

<b>PCN Number:</b>	20161111001	<b>PCN Date:</b>	Nov 14, 2016
<b>Title:</b>	UCD3138 Die Revision and Assembly Change		
<b>Customer Contact:</b>	<a href="#">PCN Manager</a>	<b>Dept:</b>	Quality Services
<b>Proposed 1<sup>st</sup> Ship Date:</b>	Feb 14, 2017	<b>Estimated Sample Availability:</b>	Date provided at sample request.
<b>Change Type:</b>			
<input type="checkbox"/>	Assembly Site	<input checked="" type="checkbox"/>	Design
<input type="checkbox"/>	Assembly Process	<input type="checkbox"/>	Data Sheet
<input checked="" type="checkbox"/>	Assembly Materials	<input type="checkbox"/>	Part number change
<input type="checkbox"/>	Mechanical Specification	<input type="checkbox"/>	Test Site
<input type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process
		<input type="checkbox"/>	Wafer Bump Site
		<input type="checkbox"/>	Wafer Bump Material
		<input type="checkbox"/>	Wafer Bump Process
		<input type="checkbox"/>	Wafer Fab Site
		<input type="checkbox"/>	Wafer Fab Materials
		<input type="checkbox"/>	Wafer Fab Process
<b>PCN Details</b>			
<b>Description of Change:</b>			
<p>This notification is to inform of a die revision change to the UCD3138 family of devices. A design change was performed to fix a cold temperature startup issue (-10C to -40C) with default trim value changes. This issue was related to the 40 pin RMH package only but the same die rev is being changed in the other package options as well (40 pin RHA, 64 pin RGC). This design change raises the minimum default trim at reset that affects the internal HFO regulator voltage at startup.</p> <p>There will be no accompanying changes to the device datasheet.</p>			
<b>Material Differences:</b>			
<b>Group 1 Device: Die Rev and Mount Compound Changes</b>			
	<b>Current</b>	<b>New</b>	
Die Rev.	B	D	
MSL Level	3	2	
Mount Compound	4207768	4207123	
Die revision change also includes a change in the mount compound and MSL level for the RGC (VQFN) package.			
<b>Group 2 Device: Die Rev change only</b>			
No Material differences in the devices			
<b>Reason for Change:</b>			
Quality Improvement			
<b>Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):</b>			
None			
<b>Anticipated impact on Material Declaration</b>			
<input type="checkbox"/>	No Impact to the Material Declaration	<input checked="" type="checkbox"/>	Material Declarations or Product Content reports are driven from production data and will be available following the production release. Upon production release the revised reports can be obtained at the site link below <a href="http://www.ti.com/quality/docs/materialcontentsearch.tsp">http://www.ti.com/quality/docs/materialcontentsearch.tsp</a>
<b>Changes to product identification resulting from this PCN:</b>			

Die Rev designator for the affected devices will change as shown in the table and sample label below:

Current	New
Die Rev [2P] B	Die Rev [2P] D

Sample product shipping label (not actual product label)

**TEXAS INSTRUMENTS**  
 MADE IN: Malaysia  
 2DC: 2Q:  
 MSL 2 / 260C / 1 YEAR SEAL DT  
 MSL 1 / 235C / UNLIM 03/29/04  
 OPT: 39  
 ITEM: LBL: 5A (L) TO: 1750  
 (1P) SN74LS07NSR  
 (Q) 2000 (D) 0336  
 (31T) LOT: 3959047MLA  
 (4W) TKY (1T) 7523483SI2  
 (P) REV: 2P (V) 0033317  
 (20L) CSO: SHE (21L) CCO: USA  
 (22L) ASO: MLA (23L) ACO: MYS

**Product Affected: Group 1 Devices**

UCD3138RGCR	UCD3138RGCT
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**Product Affected: Group 2 Devices**

UCD3138RHAR	UCD3138RHAT	UCD3138RMHR	UCD3138RMHT
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## Qualification Report

UCD3138 Die Revision

Qual Device: UCD3138RGC/UCD3138RHA/UCD3138RMH

### Product Attributes

Attributes	Qual Device: UCD3138RGC	Qual Device: UCD3138RHA	Qual Device: UCD3138RMH	QBS Product Reference: UCD3138RJA
Assembly Site	CLARK	CLARK	CLARK	UTAC (NSE)
Package Family	QFN(VQFN-09.MM)	QFN	WQFN	QFN
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0
Wafer Fab Supplier	TSMC FAB11	TSMC FAB11	TSMC FAB11	TSMC FAB11
Wafer Process	0.18UM TSMC	0.18UM TSMC	0.18UM TSMC	0.18UM TSMC

Attributes	QBS Process Reference: UCD9248EPFC	QBS Package Reference: UCD3138ARGC	QBS Package Reference: UCD3138RMH
Assembly Site	MLA (TIM)	CLARK AT	CLARK-AT
Package Family	TQFP	QFN(VQFN-09.MM)	WQFN
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0
Wafer Fab Supplier	TSMC FAB11	TSMC FAB11	TSMC FAB11
Wafer Process	0.18UM TSMC	0.18UM TSMC	0.18UM TSMC

- QBS: Qual By Similarity

- Qual Devices qualified at LEVEL2-260C: UCD3138RGC, UCD3138RMH, UCD3138RHA

## Qualification Results

Data Displayed as: Number of lots / Total sample size / Total failed

Type	Test Name / Condition	Duration	Qual Device: UCD3138RGC	Qual Device: UCD3138RHA	Qual Device: UCD3138RMH	QBS Product Reference: UCD3138RJA
AC	Autoclave 121C	96 Hours	-	-	-	3/231/0
ED	Electrical Characterization	Per Datasheet Parameters	-	-	-	1/30/0
HBM	ESD - HBM	4000 V	1/3/0	1/3/0	1/3/0	-
CDM	ESD - CDM	1000 V	1/3/0	1/3/0	1/3/0	1/3/0
HTOL	Life Test, 140C	480 Hours	1/77/0	-	-	-
LU	Latch-up	(per JESD78)	1/6/0	-	-	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	-	3/231/0

Type	Test Name / Condition	Duration	QBS Process Reference: UCD9248EPFC	QBS Package Reference: UCD3138ARGC	QBS Package Reference: UCD3138RMH
AC	Autoclave 121C	96 Hours	-	3/230/0	2/154/0
ED	Electrical Characterization	Per Datasheet Parameters	1/30/0	-	1/30/0
HBM	ESD - HBM	4000 V	-	-	-
CDM	ESD - CDM	1000 V	-	-	-
HTOL	Life Test, 140C	480 Hours	1/77/0	-	-
LU	Latch-up	(per JESD78)	1/6/0	-	-
TC	Temperature Cycle, - 65/150C	500 Cycles	1/77/0	3/230/0	2/154/0

- Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, Thermal Shock, and HTSL, as applicable

- The following are equivalent HTOL options based on an activation energy of 0.7eV : 125C/1k Hours, 140C/480 Hours, 150C/300 Hours, and 155C/240 Hours

- The following are equivalent HTSL options based on an activation energy of 0.7eV : 150C/1k Hours, and 170C/420 Hours

- The following are equivalent Temp Cycle options per JESD47 : -55C/125C/700 Cycles and -65C/150C/500 Cycles

Quality and Environmental data is available at TI's external Web site: <http://www.ti.com/>

**Green/Pb-free Status:**

Qualified Pb-Free(SMT) and Green

For questions regarding this notice, e-mails can be sent to the regional contacts shown below, or you can contact your local Field Sales Representative.

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Asia Pacific	<a href="mailto:PCNAsiaContact@list.ti.com">PCNAsiaContact@list.ti.com</a>
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