



# Initial Product/Process Change Notification

Document #: IPCN25066X

Issue Date: 14 Dec 2022

<b>Title of Change:</b>	D2PAK Assembly and Test Qualification to Suzhou Goodark Co. Ltd., China for Capacity Expansion.
<b>Proposed First Ship date:</b>	01 Jun 2023 or earlier if approved by customer
<b>Contact Information:</b>	Contact your local onsemi Sales Office or <a href="mailto:ChoonHuey.Wang@onsemi.com">ChoonHuey.Wang@onsemi.com</a>
<b>PCN Samples Contact:</b>	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.
<b>Type of Notification:</b>	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 90 days prior to implementation of the change. In case of questions, contact < <a href="mailto:PCN.Support@onsemi.com">PCN.Support@onsemi.com</a> >
<b>Marking of Parts/ Traceability of Change:</b>	Products from Good-ark will be marked with site code “g” prior to date code
<b>Change Category:</b>	Test Change, Assembly Change
<b>Change Sub-Category(s):</b>	Manufacturing Site Addition

**Sites Affected:**

onsemi Sites	External Foundry/Subcon Sites
None	Good-Ark, China

**Description and Purpose:**

This Product Change Notification is to announce qualification of D2PAK assembly and test sites at Good-Ark, China.

Estimated date for qualification completion: 1 March 2023. After completion of qualification, the Final PCN will process for issuance to customer.

	From			To	
<b>Assembly Site</b>	onsemi Seremban, Malaysia	onsemi Vietnam	Tongfu Fujitsu, China	Tongfu Fujitsu, China	Good-Ark, China
<b>Die Attach</b>	Pb95Sn5	Pb95Sn5	Pb92.5Sn5Ag2.5	Pb92.5Sn5Ag2.5	Pb92.5Sn5Ag2.5
<b>Leadframe</b>	C19210	C19210	C19210	C19210	C19210
<b>Mold compound</b>	G700HF	G700HF	CEL8240HF10NF-2	CEL8240HF10NF-2	G700HF



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## Qualification Plan:

**DEVICE NAME: FDB082N15A (MV5 MOSFET)**

**PACKAGE: D2PAK**

Test	Specification	Condition	Interval
HTRB	JESD22-A108	Ta= 175°C, 80% max rated V	1008 hrs
HTGB	JESD22-A108	Ta= 175°C, 100% max rated Vgss	1008 hrs
HTSL	JESD22-A103	Ta= 175°C	1008 hrs
PC	J-STD-020 JESD-A113	MSL 1 @ 245 °C, Pre IOL, TC, uHAST, H3TRB	
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off = 3.5 min	15000 cyc
TC	JESD22-A104	Ta= -55°C to +150°C	1000 cyc
H3TRB	JESD22-A101	Ta= 85°C, RH = 85%, bias = 100V max	1008 hrs
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs
RSH	JESD22- B106	Ta = 265°C, 10 sec	
SD	JSTD002	Ta = 245°C, 5 sec	

**QV DEVICE NAME: FQB12P20TM (QFET)**

**PACKAGE: D2PAK**

Test	Specification	Condition	Interval
HTRB	JESD22-A108	Ta= 150°C, 80% max rated V	1008 hrs
HTGB	JESD22-A108	Ta= 150°C, 100% max rated Vgss	1008 hrs
HTSL	JESD22-A103	Ta= 150°C	1008 hrs
PC	J-STD-020 JESD-A113	MSL 1 @ 245 °C, Pre IOL, TC, uHAST, H3TRB	
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off = 3.5 min	15000 cyc
TC	JESD22-A104	Ta= -55°C to +150°C	1000 cyc
H3TRB	JESD22-A101	Ta= 85°C, RH = 85%, bias = 100V max	1008 hrs
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs
RSH	JESD22- B106	Ta = 265°C, 10 sec	
SD	JSTD002	Ta = 245°C, 5 sec	

**QV DEVICE NAME: NTB6410ANT4G (HD3E MOSFET)**

**PACKAGE: D2PAK**

Test	Specification	Condition	Interval
HTRB	JESD22-A108	Ta= 175°C, 100% max rated V	1008 hrs
HTGB	JESD22-A108	Ta= 175°C, 100% max rated Vgss	1008 hrs
HTSL	JESD22-A103	Ta= 175°C	1008 hrs
PC	J-STD-020 JESD-A113	MSL 1 @ 245 °C, Pre IOL, TC, uHAST, H3TRB	
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off = 3.5 min	15000 cyc
TC	JESD22-A104	Ta= -55°C to +150°C	1000 cyc
H3TRB	JESD22-A101	Ta= 85°C, RH = 85%, bias = 80% max rated V	1008 hrs
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs
RSH	JESD22- B106	Ta = 265°C, 10 sec	
SD	JSTD002	Ta = 245°C, 5 sec	



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### QV DEVICE NAME: NJVBUB323ZT4G (Sipos BJT)

#### PACKAGE: D2PAK

Test	Specification	Condition	Interval
HTRB	JESD22-A108	Ta= 175°C, 100% max rated V	1008 hrs
HTSL	JESD22-A103	Ta= 175°C	1008 hrs
PC	J-STD-020 JESD-A113	MSL 1 @ 245 °C, Pre IOL, TC, uHAST, H3TRB	
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off = 3.5 min	15000 cyc
TC	JESD22-A104	Ta= -65°C to +150°C	1000 cyc
H3TRB	JESD22-A101	Ta= 85°C, RH = 85%, bias = 100V max	1008 hrs
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs
RSH	JESD22- B106	Ta = 265°C, 10 sec	
SD	JSTD002	Ta = 245°C, 5 sec	

### QV DEVICE NAME: NJVMJB41CT4G (NPN BJT)

#### PACKAGE: D2PAK

Test	Specification	Condition	Interval
HTRB	JESD22-A108	Ta= 150°C, 100% max rated V	1008 hrs
HTSL	JESD22-A103	Ta= 150°C	1008 hrs
PC	J-STD-020 JESD-A113	MSL 1 @ 245 °C, Pre IOL, TC, uHAST, H3TRB	
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off = 3.5 min	15000 cyc
TC	JESD22-A104	Ta= -65°C to +150°C	1000 cyc
H3TRB	JESD22-A101	Ta= 85°C, RH = 85%, bias = 80% of rated V	1008 hrs
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs
RSH	JESD22- B106	Ta = 265°C, 10 sec	
SD	JSTD002	Ta = 245°C, 5 sec	

### QV DEVICE NAME: NJVMJB45H11T4G (PNP BJT)

#### PACKAGE: D2PAK

Test	Specification	Condition	Interval
HTRB	JESD22-A108	Ta= 150°C, 100% max rated V	1008 hrs
HTSL	JESD22-A103	Ta= 150°C	1008 hrs
PC	J-STD-020 JESD-A113	MSL 1 @ 245 °C, Pre IOL, TC, uHAST, H3TRB	
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off = 3.5 min	15000 cyc
TC	JESD22-A104	Ta= -65°C to +150°C	1000 cyc
H3TRB	JESD22-A101	Ta= 85°C, RH = 85%, bias = 80% of rated V	1008 hrs
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs
RSH	JESD22- B106	Ta = 265°C, 10 sec	
SD	JSTD002	Ta = 245°C, 5 sec	



## Initial Product/Process Change Notification

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### QV DEVICE NAME: SBRB20200CTT4G (Schottky Rectifier)

#### PACKAGE: D2PAK

Test	Specification	Condition	Interval
HTRB	JESD22-A108	Ta= 90°C, 100% max rated V	1008 hrs
HTSL	JESD22-A103	Ta= 175°C	1008 hrs
PC	J-STD-020 JESD-A113	MSL 1 @ 245 °C, Pre IOL, TC, uHAST, H3TRB	
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off = 3.5 min	15000 cyc
TC	JESD22-A104	Ta= -65°C to +150°C	1000 cyc
H3TRB	JESD22-A101	Ta= 85°C, RH = 85%, bias = 100V max	1008 hrs
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs
RSH	JESD22- B106	Ta = 265°C, 10 sec	
SD	JSTD002	Ta = 245°C, 5 sec	

### QV DEVICE NAME: NRVUB1660CTT4G (Ultrafast Rectifier)

#### PACKAGE: D2PAK

Test	Specification	Condition	Interval
HTRB	JESD22-A108	Tj= 175°C, 100% max rated V	1008 hrs
HTSL	JESD22-A103	Ta= 175°C	1008 hrs
PC	J-STD-020 JESD-A113	MSL 1 @ 245 °C, Pre IOL, TC, uHAST, H3TRB	
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off = 3.5 min	15000 cyc
TC	JESD22-A104	Ta= -65°C to +150°C	1000 cyc
H3TRB	JESD22-A101	Ta= 85°C, RH = 85%, bias = 100V max	1008 hrs
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs
RSH	JESD22- B106	Ta = 265°C, 10 sec	
SD	JSTD002	Ta = 245°C, 5 sec	

### QV DEVICE NAME: NTSB40200CTT4G (Trench Schottky Rectifier)

#### PACKAGE: D2PAK

Test	Specification	Condition	Interval
HTRB	JESD22-A108	Ta= 90°C, 100% max rated V	1008 hrs
HTSL	JESD22-A103	Ta= 150°C	1008 hrs
PC	J-STD-020 JESD-A113	MSL 1 @ 245 °C, Pre IOL, TC, uHAST, H3TRB	
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off = 3.5 min	15000 cyc
TC	JESD22-A104	Ta= -65°C to +150°C	1000 cyc
H3TRB	JESD22-A101	Ta= 85°C, RH = 85%, bias = 100V max	1008 hrs
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs
RSH	JESD22- B106	Ta = 265°C, 10 sec	
SD	JSTD002	Ta = 245°C, 5 sec	



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## 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
MURB1620CTT4G	NRVUB1660CTT4G
NTSB40200CTT4G	NTSB40200CTT4G
NTSB30100CTT4G	NTSB40200CTT4G
MBRB40250TT4G	SBRB20200CTT4G
MBRB20200CTT4G	SBRB20200CTT4G
MBRB20100CTT4G	SBRB20200CTT4G
MBRB4030T4G	SBRB20200CTT4G
MBRB2545CTT4G	SBRB20200CTT4G
MBRB2515LT4G	SBRB20200CTT4G
MBRB1545CTT4G	SBRB20200CTT4G
MBRB20H100CTT4G	SBRB20200CTT4G
MBRB8H100T4G	SBRB20200CTT4G
MJB44H11T4G	NJVMJB45H11T4G
MJB42CT4G	NJVMJB41CT4G
MJB5742T4G	NJVBUB323ZT4G
MJB45H11T4G	NJVMJB45H11T4G
MJB45H11G	NJVMJB45H11T4G
MJB44H11G	NJVMJB41CT4G
MJB41CT4G	NJVMJB41CT4G
MJB41CG	NJVMJB41CT4G
BUB323ZT4G	NJVBUB323ZT4G
IRFW630BTM-FP001	FQB12P20TM
FQB44N10TM	FQB12P20TM
FDB390N15A	FDB082N15A
FDB3502	FDB082N15A
FDB150N10	FDB082N15A
NTB6413ANT4G	NTB6410ANT4G
NTB6410ANT4G	NTB6410ANT4G
NTB25P06T4G	NTB6410ANT4G



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FQB27P06TM	FQB12P20TM
FQB22P10TM	FQB12P20TM
FQB19N20TM	FQB12P20TM
FQB19N20LTM	FQB12P20TM
FQB12P20TM	FQB12P20TM
FDB86102LZ	FDB082N15A
FDB110N15A	FDB082N15A
FDB082N15A	FDB082N15A
FDB120N10	FDB082N15A
FDB088N08	FDB082N15A

**Appendix A: Changed Products**

**PCN#: IPCN25066X**  
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DIKG: DIGI-KEY

Product	Customer Part Number	Qualification Vehicle	New Part Number	Replacement Supplier
MURB1620CTT4G		NRVUB1660CTT4G	NA	
MBRB20200CTT4G		SBRB20200CTT4G	NA	
MBRB20100CTT4G		SBRB20200CTT4G	NA	
MBRB4030T4G		SBRB20200CTT4G	NA	
MBRB2545CTT4G		SBRB20200CTT4G	NA	
MBRB2515LT4G		SBRB20200CTT4G	NA	
MBRB1545CTT4G		SBRB20200CTT4G	NA	
MBRB20H100CTT4G		SBRB20200CTT4G	NA	
MBRB8H100T4G		SBRB20200CTT4G	NA	
MJB44H11T4G		NJVMJB45H11T4G	NA	
MJB42CT4G		NJVMJB41CT4G	NA	
MJB5742T4G		NJVBUB323ZT4G	NA	
MJB45H11T4G		NJVMJB45H11T4G	NA	
MJB45H11G		NJVMJB45H11T4G	NA	
MJB44H11G		NJVMJB41CT4G	NA	
MJB41CT4G		NJVMJB41CT4G	NA	
MJB41CG		NJVMJB41CT4G	NA	
BUB323ZT4G		NJVBUB323ZT4G	NA	
NTSB30100CTT4G		NTSB40200CTT4G	NA	
FQB44N10TM		FQB12P20TM	NA	
FDB150N10		FDB082N15A	NA	
FDB390N15A		FDB082N15A	NA	
NTB6413ANT4G		NTB6410ANT4G	NA	
FDB3502		FDB082N15A	NA	
NTB25P06T4G		NTB6410ANT4G	NA	
NTB6410ANT4G		NTB6410ANT4G	NA	
FQB22P10TM		FQB12P20TM	NA	
FQB27P06TM		FQB12P20TM	NA	
FQB19N20LTM		FQB12P20TM	NA	
FQB12P20TM		FQB12P20TM	NA	
FQB19N20TM		FQB12P20TM	NA	
FDB110N15A		FDB082N15A	NA	
FDB86102LZ		FDB082N15A	NA	
FDB120N10		FDB082N15A	NA	
FDB082N15A		FDB082N15A	NA	
FDB088N08		FDB082N15A	NA	