



Initial Product/Process Change Notification

Document #: IPCN25507Z

Issue Date: 17 May 2023

Title of Change:	Qualification of onsemi ISMF Fab (Malaysia) for Small Signal Transistor housed in SOT723 and SC74 package
Proposed Changed Material First Ship Date:	01 Jun 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 farrah.omar@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 ChangKit.Mok@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	New / change of metallization (specifically chip frontside), Move of all or part of wafer fab to a different location/site/subcontractor
Process - Assembly	Change of lead frame finishing material / area (internal), Change of wire bonding



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Description and Purpose:

This is the Initial Notification by onsemi notifying customers of its plan to qualify small signal bipolar junction transistor devices at onsemi ISMF fab (Malaysia) housed in SC74 and SOT723 package. onsemi ISMF fab has been an existing qualified manufacturing site for onsemi which is certified with IATF16949. onsemi ISMF fab qualification includes of changing top metal from AlSiCu to AlSi + TiW for devices in SC74 package.

In addition to this, onsemi Leshan (China) is making changes to the leadframe plating area from Ag plated to Cu plated as well as changing Au wire to Cu wire for devices in SC74 package.

	From	To
Fab Site	JS Foundry, Japan	onsemi ISMF, Malaysia
Top Metal	SOT723: No change SC74: AlSiCu	SOT723: No change SC74: AlSi + TiW
LeadFrame	SOT723: No change SC74: Ag plated L/F	SOT723: No change SC74: Cu plated L/F
Bond Wire	SOT723: No change SC74: 1.3mil Au wire	SOT723: No change SC74: 1.3mil Cu wire

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

Reason / Motivation for Change: Cost 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.

Sites Affected:

onsemi Sites	External Foundry/Subcon Sites
onsemi Leshan, China	None
onsemi, ISMF Malaysia	

Marking of Parts/ Traceability of Change: Changed material can be identified by lot code

Reliability Data Summary:

QV DEVICE NAME: NSV60101DMR6T1G

RMS: 88094

PACKAGE: SC74-6L

Test	Specification	Condition	Interval
High Temperature Reverse Bias	JESD22-A108	Ta=150°C, 100% max rated V	1008 hrs
High Temperature Storage Life	JESD22-A103	Ta= 150°C	1008 hrs
Preconditioning	J-STD-020 JESD-A113	MSL1 @260 °C	-
Intermittent Operating Life	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off =2 min	15,000 cyc
Temperature Cycling	JESD22-A104	Ta= -55°C to +150°C	1000 cyc
Highly Accelerated Stress Test	JESD22-A110	110°C, 85% RH, 17.7 psia, bias	264 hrs
Unbiased Highly Accelerated Stress Test	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs
Resistance to Solder Heat	JESD22- B106	Ta = 265°C, 10 sec	-



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QV DEVICE NAME: NSVMMBT5401M3T5G

RMS: 88095

PACKAGE: SOT723-3L

Test	Specification	Condition	Interval
High Temperature Reverse Bias	JESD22-A108	Ta=150°C, 100% max rated V	1008 hrs
High Temperature Storage Life	JESD22-A103	Ta= 150°C	1008 hrs
Preconditioning	J-STD-020 JESD-A113	MSL1 @260 °C	-
Intermittent Operating Life	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off =2 min	15,000 cyc
Temperature Cycling	JESD22-A104	Ta= -55°C to +150°C	1000 cyc
Highly Accelerated Stress Test	JESD22-A110	110°C, 85% RH, 17.7 psia, bias	264 hrs
Unbiased Highly Accelerated Stress Test	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs
Resistance to Solder Heat	JESD22- B106	Ta = 265°C, 10 sec	-

Estimated date for qualification completion: WW44

Electrical Characteristics Summary:

Electrical characteristics will be performed and updated per FPCN.

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
NSV60101DMR6T2G	NA	NSV60101DMR6T1G
NSV60101DMR6T1G	NA	NSV60101DMR6T1G
NSVMMBT5401M3T5G	NA	NSVMMBT5401M3T5G