Final Product/Process Change Notification

Document #: FPCN23775ZI
Issue Date: 14 Dec 2022

Title of Change:	S08FL and u8FL Wettable Flank with Dummy Tie Bar Approach & Removal of Dry Pack Process for Automotive MOSFET Devices.
Proposed Changed Material First Ship Date:	21 Jun 2023 or earlier if approved by customer
Current Material Last Order Date:	N/A *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*.
Current Material Last Delivery Date:	N/A *The Current Material Last Delivery Date may be subject to change based on build and depletion of the current (unchanged) material inventory*
Product Category:	Active components – Discrete components
Contact information:	Contact your local onsemi Sales Office or Ammar.Anuar@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.
Sample Availability Date:	23 Dec 2022
PPAP Availability Date:	23 Dec 2022
Additional Reliability Data:	Contact your local onsemi Sales Office or MohdAzizi.Azman@onsemi.com
Type of Notification:	This is a Final Product/Process Change Notification (FPCN) sent to customers. The change will be implemented at 'Proposed Change Material First Ship Date' in compliance to J-STD-46 or ZVEI, or earlier upon customer approval, or per our signed agreements. onsemi will consider this proposed change and it's conditions acceptable, unless an inquiry is made in writing within 45 days of delivery of this notice. To do so, contact PCN.Support@onsemi.com.

Change Category

Category	**Type of Change**
Packing/Shipping	Dry pack requirements change
Process - Assembly	Move of all or part of assembly to a different location/site/subcontractor., Change in leadframe dimensions, Change of specified assembly process sequence (deletion and/or additional process step)

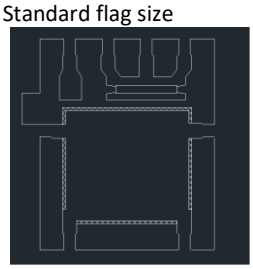
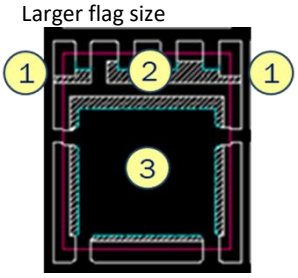
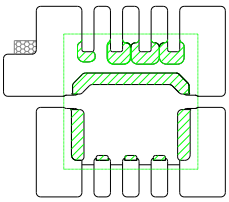
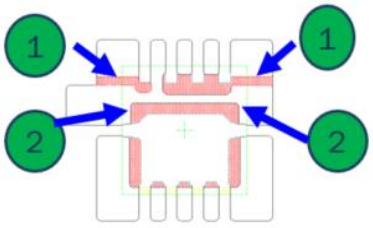
Description and Purpose:

This Product Change Notification is intended to inform the customer that the Wettable Flank leadframe design and plating process are being enhanced, as tabulated below, in order to improve the sidewall plating and the elimination of Dry Pack.

There is no change to the orderable part number.

There is no product marking change as a result of this change.

	Before Change	**After Change**
Wettable Flank Plating Site	Metek, Malaysia (Sub-con)	onsemi Seremban, Malaysia
S08FL Lead Frame design	1. No tie bar connect to the gate and source lead	1. Additional tie bar connect to gate and source lead

	2. Upset lead design 3. Standard flag size 	2. Flat lead design 3. Larger flag size 
S08FL Case Outline	488AA	507BA
S08FL Dimension "L1" in case outline	0.125mm	0.15mm
u8FL Lead Frame design	1. No tie bar connect to the gate abd source lead 2. Chamfer flag. 	1. Additional tie bar connect to gate and source lead 2. Removed chamfer 
u8FL Case Outline	511AB	515AN
u8FL Dimension "L" in case outline	0.30mm – 0.56mm	0.30mm – 0.59mm
Sidewall Plating Method	Electroless SN plating	Electrolytic SN plating
Packing	Drypack (MSL 1)	No Drypack (MSL 1)

Reason / Motivation for Change:	Source/Supply/Capacity Changes Process/Materials Change
Anticipated impact on fit, form, function, reliability, product safety or manufacturability:	The device has been qualified and validated based on the same Product Specification. The device has successfully passed the qualification tests. Potential impacts can be identified, but due to testing performed by onsemi in relation to the PCN, associated risks are verified and excluded. No anticipated impacts.

Sites Affected:	
onsemi Sites	**External Foundry/Subcon Sites**
onsemi Seremban, Malaysia	None

Marking of Parts/ Traceability of Change:	Material will be traceable with onsemi lot trace code & tracking

Reliability Data Summary:

QV DEVICE NAME (u8FL PACKAGE QUAL): NVTFS6H850N
RMS: 64634,65635,65199,64753,66669
PACKAGE: u8FL

Test	Specification	Condition	Interval	Results
HTSL	JESD22-A103	Ta = 175 °C	2016 hrs	0/231
HAST	JESD22 A110	130°C/85% RH ~18.8 psig, bias = 80% of rated V or up to maximum 100V	192 hrs	0/231
TC+PC	JESD22-A104	Ta = -55°C to +150°C	1000 cyc	0/231
UHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs	0/231
IOL+PC	MIL STD750, M 1037 AEC Q101	Ta=+25°C, deltaTj=100°C max, Ton = Toff = 2min	30000 cyc	0/231
PC	J-STD-020 JESD-A113	MSL 1 @ 260 °C		0/924
RSH	JESD22-B106	Ta = 265°C, 10 sec		0/90
SD	JSTD002	Ta = 245°C, 10 sec		0/45

QV DEVICE NAME (S08FL PACKAGE QUAL): NVMFS5830NL
RMS: 67654, 68461, 68052
PACKAGE: u8FL

Test	Specification	Condition	Interval	Results
HTRB	MILSTD750-1	Tj= 175°C, V=100% rated V	1008 Hrs	0/231
HTGB	JESD22 A108	Tj= 175°C, Vgs=100%,	1008 Hrs	0/231
HTSL	JESD22 A103	Ta= 175°C	2016 Hrs	0/231
TC + PC	JESD22 A104	Ta = -55°C to +150°C	1000 cyc	0/231
UHAST	JESD22 A118	Ta=130C, 85% RH, ~18.8 psig, no bias	96 hrs	0/231
HAST + PC	JESD22 A110	130C/85%RH, ~18.8 psig, 80% rated V	192 hours	0/231
IOL + PC	MIL-STD-750	Ta=25C DeltaTj=100C°, t(on)=t(off)= 2 min	30000 cyc	0/231
RSH	JESD22 B106	Ta = 265°C, 10 sec		0/90
SD	J-STD-002 , B102	Ta = 245°C, 10 sec		0/45

QV DEVICE NAME (S08FL HEFET PACKAGE QUAL): NVMFS6H800NL
RMS: 67648, 68458, 68050
PACKAGE: u8FL

Test	Specification	Condition	Interval	Results
HTRB	MILSTD750-1	Tj= 175°C, V=100% rated V	1008 Hrs	0/231
HTGB	JESD22 A108	Tj= 175°C, Vgs=100%,	1008 Hrs	0/231
HTSL	JESD22 A103	Ta= 175°C	2016 Hrs	0/231
TC + PC	JESD22 A104	Ta = -55°C to +150°C	1000 cyc	0/231
UHAST	JESD22 A118	Ta=130C, 85% RH, ~18.8 psig, no bias	96 hrs	0/231
HAST + PC	JESD22 A110	130C/85%RH, ~18.8 psig, 80% rated V	192 hours	0/231
IOL + PC	MIL-STD-750	Ta=25C DeltaTj=100C°, t(on)=t(off)= 2 min	30000 cyc	0/231
RSH	JESD22 B106	Ta = 265°C, 10 sec		0/90
SD	J-STD-002 , B102	Ta = 245°C, 10 sec		0/45

Note AEC-1pager is attached.

To view attachments:
1. Download pdf copy of the PCN to your computer
2. Open the downloaded pdf copy of the PCN
3. Click on the paper clip icon available on the menu provided in the left/bottom portion of the screen to reveal the Attachment field
4. Then click on the attached file.

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
NVTFS4C06NWFTWG	NA	NVTFS6H850NWFTAG
NVMFS5C682NLWFT3G	NA	NVMFS6H800NLWFT1G, NVMFS5830NLWFT1G
NVMFS5C682NLWFAFT3G	NA	NVMFS6H800NLWFT1G, NVMFS5830NLWFT1G
NVMFS5C673NLWFAFT1G	NA	NVMFS6H800NLWFT1G, NVMFS5830NLWFT1G
NVMFS5C638NLWFT1G	NA	NVMFS6H800NLWFT1G, NVMFS5830NLWFT1G
NVMFS5C612NWFT1G	NA	NVMFS6H800NLWFT1G, NVMFS5830NLWFT1G