ON Semiconductor®

Final Product/Process Change Notification

Document #: FPCN23318ZA
Issue Date: 09 Sep 2020

Title of Change:	Bare Cu wire to Pd-coated Cu wire conversion; And Nitto GE200 to Henkel GR640 molding compound conversion for transistor devices assembled in ON Semi Leshan facility.
Proposed Changed Material First Ship Date:	10 Sep 2021 or earlier if approved by customer
Current Material Last Order Date:	31 May 2021 *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:	09 Sep 2021 *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 ON Semiconductor Sales Office or Andy.Tao@onsemi.com
PCN Samples Contact:	Contact your local ON Semiconductor Sales Office to place sample order or PCN.samples@onsemi.com 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:	15 Oct 2020
PPAP Availability Date:	15 Oct 2020
Additional Reliability Data:	Contact your local ON Semiconductor Sales Office or ffvf9f@onsemi.com
Type of Notification:	This is a Final Product/Process Change Notification (FPCN) sent to customers. FPCNs are issued 12 months prior to implementation of the change or earlier upon customer approval. ON Semiconductor 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
Process - Assembly	Change of mold compound, Change of wire bonding

Description and Purpose:

Upon the expiration of this PCN, these devices will be built with 0.8mils Pd-coated Cu wire &Henkel GR640 HV mold compound 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 bare Cu wire	0.8 mils Pd-coated Cu wire
Mold compound	Hitach GE200F	Henkel GR640 HV

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 ON Semiconductor in relation to the PCN, associated risks are verified and excluded. No anticipated impacts.

Sites Affected:

ON Semiconductor Sites	**External Foundry/Subcon Sites**
Leshan Phoenix Semiconductor, China	None

Marking of Parts/ Traceability of Change:	Products assembled with 0.8mils Pd-coated Cu wire & Henkel GR640 HV mold compound from ON Semiconductor Leshan facility will have a Finish Goods Date Code of WW17, 2021or later.

Reliability Data Summary:

QV DEVICE NAME: BCX19LT1G
RMS: 29666
PACKAGE: SOT23

Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108	Ta=150°C, 100% max rated V	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	Temp= +130°C, RH=85% , p = ~18.8 psig, bias	192 hrs	0/231
AC	JESD22-A102	121°C, 100% RH, ~15psig, 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: MMBT2907ALT1G
RMS: 29668
PACKAGE: SOT23

Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108	Ta=150°C, 100% max rated V	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	Temp= +130°C, RH=85% , p = ~18.8 psig, bias	192 hrs	0/231
AC	JESD22-A102	121°C, 100% RH, ~15psig, 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: SMMBTA56WT1G
RMS: 63111
PACKAGE: SC70

Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108	Ta=150°C, 100% max rated V	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	110°C, 85% RH, 3psig, bias	528 hrs	0/231
uHAST	JESD22-A118	110°C, 85% RH, 3psig, unbiased	264 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: MMBTA06WT1G
RMS: 63113
PACKAGE: SC70

Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108	Ta=150°C, 100% max rated V	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	110°C, 85% RH, 3psig, bias	528 hrs	0/231
uHAST	JESD22-A118	110°C, 85% RH, 3psig, unbiased	264 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

Note: AEC-1pager is attached.

To access file attachments on pdf copy of PCN, please be guided by the steps below:

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/s*

Electrical Characteristics Summary:

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

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
NSVBC817-40WT1G	N/A	MMBTA06WT1G
NSVMMBT5401WT1G	N/A	SMMBTA56WT1G
NSVMMUN2137LT1G	N/A	MMBT2907ALT1G
NSVMMUN2231LT1G	N/A	BCX19LT1G
NSVMMUN2236LT1G	N/A	BCX19LT1G
NSVMMUN2237LT1G	N/A	BCX19LT1G

Appendix A: Changed Products

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Product	Customer Part Number	Qualification Vehicle	New Part Number	Replacement Supplier
NSVBC817-40WT1G		MMBTA06WT1G		