

PRODUCT CHANGE NOTIFICATION



Linear Technology Corporation
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(408) 432-1900

December 14, 2016

PCN# 121416

Dear Sir/Madam:

Subject: Notification of Change for LT3690 with solder die attach (95Sn5Sb) to be assembled at the Linear Technology Factory in Penang

Linear Technology is pleased to announce that we have passed all of the initial qualification tests required to build LT3690 in our own factory in Penang, Malaysia.

The LTC Penang factory will serve as an additional assembly location for LT3690. The Penang plant is a mature manufacturing facility, which has been manufacturing a variety of plastic packages since November 1994. We have now added the necessary manufacturing capability to assemble our own LT3690 QFN package with solder die attach (95Sn5Sb).

The assembly plant in Penang is 100% owned and operated by Linear Technology and is equipped with the latest state-of-the-art assembly equipment. Attached you will find qualification results of LT3690 devices used to qualify the Penang assembly location. We performed tests such as high temperature storage bake, temp cycle, thermal shock, solderability, bond pull, x-ray inspection and scanning acoustic microscopy to qualify these packages. These qualification lots are continuing reliability testing to achieve long-term reliability information.

Additionally, as with all changes of this nature, Linear Technology will perform reliability monitor testing on all lots processed in Penang under our Quick Reaction Reliability (QR²) program. Approximate datecode of the first units assembled at LTC Penang will be 1549.

Should you have any further questions, please feel free to contact your local Linear Technology sales person or you may contact me at 408-432-1900 ext. 2077, or by E-mail JASON.HU@LINEAR.COM. If I do not hear from you before February 14, 2017, we will consider this change to be approved by your company.

Sincerely,

Jason Hu

Quality Assurance Engineer

RELIABILITY DATA

LTC Penang Assembly Location for LT3690

12/8/2016

• **PRESSURE COOKER TEST AT 15 PSIG, +121°C**

PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE HOURS	NUMBER OF FAILURES
QFN	231	1549	1551	44.35	0
	231			44.35	0

• **TEMP CYCLE FROM -65°C to +150°C**

PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE CYCLES	NUMBER OF FAILURES
QFN	231	1549	1551	462.00	0
	231			462.00	0

• **THERMAL SHOCK FROM -65°C to +150°C**

PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE CYCLES	NUMBER OF FAILURES
QFN	230	1549	1551	460.00	0
	230			460.00	0

• **HIGH TEMPERATURE BAKE +175°C**

PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE HOURS	NUMBER OF FAILURES
QFN	150	1549	1551	150.00	0
	150			150.00	0

• **SOLDER SHOCK**

PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE		NUMBER OF FAILURES
QFN	150	1549	1551		0
	150				0