



Initial Product/Process Change Notification

Document #: IPCN25631Z

Issue Date: 27 Sep 2023

Title of Change:	Qualification of IGBT Technology onsemi Bucheon 8inch Fab in Korea									
Proposed Changed Material First Ship Date:	31 May 2024 or earlier if approved by customer									
Current Material Last Order Date:	N/A <i>Orders received after the Current Material Last Order Date expiration are to be considered as orders for new changed material as described in this PCN. Orders for current (unchanged) material after this date will be per mutual agreement and current material inventory availability.</i>									
Current Material Last Delivery Date:	N/A <i>The Current Material Last Delivery Date may be subject to change based on build and depletion of the current (unchanged) material inventory</i>									
Product Category:	Active components – Discrete components									
Contact information:	Contact your local onsemi Sales Office or Yoichi.Hoshina@onsemi.com									
PCN Samples Contact:	Contact your local onsemi Sales Office to place sample order. Sample requests are to be submitted no later than 45 days after publication of this change notification. Samples delivery timing will be subject to request date, sample quantity and special customer packing/label requirements.									
Additional Reliability Data:	Contact your local onsemi Sales Office or Marco.kang@onsemi.com									
Type of Notification:	This is an Initial Product/Process Change Notification (IPCN) sent to customers. An IPCN is an advance notification about an upcoming change and contains general information regarding the change details and devices affected. It also contains the preliminary reliability qualification plan. The completed qualification and characterization data will be included in the Final Product/Process Change Notification (FPCN). This IPCN notification will be followed by a Final Product/Process Change Notification (FPCN) at least 6 months prior to implementation of the change. In case of questions, contact < PCN.Support@onsemi.com >.									
Change Category										
Category	Type of Change									
Process - Wafer Production	Move of all or part of wafer fab to a different location/site/subcontractor, New wafer diameter									
Equipment	Production from a new equipment/tool which uses the same basic technology (replacement equipment or extension of existing equipment pool) without change of process.									
Description and Purpose:										
This IPCN announces the planned IGBT fab site change to onsemi Korea 8inch Fab from onsemi Korea 6inch Fab. And also change wafer size to 200mm(8inch) from 150mm(6inch), Everything is the same specification except diameter for raw wafer material. Other wafer back side processes and probes have been compatible with both before, so there is no change.										
<table><tr><th></th><th>From</th><th>To</th></tr><tr><td>Fab Site</td><td>onsemi, Bucheon, Korea 6inch Fab</td><td>onsemi, Bucheon, Korea 8inch Fab</td></tr><tr><td>Wafer size</td><td>150 mm, Si Epitaxial wafer N type</td><td>200 mm, Si Epitaxial wafer N Type</td></tr></table>			From	To	Fab Site	onsemi, Bucheon, Korea 6inch Fab	onsemi, Bucheon, Korea 8inch Fab	Wafer size	150 mm, Si Epitaxial wafer N type	200 mm, Si Epitaxial wafer N Type
	From	To								
Fab Site	onsemi, Bucheon, Korea 6inch Fab	onsemi, Bucheon, Korea 8inch Fab								
Wafer size	150 mm, Si Epitaxial wafer N type	200 mm, Si Epitaxial wafer N Type								
Reason / Motivation for Change:	Source/Supply/Capacity Changes Process/Materials Change, Capacity improvement									
Anticipated impact on fit, form, function, reliability, product safety or manufacturability:	The device will be qualified and validated based on the same Product Specification. No anticipated impacts.									



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Sites Affected:

onsemi Sites

onsemi Bucheon, Korea

External Foundry/Subcon Sites

None

Marking of Parts/ Traceability of Change:

Changed material can be identified by lot code.

Reliability Data Summary:

QV DEVICE NAME : FGB20N60SFD-F085

RMS: 89258, O90297, K90915, S89749

PACKAGE: D2PAK-3

Test	Reference Specification	Condition	End Read Point
HTGB	JESD22-A108	TA=150C for 1008hours, Vgss Bias = +20V	1008hrs
HTRB	ACE-Q101	TA=145C(Tj=150C), bias = 480V (80% of rated V)	1008hrs
HTSL	JESD22-A103	250C for 1008 hours	1008hrs
(PC+)uHAST	JESD22-A118	TA = 130C, RH=85%, PSIG= 18.8, unbiase	96 hrs
(PC+)HAST	JESD22-A110	TA= 130C, RH=85%, PSIG= 18.8, 42V bias	96 hrs
(PC+)IOL	JESD22-A118	Ta=+25°C, deltaTj=100°C max, on/off=3.5min	8572cyc
(PC+)TC	AEC-Q101	Ta= -55°C to +150°C	1000 cyc
RSH	AEC-Q101	265°C Immersion	Initial Electrical

QV DEVICE NAME : FGM3N60LSDTM

RRF: 91779, 91402

PACKAGE: DPAK-3

Test	Reference Specification	Condition	End Read Point
HTGB	JESD22-A108	TA=150C for 1008hours, Vgss Bias = +25V	1008hrs
HTRB	ACE-Q101	TA=150C(Tj=150C), bias = 600V	1008hrs
HTSL	JESD22-A103	150C for 1008 hours	1008hrs
(PC+)uHAST	JESD22-A118	TA = 130C, RH=85%, PSIG= 18.8, unbiase	96 hrs
(PC+)HAST	JESD22-A110	TA= 130C, RH=85%, PSIG= 18.8, 42V bias	96 hrs
(PC+)IOL	JESD22-A118	Ta=+25°C, deltaTj=100°C max, on/off=3.5min	15000cyc
(PC+)TC	AEC-Q101	Ta= -55°C to +150°C	1000 cyc
RSH	AEC-Q101	265°C Immersion	Initial Electrical

QV DEVICE NAME : FGB40N65SPD-F085

RRF: not yet

PACKAGE: D2PAK-3

Test	Reference Specification	Condition	End Read Point
HTGB	JESD22-A108	TA=175C for 1008hours, Vgss Bias = +20V	1008hrs
HTRB	ACE-Q101	TA=175C(Tj=175C), bias = 650V	1008hrs
HTSL	JESD22-A103	175C for 1008 hours	1008hrs
(PC+)THU	JESD22-A118	Temp.=85C, RH=85%, PSIG= ~ 33.3, unbiase	96 hrs
(PC+)H3TRB	JESD22-A110	TA= 85C, RH=85%, PSIG= ~ 33.3, bias=520V	96 hrs



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(PC+)IOL	JESD22-A118	Ta=+25°C, deltaTj=100°C max	8572cyc
(PC+)TC	AEC-Q101	Ta= -55°C to +175°C	1000 cyc
RSH	AEC-Q101	265°C Immersion	Initial Electrical

Estimated date for qualification completion: November 24, 2023

Electrical Characteristics Summary:

Electrical characteristics are not impacted.

List of Affected Parts:

Note: Only the standard (off the shelf) part numbers are listed in the parts list. Any custom parts affected by this PCN are shown in the customer specific PCN addendum in the PCN email notification, or on the [PCN Customized Portal](#).

Current Part Number	New Part Number	Qualification Vehicle
AFGHL40T65SPD	NA	AFGB40T65SPD-BW
FGB40T65SPD-F085	NA	AFGB40T65SPD-BW
FGD3N60LSDTM	NA	FGD3N60LSDTM
FGH40N60SMD-F085	NA	FGB20N60SFD-F086
FGB20N60SFD-F085	NA	FGB20N60SFD-F085

Appendix A: Changed Products

PCN#: IPCN25631Z
Issue Date: Sep 27, 2023

DIKG: DIGI-KEY

Product	Customer Part Number	Qualification Vehicle	New Part Number	Replacement Supplier
AFGHL40T65SPD		AFGB40T65SPD-BW	NA	
FGB40T65SPD-F085		AFGB40T65SPD-BW	NA	
FGD3N60LSDTM		FGD3N60LSDTM	NA	
FGH40N60SMD-F085		FGB20N60SFD-F086	NA	
FGB20N60SFD-F085		FGB20N60SFD-F085	NA	