Final Product/Process Change Notification

Document #:FPCN24342Z
Issue Date:04 Jan 2022

Title of Change:	Changing wire bond from 0.8 mil Au to 0.8 mil Pd-coated Cu for JFETs assembled in SOT-23. Increasing top metal thickness to 20KA support this change as well
Proposed Changed Material First Ship Date:	14 Jul 2022 or earlier if approved by customer
Current Material Last Order Date:	14 Apr 2022 *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:	13 Jul 2022 *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 Andy.Tao@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:	31 Jan 2022
PPAP Availability Date:	31 Jan 2022
Additional Reliability Data:	Contact your local onsemi Sales Office or c.l.yang@lps.com.cn
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
Bare Die	New / change of frontside metallization
Process - Assembly	Change of wire bonding

Description and Purpose:

onsemi is notifying customers of its use of 0.8 mils Pd-coated Cu wire for JFET devices assembled in SOT-23 at onsemi Leshan, China facility. The change requires wafer top metal thickness increase from 15 KÅ AlSi to 20 KÅ AlSi. Upon the expiration of this PCN, these devices will be built with 0.8 mils Pd-coated Cu wire and will use the thicker top at the same site. Datasheet specifications and product electrical performance remain unchanged. Reliability Qualification and full electrical characterization over temperature has been performed.

	Before Change Description	After Change Description
Bond Wire	0.8 mils Au wire	0.8 mils PD-coated Cu wire
Wafer top metal	15KA AlSi	20KA AlSi

Reason / Motivation for Change:	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**
Leshan Phoenix Semiconductor, China	None
onsemi Roznov, Czech Republic	

Marking of Parts/ Traceability of Change:	At the expiration of this PCN devices will be assembled with 0.8 mils PD-coated Cu wire at onsemi existing Leshan facility. Products assembled with 0.8 mils PD-coated Cu wire from the onsemi facility will have a Finish Goods Date Code of WW24 2022 or greater.

Reliability Data Summary:

QV DEVICE NAME : SMMBFJ177LT1G
RMS: 79236
PACKAGE: SOT23

Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108	Ta=150°C, 100% max rated V	1008 hrs	0/231
HTGB	JESD22-A108	Ta=150°C, 100% max rated Vgss	1008 hrs	0/231
HTSL	JESD22-A103	Ta=150°C	2016 hrs	0/231
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off = 2 min	30K cyc	0/231
TC	JESD22-A104	Ta= -65°C to +150°C	2000 cyc	0/231
HAST	JESD22-A110	130°C, 85% RH, 18.8psig, bias	192 hrs	0/231
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs	0/231
PC	J-STD-020 JESD-A113	MSL 1 @ 260 °C	-	-
RSH	JESD22- B106	Ta = 265C, 10 sec	-	0/30
SD	JSTD002	Ta = 245C, 5 sec	-	0/30

QV DEVICE NAME : SMMBF4393LT1G
RMS: 79238
PACKAGE: SOT23

Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108	Ta=150°C, 100% max rated V	1008 hrs	0/77
HTGB	JESD22-A108	Ta=150°C, 100% max rated Vgss	1008 hrs	0/77
HTSL	JESD22-A103	Ta=150°C	2016 hrs	0/77
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off = 2 min	30K cyc	0/77
TC	JESD22-A104	Ta= -65°C to +150°C	2000 cyc	0/77
HAST	JESD22-A110	130°C, 85% RH, 18.8psig, bias	192 hrs	0/77
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs	0/77
PC	J-STD-020 JESD-A113	MSL 1 @ 260 °C	-	-
RSH	JESD22- B106	Ta = 265C, 10 sec	-	0/30
SD	JSTD002	Ta = 245C, 5 sec	-	0/10

NOTE: AEC 1 Pager are 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:

Full characterization and ESD performance meet datasheet specification. Detail of electrical characterization result is available upon request.

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
SMMBFJ309LT1G	N/A	SMMBF4393LT1G
SMMBFJ175LT1G	N/A	SMMBFJ177LT1G
SMMBF4393LT1G	N/A	SMMBF4393LT1G
SMMBFJ177LT1G	N/A	SMMBFJ177LT1G