



Title of Change:	Gresham Devices as Drop-In Replacements for Current FAB2 Devices - NCV8772 family
Proposed Changed Material First Ship Date:	12 Mar 2022 or earlier if approved by customer
Current Material Last Order Date:	30 Jun 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>
Current Material Last Delivery Date:	11 Mar 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>
Product Category:	Active components – Integrated circuits
Contact information:	Contact your local ON Semiconductor Sales Office or Juraj.Kremmer@onsemi.com
PCN Samples Contact:	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. Samples delivery timing will be subject to request date, sample quantity and special customer packing/label requirements.
Sample Availability Date:	26 Mar 2021
PPAP Availability Date:	26 Apr 2021
Additional Reliability Data:	Contact your local ON Semiconductor Sales Office or Tomas.Vajter@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	
Category	Type of Change
Design	Design Change in Active Elements
Process - Wafer Production	Change in process technology (e. g. process changes like lithography, etch, oxide deposition, diffusion, die back surface preparation/backgrind, ...), Move of all or part of wafer fab to a different location/site/subcontractor, New wafer diameter
Data Sheet	Change of datasheet parameters/electrical specification (min./max./typ. values) and/or AC/DC specification
Process - Assembly	Change of mold compound, Change of wire bonding, Change of product marking
Description and Purpose:	
Change of design to new wafer technology to support new wafer technology. 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. These changes are also related to the Fab2 manufacturing site sale. In addition, package changes were done to improve delamination performance.	



	Before Change Description	After Change Description
OPN	DPAK: NCV87722DT33RKG, NCV87722DT50RKG D2PAK: NCV87722D5S33R4G	DPAK: NCV8772CDT334RKG, NCV8772CDT504RKG D2PAK: NCV8772CDS334R4G
Wafer Fab location	Fab2, Oudenaarde, Belgium	Gresham, Oregon, USA
Wafer Technology	PS5B (1.5um)	I3T50 (0.35um)
Wafer Diameter	150mm	200mm
Bond Wire (DPAK)	Cu 2.0 mil	Cu 1.5 mil
Mold Compound (DPAK)	GE 8000CH4ES	G700HF
Mold Compound (D2PAK)	G600	G700HF

	From	To
Product marking change	NCV87722DT33RKG - Line1: 772233G NCV87722DT50RKG - Line1: 772250G NCV87722D5S33R4G - Line2: V8772233	NCV8772CDT334RKG - Line1: 772C34G NCV8772CDT504RKG - Line1: 772C54G NCV8772CDS334R4G - Line2: V8772C34

Reason / Motivation for Change:	Benefit of the change: More modern wafer technology that will supported long term with improved wafer fab capacity. Improved package BOM. Improved parametric performance. Risk for Late Release: Possible supply disruptions. 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. No anticipated impacts.

Sites Affected:	
ON Semiconductor Sites	External Foundry/Subcon Sites
ON Semiconductor Gresham, Oregon, USA	None
ON Semiconductor Oudenaarde, Belgium	
ON Semiconductor Seremban, Malaysia	

Marking of Parts/ Traceability of Change:	New part numbers will have a new package topside marking: NCV8772CDT334RKG - Line1: 772C34G NCV8772CDT504RKG - Line1: 772C54G NCV8772CDS334R4G - Line2: V8772C34
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Reliability Data Summary:				
QV DEVICE NAME: NCV8772CDT504RKG / NCV8775CDT50RKG				
RMS: S57655 / S49712, S58942				
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	0/45
HAST	JESD22-A110	Ta = 130°C, 85% RH, 18.8psig, Vcc = 40V	96 hrs	0/252
HAST	JESD22-A110	Ta = 110°C, 85% RH, 18.8psig, Vcc = 40V	264 hrs	0/168
uHAST	JESD22-A118	Ta = 130°C, 85% RH, 18.8psig, unbiased	192 hrs	0/252
PC	JESD-A113, J-STD-020	MSL= 1 @ 260°C		
SD	JSTD002	Ta = 245C, 5 sec		0/45



QV DEVICE NAME: NCV8772CDS334R4G / NCV8775CDS50R4G

RMS: S57654 / S58945, S63707, S65110, S66494

PACKAGE: D2PAK 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	264 hrs	0/252
uHAST	JESD22-A118	Ta = 130°C, 85% RH, 18.8psig, unbiased	192 hrs	0/252
PC	JESD-A113, J-STD-020	MSL= 1 @ 260°C		
SD	JSTD002	Ta = 245C, 5 sec		0/45

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 Maximum Ratings updated as follows**

NCV8772C						NCV8772			
Rating	Symbol	Min	Max	Unit		Symbol	Min	Max	Unit
ABSOLUTE MAXIMUM RATINGS									
Input Voltage	DC V_{in}	-0.3	40	V		V_{in}	-0.3	40	V
Input Voltage Load Dump - Suppressed	V_s	-	45			V_s	-	45	
Input Current						I_{in}	-5	-	mA
Output Voltage	V_{out}	-0.3	7	V		V_{out}	-0.3	5.5	V
Output Current						I_{out}	-3	Current Limited	mA
Enable Input Voltage	DC V_{EN}	-0.3	40	V		V_{EN}	-0.3	40	V
Enable Input Current	Transient, t < 100 ns							45	
DT (Reset Delay Time Select) Voltage						I_{EN}	-1	1	mA
DT (Reset Delay Time Select) Current						V_{DT}	-0.3	5.5	V
Reset Output Voltage	V_{RO}	-0.3	7	V		I_{DT}	-1	1	mA
Reset Output Current						V_{RO}	-0.3	5.5	V
Junction Temperature Range	T_J	-40	150	°C		I_{RO}	-3	3	mA
Storage Temperature Range	T_{STG}	-55	150	°C		T_J	-40	150	°C
						T_{STG}	-55	150	°C
ESD CAPABILITY									
ESD Capability, Human Body Model	ESD _{HBM}	-4	4	kV		ESD _{HBM}	-2	2	kV
ESD Capability, Charged Device Model	ESD _{CDM}	-1	1	kV		ESD _{CDM}	-1	1	kV
ESD Capability, Machine Model						ESD _{MM}	-200	200	V



Datasheet Electrical Characteristics updated as follows

ELECTRICAL CHARACTERISTICS

NCV8772C

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
REGULATOR OUTPUT						
Output Voltage (Accuracy %)		V_{out}	(-2 %)		(+2 %)	V
3.3V	$V_{in} = 4.5V$ to 40V, $I_{load} = 0.1mA$ to 200mA		3.234	3.3	3.366	
	$V_{in} = 4.5V$ to 16V, $I_{load} = 0.1mA$ to 350mA		3.234	3.3	3.366	
5.0V	$V_{in} = 5.6V$ to 40V, $I_{load} = 0.1mA$ to 200mA		4.9	5.0	5.1	
	$V_{in} = 5.975V$ to 16V, $I_{load} = 0.1mA$ to 350mA		4.9	5	5.1	
Output Voltage (Accuracy %)						
3.3V						
5.0V						
Dropout Voltage		V_{DO}	-	250	450	mV
	$I_{load} = 200mA$		-	440	800	
	$I_{load} = 350mA$					
Output Capacitor for Stability						

NCV8772

Test Conditions	Symbol	Min	Typ	Max	Unit
$V_{in} = 4.5V$ to 40V, $I_{load} = 0.1mA$ to 200mA	V_{out}	(-2 %)		(+2 %)	V
$V_{in} = 4.5V$ to 16V, $I_{load} = 0.1mA$ to 350mA		3.234	3.3	3.366	
$V_{in} = 5.6V$ to 40V, $I_{load} = 0.1mA$ to 200mA		4.9	5.0	5.1	
$V_{in} = 5.975V$ to 16V, $I_{load} = 0.1mA$ to 350mA		4.9	5.0	5.1	
$T_j = 25^\circ C$ to 125°C	V_{out}	(-1.5 %)		(+1.5 %)	V
$V_{in} = 4.5V$ to 16V, $I_{load} = 0.1mA$ to 200mA		3.2505	3.3	3.3495	
$V_{in} = 5.975V$ to 16V, $I_{load} = 0.1mA$ to 200mA		4.925	5	5.075	
$T_j = -40^\circ C$ to 125°C	V_{out}	(-2%)		(+2%)	V
$V_{in} = 4.5V$ to 28V, $I_{load} = 0mA$ to 350mA		3.234	3.3	3.366	
$V_{in} = 5.975V$ to 28V, $I_{load} = 0mA$ to 350mA		4.9	5	5.1	
$I_{load} = 200mA$	V_{DO}	-	250	500	mV
$I_{load} = 350mA$		-	440	875	
$I_{load} = 0mA$ to 350mA	C_{out}	1	-	100	μF
	ESR	0.01	-	100	Ω

DISABLE AND QUIESCENT CURRENTS

Disable Current	$V_{IN} = 0V$, $T_j < 125^\circ C$	I_{DIS}	-	-	1	μA
Quiescent Current ($I_L = I_{in} - I_{out}$)		I_q	-	18	22	μA
	$I_{load} = 0mA$, $T_j = 25^\circ C$		-	-	24	
	$I_{load} = 0mA$, $T_j \leq 125^\circ C$		-	20	24	
	$I_{load} = 0.1mA$, $T_j = 25^\circ C$		-	-	26	
	$I_{load} = 0.1mA$, $T_j \leq 125^\circ C$		-	-	-	

$V_{IN} = 0V$, $T_j < 85^\circ C$	I_{DIS}	-	-	1	μA
$I_{load} = 0.1mA$, $T_j = 25^\circ C$	I_q	-	24	29	μA
$I_{load} = 0.1mA$ to 350mA, $T_j \leq 125^\circ C$		-	-	30	

PSRR

Power Supply Ripple Rejection	$f = 100Hz$, $0.5V_{pp}$	PSRR	-	75	-	dB
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$f = 100Hz$, $0.5V_{pp}$	PSRR	-	60	-	dB
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ENABLE THRESHOLDS

Enable Input Threshold Voltage		$V_{BIZ(N)}$	0.8	1.65	-	V
Logic Low			-	1.75	2.5	
Logic High						
Enable Input Current						μA
Logic High	$V_{IN} = 5V$	I_{IN_ON}	-	3	5	
Logic Low	$V_{IN} = 0V$	I_{IN_OFF}	-	0.5	1	

	$V_{BIZ(N)}$	- 2.5	-	0.8	V
$V_{IN}=5V$	I_{IN_ON}	-	3	5	μA
$V_{IN}=0V$ $T_I < 85^{\circ}C$	I_{IN_OFF}	-	0.5	1	

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
NCV87722DT33RKG	NCV8772CDT334RKG	NCV8772CDT504RKG
NCV87722DT50RKG	NCV8772CDT504RKG	NCV8772CDT504RKG
NCV87722D5S33R4G	NCV8772CDS334R4G	NCV8772CDS334R4G