ON Semiconductor®

Final Product/Process Change Notification

Document # : FPCN22629Z
Issue Date: 3 March 2019

Title of Change:	NCV7708 Family – Wafer Technology and Package Upgrades
Proposed Changed Material First Ship Date:	3 March 2020
Current Material Last Order Date:	3 March 2020 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:	3 March 2020 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 – Integrated circuits
Contact information:	Contact your local ON Semiconductor Sales Office or <bill.fontes@onsemi.com>
Samples:	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.
Sample Availability Date:	1 February 2019
PPAP Availability Date:	15 March 2019
Additional Reliability Data:	Contact your local ON Semiconductor Sales Office or <peter.turlo@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	**Type of Change**
Design	Design Change in Active Elements
Data Sheet	Change of datasheet parameters/electrical specification (min./max./typ. values) and/or AC/DC specification
Process – Wafer Production	Change in process technology (e. g. process changes like lithography, etch, oxide deposition, diffusion, die back surface preparation/backgrind, ...) Change of specified wafer process sequence (deletion and/or additional process step)
Process – Assembly	Change of lead frame finishing material / area (internal) Die attach material Change of wire bonding Change of mold compound Change of product marking

Description and Purpose:

Change of wafer processing technology and package components for improved quality and device performance. Design changes as needed to support the new wafer technology. Old PS5B technology upgraded to more modern I3T50 wafer process. PS5B wafers technology is nearing end of life and cannot support future production needs. Package changes to improve delamination performance.

	Before Change Description	After Change Description
Leadframe	Sn lead finish	NiPdAu lead finish, roughened leadframe
Die Attach	CRM1084P	CRM1076WB
Bond Wire	2.0 mil Au	1.3 mil Au
Mold Compound	G600	G700LS

	From	To
Product Marking Change	NCV7708B, NCV7708C, NCV7708E	NCV7708F

Reason / Motivation for Change:	Change benefit for customer – More modern wafer technology that will supported long term. Improved Package BOM. Risk for late release – Possible supply disruptions after last order date. Quality improvement – Yes. Lower die defectivity, improved package delamination performance.	
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. Datasheet updates as shown in Electrical Characteristic Summary below.	
Sites Affected:	ON Semiconductor Sites: ON Oudenaarde, Belgium ON Carmona, Philippines	External Foundry/Subcon Sites: None
Marking of Parts/ Traceability of Change:	New part numbers will have a new package topside marking: Line 1 = NCV7708F	

Reliability Data Summary:

QV DEVICE NAME: NCV7708FDWR2G

RMS: 46991

PACKAGE: SOIC 28W

Test	Specification	Condition	Interval	Results
HTOL	JESD22-A108	Ta= 150°C, 100 % max rated Vcc	2016 hrs	0/235
HTSL	JESD22-A103	Ta= 175°C	2000 hrs	0/255
TC	JESD22-A104	Ta= -65°C to +150°C	2000 cyc	0/253
HAST	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hrs	0/238
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs	0/240
PC	J-STD-020 JESD-A113	MSL 3 @ 260 °C		
SD	JSTD002	Ta = 245C, 10 sec		0/ 45

Note: AEC 1-pager attached

To view attachments:
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 Characteristic Summary:

Datasheet Parametric Table Updated as Follows

	NCV7708B,C,E		NCV7708F	
	min	max	min	max
Supply Current (VS1+VS2) Sleep Mode	-	5.0 uA	•	2.5 uA
Supply Current (VS1) Active Mode	-	4.0 mA	•	2.5 mA
Supply Current (VS2) Active Mode	-	1.0 mA	-	2.5 mA
VCC Power-On-Reset Threshold	-	3.0 V	-	2.9 V
VSx Undervoltage Detection Threshold	4.2 V	5.1 V	3.7 V	4.5 V
VSx Undervoltage Detection Hysteresis	-	400 mV	-	450 V
VSx Overvoltage Detection Threshold	35 V	-	33 V	-
VSx Overvoltage Detection Hysteresis	1.5 V	5.5 V	1 V	4.0 V
Output High Rdson 25C -40C to 150C	 - -	 1.0 ohm 2.2 ohm	 - -	 1.3 ohm 1.7 ohm
Low-Side Clamping Voltage	34 V	48 V	36 V	45 V
Under Load Detection Threshold (OUTLx)	3.0 mA	15 mA	2.0 mA	16 mA
Overcurrent Shutdown Threshold (OUTHx)	-1.9 A	-1.0 A	-2.0 A	-1.1 A
Overcurrent Shutdown Threshold (OUTLx)	1.0 A	1.9 A	1.1 A	2.0 A
New Function Bit13=0 Overcurrent Shutdown Delay Time	-	-	80 us	400 us
Input Threshold	% of VCC		Absolute Voltages	
Input Hysteresis (EN)	-	600 mV	-	800 mV
CSB High Time	200 ns	•	5000 ns	-
SO enable after CSB falling edge	-	50 ns	-	200 ns
SO enable after CSB rising edge	-	50 ns	-	200 ns
SO Valid Time	-	50 ns	-	100 ns

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
NCV7708BDWR2G	NCV7708FDWR2G	NCV7708FDWR2G
NCV7708CDWR2G	NCV7708FDWR2G	NCV7708FDWR2G
NCV7708EDWR2G	NCV7708FDWR2G	NCV7708FDWR2G

Appendix A: Changed Products

D

Product	Customer Part Number	New Part Number	Qualification Vehicle
NCV7708BDWR2G		NCV7708FDWR2G	NCV7708FDWR2G
NCV7708CDWR2G		NCV7708FDWR2G	NCV7708FDWR2G
NCV7708EDWR2G		NCV7708FDWR2G	NCV7708FDWR2G