

**CHANGE NOTIFICATION**

Analog Devices, Inc.  
1630 McCarthy Blvd., Milpitas CA  
(408) 432-1900

November 09, 2018

PCN\_110918

Dear Sir/Madam:

**Subject: Notification of Wafer Fab Location Change for LT8640, LT8640-1**

Please be advised that Analog Devices, Inc. Milpitas, California is planning to close our Wafer Fab facility located at 275 S. Hillview Dr., Milpitas. We are hereby requesting your expedited approval of this PCN. Due to this future closure of Wafer Fab facility, the devices LT8640 and LT8640-1 manufactured using 0.35 BCD process will be affected and transferred to Vanguard International Semiconductor, Taiwan as part of expanding our business partnership. Vanguard International Semiconductor third party certifications and capacity details are attached for your review. Additional information can be found at <http://www.vis.com.tw>.

The qualification of the Vanguard International Semiconductor consisted of 1,000 hours of op-life testing, temp cycle, highly accelerated stress test, autoclave, and 1,000 hours of bake at 150°C. The devices have been characterized over the full operating temperature range and have been subjected to ESD testing and latch up immunity testing. The devices have been found to meet the ADI data sheets. Additionally, devices from the Vanguard International Semiconductor were carefully compared to the ADI fabricated devices to ensure identical performance when installed in customer applications.

Affected part numbers	
1	LT8640EUDC#PBF
2	LT8640IUDC#PBF
3	LT8640HUDC#PBF
4	LT8640EUDC-1#PBF
5	LT8640IUDC-1#PBF
6	LT8640HUDC-1#PBF
7	LT8640EUDC#TRPBF
8	LT8640IUDC#TRPBF
9	LT8640HUDC#TRPBF
10	LT8640EUDC-1#TRPBF
11	LT8640IUDC-1#TRPBF
12	LT8640HUDC-1#TRPBF

Confidential Statement

This change notice is for Analog Devices, Inc.'s customers only.  
Distribution or notification to third parties is prohibited.

The devices manufactured in Vanguard International Semiconductor will have the same part number and the same top mark as those manufactured at ADI. However, when necessary we can use our lot number traceability system to identify where and when a device was fabricated.

We are currently increasing production of new products in Vanguard, and we are not releasing new products in our Hillview fab. We are actively transferring existing products from our Hillview fab to Vanguard. By February 2021, all production in Hillview will cease.

Analog devices will accept sample requests for parts built at Vanguard Semiconductor International within 30 days of the date of this notification. If we do not hear back from your company within 30-day period, we will consider this change notice accepted by January 09, 2019. Production shipments of the products built at Vanguard Semiconductor International will begin no sooner than January 09, 2019.

Should you have any questions or concerns please contact your local Analog Devices sales representatives or you may contact me at 408-432-1900 ext. 2077, or by e-mail at [JASON.HU@ANALOG.COM](mailto:JASON.HU@ANALOG.COM). If I do not hear from you by January 09, 2019, we will consider this change to be approved by your company.

Sincerely,

Jason Hu  
Quality Assurance Engineer

**For questions on this PCN, please contact Jason Hu or you may send an email to your regional contacts below or contact your local ADI sales representatives.**

<b>Americas:</b> PCN_Americas@analog.com	<b>Europe:</b> PCN_Europe@analog.com	<b>Japan:</b> PCN_Japan@analog.com
		<b>Rest of Asia:</b> PCN_ROA@analog.com



**Vanguard International  
Semiconductor Corporation**

**Vanguard International Semiconductor Summary**

- Plant Address  
123, Park Ave-3rd, Science-Based Industrial Park, Hsinchu, Taiwan 30077, R.O.C.
- Headcount  
5,200
- Total Building size in sq. ft. and fab size in sq. meters  
880,543.3 sq. feet (Building 1)
- Clean room floor space in sq. meters  
12,600 sq. meters (Building 1)
- Fab utilization in percent  
Fab 1: 100%
- Land Area in sq. meters  
41,925 sq. meters
- Wafer capacity for each facility  
Fab 1: 87K wafers per month (ADI's material is scheduled to run in Fab 1)
- A list of certifications (i.e. TS16949, ISO-14001, etc.)
  - ISO 9001 Quality Management System (since 1996)
  - ISO 14001 Environment Management System (since 1997)
  - OHSAS 18001 Health & Safety Management System (since 2003)
  - QC 080000 Hazardous Substance Management System (since 2007)
  - ISO 27001 Information Security Management System (since 2015)

- IATF 16949 Automotive Quality Management System (since 2018)

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**RELIABILITY DATA**  
**LT8640 Fab Transfer**  
**11/7/2018**

• OPERATING LIFE TEST					
PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE HOURS AT +150°C	NUMBER OF FAILURES
QFN	234	1741	1805	231	0
Total	234			231	0
• EARLY LIFE FAILURE RATE					
PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE HOURS AT +150°C	NUMBER OF FAILURES
QFN	2508	1741	1805	120.38	0
Total	2508			120.38	0
• HIGHLY ACCELERATED STRESS TEST (HAST) AT +130°C / 85%RH					
PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	Equivalent K DEVICE HOURS AT +85°C	NUMBER OF FAILURES
QFN	240	1741	1805	921.6	0
Total	240			921.6	0
• PRESSURE COOKER TEST (PCT) AT 15PSIG, +121°C					
PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE HOURS	NUMBER OF FAILURES
QFN	300	1741	1805	50.4	0
Total	300			50.4	0
• TEMPERATURE CYCLE (TC) TEST AT -65°C to +150°C					
PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE CYCLES	NUMBER OF FAILURES
QFN	299	1741	1805	598	0
Total	299			598	0
• HIGH TEMPERATURE STORAGE LIFE TEST AT +175°C					
PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE HOURS	NUMBER OF FAILURES
QFN	149	1741	1805	149	0
Total	149			149	0
(1) Sample size too small for meaningful FIT calculations. (2) Failure Rate Equivalent to +55C, Assuming 60% Confidence Level & Activation Energy of 0.7eV = 9.95FIT (3) Mean Time Between Failures (MTBF) = 11,475 yr Assumes 20X acceleration from +85°C to +130°C. Note: HAST, PCT, and TC tests are preceded by JEDEC Preconditioning: 168h 85°C/85% R.H. plus 3x IR at 260°C Note: 1 FIT = 1 Failure in One Billion Hours.					