



# Final Product/Process Change Notification

Document #: FPCN24561XA

Issue Date: 17 Mar 2023

<b>Title of Change:</b>	Qualification of FRD Rectifiers, UniFET's, and other discrete products at onsemi Roznov, Czech Republic.	
<b>Proposed First Ship date:</b>	24 Jun 2023 or earlier if approved by customer	
<b>Contact Information:</b>	Contact your local onsemi Sales Office or <a href="mailto:Daniel.Jeon@onsemi.com">Daniel.Jeon@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>Additional Reliability Data:</b>	Contact your local onsemi Sales Office or <a href="mailto:songyong.sim@onsemi.com">songyong.sim@onsemi.com</a>	
<b>Type of Notification:</b>	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 <a href="mailto:PCN.Support@onsemi.com">PCN.Support@onsemi.com</a>	
<b>Marking of Parts/ Traceability of Change:</b>	Date Code	
<b>Change Category:</b>	Wafer Fab Change	
<b>Change Sub-Category(s):</b>	Manufacturing Site Transfer	
<b>Sites Affected:</b>		
<b>onsemi Sites</b>	<b>External Foundry/Subcon Sites</b>	
onsemi Roznov, Czech Republic	None	
<b>Description and Purpose:</b>		
<p>This notification is to inform the customers that onsemi qualified their FRD Rectifiers, UniFET's, and other discrete products at onsemi Roznov, Czech Republic.</p> <p>Some of the parts may also undergo a wafer probe alternate location, but there is no impact to the 100% final electrical test.</p>		
	<b>Before Change Description</b>	<b>After Change Description</b>
<b>Wafer fab</b>	onsemi Bucheon, Korea	onsemi Roznov, Czech Republic onsemi Bucheon, Korea
There are no product material changes and no product marking changes because of this change.		

**Reliability Data Summary:**

**QV DEVICE NAME: FSB70250 (QV1-B) – Industrial**

**RMS: 86182**

**PACKAGE: PQFN-27**

Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108	Tj = 150°C, 80% max rated V	1008hrs	0/12
HAST	JESD22-A110	130°C, 85%RH, 18.8 psig, bias	96hrs	0/12
uHAST	JESD22-A118	130°C, 85%RH, 18.8 psig, unbiased	96hrs	0/12
PC	J-STD-020 / JESD-A113	MSL 3 @ 260°C	-	Pass
TC	JESD22-A104	Ta = -40°C to +125°C	1000cyc	0/12

**QV DEVICE NAME: FFA60UA60DN (QV2,**

**23428XB) – Industrial**

**RMS: 68327, 68386**

**PACKAGE: TO-3P**

Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108	Tj = 175°C, 80% max rated V	1008hrs	0/77
HAST	JESD22-A110	130°C, 85%RH, 18.8 psig, bias	96hrs	0/77
uHAST	JESD22-A118	130°C, 85%RH, 18.8 psig, unbiased	96hrs	0/77
TC	JESD22-A104	Ta = -55°C to +150°C	1000cyc	0/77
HTSL	JESD22-A103	Ta = 175°C	1008hrs	0/77
IOL	MIL STD750 (M 1037) AEC Q101	Ta=+25°C, delta Tj=100°C, on/off =5 min	6000 cyc	0/77
RSH	JESD22- B106	Ta=265°C, 10 sec	-	0/30

**QV DEVICE NAME: FNA41560T2**

**RMS: 68142**

**PACKAGE: SPM45**

Test	Specification	Condition	Interval	Results
HTSL	JESD22-A103	Ta=150°C	1008hrs	0/33
TC	JESD22-A104	Ta= -40°C to +125°C,	1000cyc	0/30
H3TRB	JESD22-A101	85°C, 85% RH, 18.8psig, bias 100V	1008hrs	0/33
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96hrs	0/33

**QV DEVICE NAME: FDA24N50 (QV1-1)**

**RMS: K83993, K86200**

**PACKAGE: TO3P**

Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108	Tj= 150°C, 80% max rated V	1008 hrs	0/240
HTGB	JESD22-A108	Tj= 150°C, 100% max rated Vgss	1008 hrs	0/240
HTSL	JESD22-A103	Ta= 150°C	1008 hrs	0/240
TC	JESD22-A104	Ta= -55°C to +150°C	1000 cyc	0/120
HAST	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hrs	0/120
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs	0/119



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**QV DEVICE NAME:** FSL306LRLX (QV1-2)

**RMS:** K84642, K85655

**PACKAGE:** PDIP7 GULLWING

Test	Specification	Condition	Interval	Results
HTOL	JESD22-A108	Ta=125°C, 100 % max rated Vcc	1008 hrs	0/80
HTSL	JESD22-A103	Ta= 150°C	1008 hrs	0/80
PC	J-STD-020 JESD-A113	MSL 1 @ 260 °C, Pre TC, uHAST, HAST for surface mount pkgs only	-	-
TC	JESD22-A104	Ta= -55°C to +150°C	1000 cyc	0/80
HAST	JESD22-A110	130°C, 85% RH, 33.3psig, bias	96 hrs	0/80
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs	0/80

**QV DEVICE NAME:** FQA28N50 (QV2-1)

**RMS:** K84460

**PACKAGE:** TO3P

Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108	Tj= 150°C, 80% max rated V	1008 hrs	0/80
HTGB	JESD22-A108	Tj= 150°C, 100% max rated Vgss	1008 hrs	0/80
HTSL	JESD22-A103	Ta= 150°C	1008 hrs	0/80
TC	JESD22-A104	Ta= -55°C to +150°C	1000 cyc	0/40
HAST	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hrs	0/40
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs	0/40

**QV DEVICE NAME:** FQA70N15 (QV2-2)

**RMS:** K87030

**PACKAGE:** TO3P

Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108	Tj= 175°C, 80% max rated V	1008 hrs	0/80
HTGB	JESD22-A108	Tj= 175°C, 100% max rated Vgss	1008 hrs	0/80
HTSL	JESD22-A103	Ta= 175°C	1008 hrs	0/80
TC	JESD22-A104	Ta= -55°C to +150°C	1000 cyc	0/40
HAST	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hrs	0/40
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs	0/40

**QV DEVICE NAME:** FQD2N100TM (QV2-3)

**RMS:** K87031

**PACKAGE:** DPAK

Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108	Tj= 150°C, 80% max rated V	1008 hrs	0/80
HTGB	JESD22-A108	Tj= 150°C, 100% max rated Vgss	1008 hrs	0/80
HTSL	JESD22-A103	Ta= 150°C	1008 hrs	0/80
PC	J-STD-020 / JESD-A113	MSL 1 @ 260°C, Pre TC, uHAST, HAST for surface mount pkgs only	-	-
TC	JESD22-A104	Ta= -55°C to +150°C	1000 cyc	0/40
HAST	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hrs	0/39
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs	0/39



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**QV DEVICE NAME:** FPPF10F150STU (QV6)

**RMS:** U86066, S87157

**PACKAGE:** TO-220-2

Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108	Tj=175°C, 80% rated V	1008hrs	0/231
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off = 5min	6000cyc	0/120
TC	JESD22-A104	Ta= -55°C to +150°C	1000cyc	0/75
HAST	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96hrs	0/231
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96hrs	0/231
RSH	JESD22- B106	Ta = 265°C, 10 sec Required for through hole devices only		0/30

**QV DEVICE NAME:** FPAM30LH60 (QV6-1)

**RMS:** K84869, K87758

**PACKAGE:** MOD-32 (SPM2V)

Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108	Tj=150°C, 80% rated V	1008hrs	0/12
TC	JESD22-A104	Ta= -40°C to +125°C	1000cyc	0/12
HAST	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96hrs	0/12
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96hrs	0/12

**QV DEVICE NAME:** NFVA35065L32 (QV8-1)

**RMS:** 83762, 84035

**PACKAGE:** ASPM27

Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108, AQG324	Tj=175°C, 100% max rated V	1008 hrs	0/78
TC	JESD22-A104, AQG324	Ta= -40°C to +125°C	1000 cyc	0/39
TS1	AQG324	Ta= -40°C to +125°C, transition <30sec	1000 cyc	0/18
TS2	AQG324	Ta= -40°C to +125°C, transition <30sec, with heat sink	1000 cyc	0/6
H3TRB	JESD22-A110	85°C, 85% RH, 18.8psig, bias 100V	1008 hrs	0/78
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs	0/36

**QV DEVICE NAME:** FGHL75T65MQD (QV8-2)

**RMS:** S85126

**PACKAGE:** TO-247

Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108	Tj=175°C, 80% rated V	1008hrs	0/231
HTGB	JESD22-A108	Ta=175°C, 100% max rated Vgss	1008 hrs	0/231
HTSL	JESD22-A103	Ta=175°C	1008hrs	0/231
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off = 5min	6000cyc	0/231



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TC	JESD22-A104	Ta= -65°C to +150°C	1000cyc	0/231
HAST	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96hrs	0/231
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96hrs	0/231
RSH	JESD22- B106	Ta = 265°C, 10 sec Required for through hole devices only		0/30

**QV DEVICE NAME:** FGA60N65SMD (QV8-3)

**RMS:** V85129

**PACKAGE:** TO-247

Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108	Tj=175°C, 80% rated V	1008hrs	0/231
HTGB	JESD22-A108	Ta=175°C, 100% max rated Vgss	1008 hrs	0/231
HTSL	JESD22-A103	Ta=175°C	1008hrs	0/231
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off = 5min	6000cyc	0/231
TC	JESD22-A104	Ta= -65°C to +150°C	1000cyc	0/231
HAST	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96hrs	0/231
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96hrs	0/231
RSH	JESD22- B106	Ta = 265°C, 10 sec Required for through hole devices only		0/30

**QV DEVICE NAME:** FDA28N50 (QV7-1)

**RMS:** K86421

**PACKAGE:** TO3P

Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108	Tj= 150°C, 80% max rated V	1008 hrs	0/160
HTGB	JESD22-A108	Tj= 150°C, 100% max rated Vgss	1008 hrs	0/160
HTSL	JESD22-A103	Ta= 150°C	1008 hrs	0/160
TC	JESD22-A104	Ta= -55°C to +150°C	1000 cyc	0/79
HAST	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hrs	0/80
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs	0/80

**QV DEVICE NAME:** FDB52N20TM (QV7-2)

**RMS:** U86419

**PACKAGE:** D2PAK

Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108	Tj= 150°C, 80% max rated V	1008 hrs	0/80
HTGB	JESD22-A108	Tj= 150°C, 100% max rated Vgss	1008 hrs	0/80
HTSL	JESD22-A103	Ta= 150°C	1008 hrs	0/80
PC	J-STD-020 / JESD-A113	MSL 1 @ 260°C, Pre IOL, TC, uHAST, HAST for surface mount pkgs only	-	-
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off = 3.5 min	8572 cyc	0/40



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TC	JESD22-A104	Ta= -55°C to +150°C	1000 cyc	0/37
HAST	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hrs	0/40
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs	0/40

**QV DEVICE NAME:** FGH75T65SHD-F155

**RRF:** 68330, 68385

**PACKAGE:** TO247

Test	Specification	Condition	Interval	Result
HTRB	JESD22-A108	Tj = 175°C, 100% max rated V	1008 hrs	0/77
HAST	JESD22-A110	130°C, 85%RH, 18.8 psig, bias	96hrs	0/77
UHAST	JESD22-A118	130°C, 85%RH, 18.8 psig, unbiased	96hrs	0/77
TC	JESD22-A104	Ta = -55°C to +150°C	1000 cyc	0/77
HTSL	JESD22-A103	Ta = 175°C	1008 Hrs	0/77
IOL	MIL STD750 (M 1037) AEC Q101	Ta=+25°C, delta Tj=100°C,on/off =5 min	6000 cyc	0/77
RSH	JESD22- B106	Ta=265°C, 10 sec		0/30

**QV DEVICE NAME:** RHRG75120

**RRF:** 68323, 68388

**PACKAGE:** TO247

Test	Specification	Condition	Interval	Result
HTRB	JESD22-A108	Tj = 175°C , 80% max rated V	1008 hrs	0/231
HAST	JESD22-A110	130°C, 85%RH, 18.8 psig, bias	96hrs	0/231
UHAST	JESD22-A118	130°C, 85%RH, 18.8 psig, unbiased	96hrs	0/231
TC	JESD22-A104	Ta = -55°C to +150°C	1000 cyc	0/231
HTSL	JESD22-A103	Ta = 175°C	1008 hrs	0/231
IOL	MIL STD750 (M 1037) AEC Q101	Ta=+25°C, delta Tj=100°C, on/off =5 min	6000 cyc	0/231
RSH	JESD22- B106	Ta=265°C, 10 sec		0/90

**QV DEVICE NAME:** FFH30S60STU

**RRF:** 68326, 68387

**PACKAGE:** TO247

Test	Specification	Condition	Interval	Result
HTRB	JESD22-A108	Tj = 175°C , 80% max rated V	1008 hrs	0/77
HTSL	JESD22-A103	Ta = 175°C	1008 hrs	0/77
IOL	MIL STD750 (M 1037) AEC-Q101	Ta=+25°C, delta Tj=100°C, On/off =5 min	6000 cyc	0/77
TC	JESD22-A104	Ta = -55°C to +150°C	1000 cyc	0/77
H3TRB	JESD22-A101	85°C, 85% RH, 18.8psig, bias	1008 hrs	0/77
UHAST	JESD22-A118	130°C, 85%RH, 18.8 psig, unbiased	96hrs	0/77
RSH	JESD22- B106	Ta=265°C, 10 sec		0/30



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**QV DEVICE NAME:** FGH75T65SQDTL4 (QV3-1A)

**RRF:**

**PACKAGE:** TO247

Test	Specification	Condition	Interval	Result
HTRB	JESD22-A108	Tj = 175°C , 80% max rated V	1008 hrs	0/77
HTSL	JESD22-A103	Ta = 175°C	1008 hrs	0/77
IOL	MIL STD750 (M 1037) AEC-Q101	Ta=+25°C, delta Tj=100°C, On/off =5 min	6000 cyc	0/77
TC	JESD22-A104	Ta = -55°C to +150°C	1000 cyc	0/77
H3TRB	JESD22-A101	85°C, 85% RH, 18.8psig, bias	1008 hrs	0/77
UHAST	JESD22-A118	130°C, 85%RH, 18.8 psig, unbiased	96hrs	0/77
RSH	JESD22- B106	Ta=265°C, 10 sec		0/30

### Electrical Characteristics Summary:

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](#).

Part Number	Qualification Vehicle
FNCS3060L	NFVA35065L32
FSB50450S	FSB70250
FSBB15CH120D	NFVA35065L32
FSBB15CH120DF	NFVA35065L32
FSBB20CH120D	NFVA35065L32
FSBB20CH120DF	NFVA35065L32
FSB50250BS	FFA60UA60DN
FSB70550	FDA24N50, FSB70250
FDB15N50	FDA24N50
FQP45N15V2	FQA28N50, FQA70N15, FQD2N100TM
FFA60UP20DNTU	FGHL75T65MQD
FFA60UP30DNTU	FGHL75T65MQD
FFH60UP40S	FGHL75T65MQD
RURG3060CC	FGHL75T65MQD



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RURG80100	FFA60UA60DN
RURP3060	FGA60N65SMD
FGA25N120ANTDTU	FFPF10F150STU, RHRG75120
FGA40T65SHD-01	FGH75T65SHD-F155
FGH30N60LSDTU	FGH75T65SHD-F155, RHRG75120
FGH40N60SMDF	FFH30S60STU
FGH40T65SHD-F155-01	RHRG75120
FGH40T65SHDF-F155-01	FGH75T65SHD-F155, FFH30S60STU, RHRG75120
FGH60T65SHD-F155-01	FGH75T65SHD-F155
FGH75T65SHD-F155-01	FGH75T65SHD-F155
FGH75T65SHDT-F155-01	FGH75T65SHD-F155
FGH75T65SHDTL4-01	FGH75T65SHD-F155
FGH80N60FD2TU	FFH30S60STU
FGA90N33ATDTU	FFH30S60STU, RHRG75120
FGH20N60SFDTU	FGH75T65SQDTL4
FGHL40T65MQD	FGH75T65SQDTL4
FGHL50T65MQD	FGH75T65SQDTL4
FGH40N60UFDTU	FGH75T65SQDTL4
FGH40N60SFDTU	FGH75T65SQDTL4
PCRU3060W	FGHL75T65MQD
PCFF60UP60W	FGHL75T65MQD
PCFF60UP40W	FGH75T65SHD-F155
PCFF30S60MF	FGH75T65SHD-F155
PCFF15S65W	FGH75T65SHD-F155
PCFF15S60W	FGH75T65SHD-F155
PCFF04S60W	FGH75T65SHD-F155
FGA40T65SHDF-01	FGH75T65SHD-F155, FFH30S60STU, RHRG75120
SFFH60UP60S	FFA60UA60DN, FGHL75T65MQD



**PCN Product List Addendum for:**

**Customer Contact Name:** Drop box Digi-Key

**Customer Contact Email:** [digikey.supplierinfo@digikey.com](mailto:digikey.supplierinfo@digikey.com)

**Appendix A: Changed Products**

**PCN#: FPCN24561XA**  
**Issue Date: Mar 17, 2023**

DIKG: DIGI-KEY

Product	Customer Part Number	Qualification Vehicle	New Part Number	Replacement Supplier
FSB50450S		FSB70250	NA	
FSBB15CH120DF		NFVA35065L32	NA	
FSBB20CH120D		NFVA35065L32	NA	
FSBB20CH120DF		NFVA35065L32	NA	
FSB50250BS		FFA60UA60DN	NA	
FSB70550		FDA24N50, FSB70250	NA	
FDB15N50		FDA24N50	NA	
FQP45N15V2		FQA28N50, FQA70N15, FQD2N100TM	NA	
FFA60UP20DNTU		FGHL75T65MQD	NA	
FFA60UP30DNTU		FGHL75T65MQD	NA	
FFH60UP40S		FGHL75T65MQD	NA	
RURG3060CC		FGHL75T65MQD	NA	
RURG80100		FFA60UA60DN	NA	
RURP3060		FGA60N65SMD	NA	
FGA25N120ANTDTU		FFPF10F150STU, RHRG75120	NA	
FGH30N60LSDTU		FGH75T65SHD-F155, RHRG75120	NA	
FGH40N60SMDF		FFH30S60STU	NA	
FGH80N60FD2TU		FFH30S60STU	NA	
FGH20N60SFDTU		FGH75T65SQDTL4	NA	
FGHL40T65MQD		FGH75T65SQDTL4	NA	
FGH40N60UFDTU		FGH75T65SQDTL4	NA	
FGH40N60SFDTU		FGH75T65SQDTL4	NA	
FSBB15CH120D		NFVA35065L32	NA	