



Final Product/Process Change Notification

Document #:FPCN24244XB

Issue Date:14 Dec 2022

Title of Change:	Qualification of onsemi ISMF fab (Malaysia) and consolidation of Assembly and Test site operations of Small Signal diode devices in SOT-23 packages.
Proposed First Ship date:	22 Mar 2023 or earlier if approved by customer
Contact Information:	Contact your local onsemi Sales Office or Hiroshi.Koizumi@onsemi.com
PCN Samples Contact:	Contact your local onsemi Sales Office. Sample requests are to be submitted no later than 30 days from the date of first notification, Initial PCN or Final PCN, for this change. 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 Nicky.Siu@onsemi.com
Type of Notification:	This is a Final Product/Process Change Notification (FPCN) sent to customers. FPCNs are issued 90 days prior to implementation of the change. onsemi will consider this change accepted, unless an inquiry is made in writing within 30 days of delivery of this notice. To do so, contact PCN.Support@onsemi.com
Marking of Parts/ Traceability of Change:	Product marking follows onsemi marking format / Changed material can be identified by lot code.
Change Category:	Test Change, Assembly Change, Wafer Fab Change
Change Sub-Category(s):	Datasheet/Product Doc change, Material Change, Manufacturing Site Transfer

Sites Affected:

onsemi Sites	External Foundry/Subcon Sites
onsemi Leshan, China	JCET, China
onsemi, ISMF Malaysia	

Description and Purpose:

This is the final notification of onsemi plan to consolidate assembly & test site to Leshan Phoenix Semiconductor, China and JCET, China and wafer fab site from Phenittec Semiconductor, Japan to onsemi Seremban, Malaysia on the impacted devices. This change, initiated from the Phenittec HD fab closure, ensures continuity of supply for our customers. All receiving sites are ISO/TS16949:2009 certified

Qualification tests are designed to show that the reliability of the transferred devices will continue to meet or exceed onsemi standard.

	Before Change Description	After Change Description
Assembly/Test Site	onsemi, Cebu, Philippines Leshan Phoenix Semiconductor, China AUK Corporation JCET,China	Leshan Phoenix Semiconductor, China JCET,China
Wafer FAB /BG/BM Site	Phenittec Semiconductor, Japan	onsemi Seremban, Malaysia
Top metal	Al	AlSi
Back metal	TiNiAgSn	Au
Lead Frame	Ag plated LF	Cu plated LF (Leshan) Ag Plated LF (JCET)
Bond wire	0.8mil Au	0.8mil bare Cu (Leshan) 0.8mil Pd-coated Cu (JCET)
Mold Compound	CK5000A EDALE ELER-8-100HFE Sumitomo G600FB	Hysol GR640 HV (Leshan) ELER-8-100HFE (JCET)



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MMBD12xx series also include datasheet VF and IR limits adjustment from the results of characterization data of onsemi Seremban new die.

Symbol	Condition	Current		Proposed	
		Min	Max	Min	Max
VF	IF=1mA	550mV	600mV	540mV	600mV
	IF=10mA	660mV	740mV	No change	
	IF=100mA	820mV	920mV	800mV	950mV
	IF=200mA	870mV	1000mV	840mV	1100mV
	IF=300mA	-	1100mV	-	1250mV
IR	VR=20V	-	25nA	No change	
	VR=50V	-	50nA	-	100nA
	VR=50V, TA=150C	-	100uA	No change	

There is no datasheet change in MMBD1404A.

Reliability Data Summary:

QV DEVICE NAME: MMBD1504A

RMS: 77130

PACKAGE: SOT-23

Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108	Ta=150°C, 100% max rated V	1008 hrs	0/240
HTSL	JESD22-A103	Ta= 150°C	1008 hrs	0/240
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off = 2 min	15,000 cyc	0/240
TC	JESD22-A104	Ta= -65°C to +150°C	1000 cyc	0/240
H3TRB	JESD22-A101	85°C, 85% RH bias	1008hrs	0/240
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs	0/240
PC	J-STD-020, JESD22-A113	MSL 1 @ 260 °C		Pass
RSH	JESD22- B106	Ta = 265°C, 10 sec		0/30
SD	J-STD-002	Ta = 245°C, 5 sec		0/45



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QV DEVICE NAME: BAV23S

RMS: 63413

PACKAGE: SOT-23

Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108	Ta=150°C, 100% max rated V	1008 hrs	0/240
HTSL	JESD22-A103	Ta= 150°C	1008 hrs	0/240
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off = 2 min	15,000 cyc	0/240
TC	JESD22-A104	Ta= -65°C to +150°C	1000 cyc	0/240
HAST	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hrs	0/240
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs	0/240
PC	J-STD-020, JESD22-A113	MSL 1 @ 260 °C		Pass
RSH	JESD22- B106	Ta = 265°C, 10 sec		0/30
SD	J-STD-002	Ta = 245°C, 5 sec		0/45

Electrical Characteristics Summary:

The temperature characterization meets 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](#).

Part Number	Qualification Vehicle
MMBD1404A	MMBD1504A, BAV23S
MMBD1205	MMBD1504A, BAV23S
MMBD1204	MMBD1504A, BAV23S
MMBD1203	MMBD1504A, BAV23S
MMBD1201	MMBD1504A, BAV23S

Appendix A: Changed Products

PCN#: FPCN24244XB
Issue Date: Dec 14, 2022

DIKG: DIGI-KEY

Product	Customer Part Number	Qualification Vehicle	New Part Number	Replacement Supplier
MMBD1404A		MMBD1504A, BAV23S	NA	
MMBD1204		MMBD1504A, BAV23S	NA	
MMBD1203		MMBD1504A, BAV23S	NA	
MMBD1201		MMBD1504A, BAV23S	NA	
MMBD1205		MMBD1504A, BAV23S	NA	