the balloting process. (<i>Regulations ¶ 15.1.2</i>)
Motion by/2 nd by	By: Tom Barbieri / Cree, Inc. Second: Christian Kranert / Fraunhofer IISB	
Discussion	None	
Vote	6-Y 0-N; Motion passed	

IX. Intellectual Property (IP) Check

Note: This Letter Ballot may cover all or part of a Standard or Safety Guideline. Regardless of the coverage, this IP check applies to the entire Standard or Safety Guideline*. See Regulations § 16 for further information.

x	The TC Chapter meeting chair asked those participating, if they were aware of any patented technology that might be relevant (see <i>Regulations</i> ¶ 16.3.1.1) to the Standard or Safety Guideline; or, any copyrighted items or trademarks that are used/reproduced (see <i>Regulations</i> ¶ 16.4.1.2) in the Standard or Safety Guideline. (Also see, <i>Regulations</i> § 8.8)			
x	The question is NOT answered in affirmative (No potentially material patented technology or use/reproduction of copyrighted items/trademarks is known.)	GO TO SECTION X.		
	The question is answered in affirmative	Is any of the known IPs a patented technology?	Yes, at least one of them is a patented technology	GO TO IX (a) "Patented Technology" subsection
			No	GO TO IX (b) "Copyright items" subsection

IX(a) Patented Technologies subsection

IX(a1) Total numbers of Patented Technologies to be dealt with

# Fill number	(l) Known Patented Technology that might be relevant to the Standard/Safety Guideline	# Fill number	(m) Number of patented technologies first became known to the TC Chapter on or after the day of the issuance of this Letter Ballot	Postpone assessment of such patented technologies to be performed at the next scheduled TC Chapter meeting.
		# Fill number	(n) Number of patented technologies first became known to the TC Chapter before the day of the issuance of this Letter Ballot	GO TO IX (a2)

IX(a2) Assessment of disclosed patented technologies

Disclosed patented technology #1 (<i>Brief description, e.g., patent title and number</i>):		Date of Assessment (If different from the date of Letter Ballot adjudication) MM/DD/YYYY		
Is disclosed patented technology #1 found to be "might be material" to the Standard/Safety Guideline?	YES (It is a PMPT)	Is the use of this PMPT technically justified?	YES	PROCEED to assess NEXT one, or if this is the last one, GO TO IX(a3)
	NO		NO	The Document is failed and returned to the TF
	NO	No further action is needed for patented technology #1		

This table is needed for each disclosed patented technology.

IX(a3) LOA status check of PMPT of which inclusion assessed to be justified

LOA Status of PMPT #1					
Has an LOA for this patented technology been received from every owner ?		YES	PROCEED to check NEXT one, or if this is the last one, GO TO IX(b)		
		NO	MOTION	Ask ISC for special permission to publish.	
				Quit activity.	The Document is failed and returned to the TF
				Wait for LOA	PROCEED to check NEXT one, or if this is the last one, GO TO IX(b1)
			Motion by/ 2 nd by	Name (Company)/Name (Company)	
			Discussion	XXXX	
			Vote	XX Y-XX N; Motion passed (or failed)	

This table is needed for each PMPT of which inclusion assessed to be justified.

IX(b1) Total numbers of copyrighted items to be dealt with

# Fill number	(o) Known copyrighted items that are used or reproduced to the Standard/Safety Guideline	o > 0 There is at least one known copy righted items that might be relevant to the Standard/Safety Guideline	GO TO IX (b2)
		o = 0 There is no disclosed copyrighted item	GO TO IX (c)

IX(b2) Assessment of disclosed copyrighted items

Disclosed copyrighted item #1 (Brief description of its use in the Document):					
Is disclosed copyrighted item #1 used or reproduced in the Standard/Safety Guideline?		YES	Is the use/reproduction of this copyrighted item technically justified?	YES	PROCEED to assess NEXT one, or if this is the last one, GO TO IX(b3)
				NO	The Document is failed and returned to the TF
		NO	No further action is needed for copyrighted item #1		

This table is needed for each disclosed copyrighted item.

IX(b3) Copyright release status check of copyrighted item of which inclusion assessed to be justified

Copyright release Status of copyrighted item #1		
	YES	PROCEED to assess NEXT one, or if this is the last one, GO TO IX(c)

Has the copyright release been received from its owner ?.		NO	MOTION	Ask ISC for special permission to publish.	
				Quit activity.	The Document is failed and returned to the TF
				Wait for copyright release letter	PROCEED to check NEXT one, or if this is the last one, GO TO IX(c)
			Motion by/ 2 nd by	Name (Company)/Name (Company)	
			Discussion	XXXX	
			Vote	XX Y-XX N; Motion passed (or failed)	

This table is needed for each copyrighted item of which use/reproduction assessed to be justified.

IX(c) Assessment of disclosed (identified) trademark

Is there any trademark in the Standard/Safety Guideline?		YES	Is every instance of trademark use technically justified?	YES	GO TO IX(d)
				NO	The Document is failed and returned to the TF
				NO	GO TO IX(d)

IX(d) IP check completion condition check

The co-chair checks if any Patented Technologies first become known to the TC Chapter on or after the day of the issuance of this Letter Ballot? i.e., m>0 in IX(a1)		YES	Sections IX(a2) and IX(a3) shall be completed and recorded for such patented technologies at next scheduled meeting of the TC Chapter. Until then, the TC Chapter shall NOT go to X (making motion to pass/fail this Document) (see Regulations ¶ 16.4.1.2) Until then this Letter Ballot Review is on hold.
		NO	GO TO X

X. Action for This Document

Motion	<input type="checkbox"/>	This Document passed TC Chapter review as balloted and will be forwarded to the ISC A&R SC for procedural review.
	<input checked="" type="checkbox"/>	This Document passed TC Chapter review with editorial changes and will be forwarded to the ISC A&R SC for procedural review.
	<input type="checkbox"/>	This Document passed TC Chapter review with technical changes and with or without editorial changes and will be forwarded to the ISC A&R SC for procedural review. A Ratification Ballot will be issued to verify the technical changes.
	<input type="checkbox"/>	This Document failed TC Chapter review and will be returned to the TF for rework.
	<input type="checkbox"/>	This Document failed TC Chapter review and work will be discontinued.
Motion by/ 2 nd by	By: Tom Barbieri / Cree, Inc. Second: Christian Kranert / Fraunhofer IISB	
Discussion	None	
Vote	6-Y 0-N	
Final Action	<input checked="" type="checkbox"/>	Motion passed
	<input type="checkbox"/>	Motion failed

Note: If the use of PMPT or copyrighted item is justified by the TC Chapter, LOA or release form must be received before publication can proceed.