



<b>Title of Change:</b>	NCV8774 family – Wafer Technology, Wafer Fab location and Package upgrades
<b>Proposed Changed Material First Ship Date:</b>	13 Jan 2022 or earlier if approved by customer
<b>Current Material Last Order Date:</b>	31 Jul 2021 <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>
<b>Current Material Last Delivery Date:</b>	12 Jan 2022 unless otherwise mutually agreed <i>The Current Material Last Delivery Date may be subject to change based on build and depletion of the current (unchanged) material inventory</i>
<b>Product Category:</b>	Active components – Integrated circuits
<b>Contact information:</b>	Contact your local ON Semiconductor Sales Office or <a href="mailto:Juraj.Kremmer@onsemi.com">Juraj.Kremmer@onsemi.com</a>
<b>PCN Samples Contact:</b>	Contact your local ON Semiconductor Sales Office to place sample order or <a href="mailto:PCN.samples@onsemi.com">&lt;PCN.samples@onsemi.com&gt;</a> . 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.
<b>Sample Availability Date:</b>	1 Jan 2021
<b>PPAP Availability Date:</b>	26 Feb 2021
<b>Additional Reliability Data:</b>	Contact your local ON Semiconductor Sales Office or <a href="mailto:Tomas.Vajter@onsemi.com">Tomas.Vajter@onsemi.com</a>
<b>Type of Notification:</b>	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 <a href="mailto:PCN.Support@onsemi.com">PCN.Support@onsemi.com</a> .
<b>Change Category</b>	
<b>Category</b>	<b>Type of Change</b>
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	Move of all or part of wafer fab to a different location/site/subcontractor Change in process technology (e. g. process changes like lithography, etch, oxide deposition, diffusion, die back surface preparation/backgrind, ...), New wafer diameter
Process - Assembly	Change of wire bonding, Change of mold compound, Change of product marking
<b>Description and Purpose:</b>	
<p>Change of wafer processing technology from PS5B currently manufactured in Fab2, Oudenaarde, Belgium (150 mm fab) to I3T50 in Gresham, Oregon, USA (200 mm fab). Old PS5B technology replaced by the more advanced I3T50 wafer process. PS5B wafer technology is nearing end of life and cannot support future production needs.</p> <p>These changes are also related to the Fab2 manufacturing site sale.</p> <p>Design changes done in order to support the new wafer technology.</p> <p>In addition, package changes were done to improve delamination performance.</p>	



	Before Change Description	After Change Description		
OPN	NCV8774DT50RKG, NCV8774DT33RKG	NCV8774CDT50RKG, NCV8774CDT33RKG		
Wafer Fab location	Fab2, Oudenaarde, Belgium	Gresham, Oregon, USA		
Wafer Technology	PS5B (1.5um)	I3T50 (0.35um)		
Wafer Diameter	150mm	200mm		
Bond Wire	Cu 2.0 mil	Cu 1.5 mil		
Mold Compound	GE 8000CH4ES	G700HF		
	From	To		
Product marking change	NCV8774DT50RKG - Line1: 877450G NCV8774DT33RKG - Line1: 877433G	NCV8774CDT50RKG - Line1: 8774C5G NCV8774CDT33RKG - Line1: 8774C3G		
<b>Reason / Motivation for Change:</b>	<b>Benefit of the change:</b> More modern wafer technology that will supported long term with improved wafer fab capacity. Improved package BOM. <b>Risk for Late Release:</b> Possible supply disruptions. <b>Quality Improvement:</b> Yes. Lower die defectivity, improved package delamination performance.			
<b>Anticipated impact on fit, form, function, reliability, product safety or manufacturability:</b>	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.			
<b>Sites Affected:</b>				
<b>ON Semiconductor Sites</b>	<b>External Foundry/Subcon Sites</b>			
ON Semiconductor Oudenaarde, Belgium	None			
ON Semiconductor Gresham, Oregon, USA				
ON Semiconductor Seremban, Malaysia				
<b>Marking of Parts/ Traceability of Change:</b>	New part numbers will have a new package topside marking: NCV8774CDT50RKG - Line1: 8774C5G; NCV8774CDT33RKG - Line1: 8774C3G.			
<b>Reliability Data Summary:</b>				
QV DEVICE NAME: NCV8774CDT50RKG, NCV8774CDT33RKG RMS: S59632 PACKAGE: DPAK 5LD				
Test	Specification	Condition	Interval	Results
HTOL	JESD22-A108	Ta = 125°C, Vcc = 40V	2016 hrs	0/240
HTSL	JESD22-A103	Ta = 150°C	2016 hrs	0/252
TC	JESD22-A104	Ta = -65°C to+150°C	1000 cyc	0/252
PTC	JESD22 A105	Ta = -40°C to+125°C	1000 cyc	0/55
HAST	JESD22-A110	Ta = 110°C, 85% RH, 18.8psig, Vcc = 40V	528 hrs	0/252
uHAST	JESD22-A118	Ta = 130°C, 85% RH, 18.8psig, unbiased	192 hrs	0/252
PC	J-STD-020 JESD-A113	MSL= 1 @ 260°C		



SD	JSTD002	Ta = 245C, 5 sec	0/15
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**NOTE: AEC-1pager is 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.

**Electrical Characteristics Summary:**

Datasheet Parametric Table Updated as Follows

		NCV8774C				NCV8774				
ELECTRICAL CHARACTERISTICS		V <sub>in</sub> = 13.5 V, C <sub>in</sub> = 0.1 μF, C <sub>out</sub> = 1 μF, Min and Max values are valid for temperature range -40°C ≤ T <sub>j</sub> ≤ 150°C unless noted otherwise and are guaranteed by test, design or statistical correlation. Typical values are referenced to T <sub>j</sub> = 25°C				V <sub>in</sub> = 13.2 V, C <sub>in</sub> = 0.1 μF, C <sub>out</sub> = 1 μF, Min and Max values are valid for temperature range -40°C ≤ T <sub>j</sub> ≤ 150°C unless noted otherwise and are guaranteed by test, design or statistical correlation. Typical values are referenced to T <sub>j</sub> = 25°C				
Parameter	Symbol	Test Conditions	Min	Typ	Max	Test Conditions	Min	Typ	Max	Unit
Output Voltage	V <sub>out</sub>		(-2%)		(+2%)		(-2%)		(+2%)	V
	3.3 V	V <sub>in</sub> = 4.5 V to 40 V, I <sub>out</sub> = 0.1 mA to 200 mA	3.234	3.3	3.366	V <sub>in</sub> = 4.5 V to 40 V, I <sub>out</sub> = 0.1 mA to 200 mA	3.234	3.3	3.366	
	3.3 V	V <sub>in</sub> = 4.5 V to 16 V, I <sub>out</sub> = 0.1 mA to 350 mA	3.234	3.3	3.366	V <sub>in</sub> = 4.5 V to 16 V, I <sub>out</sub> = 0.1 mA to 350 mA	3.234	3.3	3.366	
	5.0 V	V <sub>in</sub> = 5.45 V to 40 V, I <sub>out</sub> = 0.1 mA to 200 mA	4.9	5.0	5.1	V <sub>in</sub> = 5.6 V to 40 V, I <sub>out</sub> = 0.1 mA to 200 mA	4.9	5.0	5.1	
	5.0 V	V <sub>in</sub> = 5.7 V to 16 V, I <sub>out</sub> = 0.1 mA to 350 mA	4.9	5.0	5.1	V <sub>in</sub> = 5.975 V to 16 V, I <sub>out</sub> = 0.1 mA to 350 mA	4.9	5.0	5.1	
	3.3 V	V <sub>in</sub> = 4.5 V to 40 V, I <sub>out</sub> = 0 mA	3.234	3.3	3.366	V <sub>in</sub> = 4.5 V to 28 V, I <sub>out</sub> = 0 mA to 350 mA	3.234	3.3	3.366	
	5.0 V	V <sub>in</sub> = 5.45 V to 40 V, I <sub>out</sub> = 0 mA	4.9	5.0	5.1	V <sub>in</sub> = 5.975 V to 28 V, I <sub>out</sub> = 0 mA to 350 mA	4.9	5.0	5.1	
Dropout Voltage	V <sub>DO</sub>		-	200	350		-	250	500	mV
	3.3 V	I <sub>out</sub> = 200 mA	-	200	350	I <sub>out</sub> = 200 mA	-	250	500	mV
	5.0 V	I <sub>out</sub> = 350 mA	-	350	600	I <sub>out</sub> = 350 mA	-	440	875	
Parameter	Symbol	Test Conditions	Min	Typ	Max	Test Conditions	Min	Typ	Max	Unit
Quiescent Current (I <sub>q</sub> = I <sub>in</sub> - I <sub>out</sub> )	I <sub>q</sub>		-	17	21		-	18	22	μA
		I <sub>out</sub> = 0 mA, T <sub>j</sub> = 25 °C	-	17	21	I <sub>out</sub> = 0.1 mA, T <sub>j</sub> = 25 °C	-	18	22	
		I <sub>out</sub> = 0 mA, T <sub>j</sub> ≤ 125 °C	-	-	23	I <sub>out</sub> = 0.1 mA to 350 mA, T <sub>j</sub> ≤ 125 °C	-	-	23	
		I <sub>out</sub> = 0.1 mA, T <sub>j</sub> = 25 °C	-	19	23					
		I <sub>out</sub> = 0.1 mA, T <sub>j</sub> ≤ 125 °C	-	-	25					
Power Supply Ripple Rejection	PSRR		-	80	-		-	54	-	dB
		f = 100 Hz, 0.5 V <sub>DD</sub>	-	80	-	f = 100 Hz, 0.5 V <sub>DD</sub>	-	54	-	

**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
NCV8774DT33RKG	NCV8774CDT33RKG	NCV8774CDT50RKG
NCV8774DT50RKG	NCV8774CDT50RKG	NCV8774CDT50RKG