

## CHANGE NOTIFICATION



Linear Technology Corporation  
1630 McCarthy Blvd., Milpitas, CA 95035-7417  
(408) 432-1900

May 13, 2015

Dear Sir/Madam:

PCN# 051315

### **Subject: Notification of Additional Assembly Location, ASE Korea for LTM8025**

Please be advised that Linear Technology Corporation has successfully qualified ASE Korea as an assembly site for the subject packages. It was desirable to qualify ASE Korea to serve as an alternate source since it is located in a different geographic area than our existing assembly location in Penang, Malaysia. ASE Korea is ISO9002, QS9000, ISO14001, TS16949, OHSAS 18001 and QC80000 certified. A summary of ASE Korea's product mix and LTC's qualification results are shown on the attached pages. The facility passed a site audit by LTC's supplier quality organization. LTC product assembled in ASE Korea can be identified by the country of origin marked on the device as "KR". The product photo showing the ASE Korea marking is attached. The Approximate datecode of the first units assembled by ASE Korea, and the list of affected part numbers is presented below in the table.

Part Number	Part Marking	Package Type	Datecode (Approx.)
LTM8025EY#PBF	LTM8025Y	BGA	1509
LTM8025IY#PBF	LTM8025Y	BGA	
LTM8025EV#PBF	LTM8025V	LGA	
LTM8025IV#PBF	LTM8025V	LGA	

The change was qualified by performing extensive characterization over the full operating voltage and temperature ranges and MSL3 preconditioning as well as 1000 cycles of temperature cycles and thermal shock. Devices from the same  $\mu$ Module device product family have been subjected to 1000 hrs. burn-in without failure. Linear Technology performs reliability testing on production lots in accordance with our Quick Reaction Reliability (QR2) Monitor Program. This monitor program is designed to provide fast feedback for possible reliability problems associated with package assembly. Please provide an expeditious approval to this PCN, so that LTC can build subject packages at ASE.

Should you have any concerns, please contact me before July 13, 2015, at which time we will consider this change to be approved. If you have any questions or concerns, please feel free to contact me at (408) 432-1900 ext. 2077 or by e-mail at [JASON.HU@LINEAR.COM](mailto:JASON.HU@LINEAR.COM).

Sincerely,

Jason Hu  
Quality Assurance Engineer

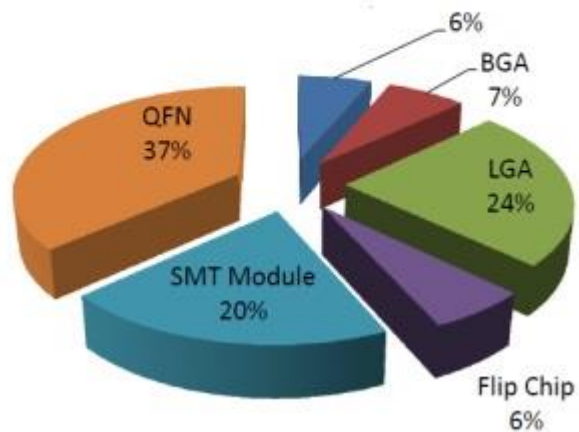
## ASE Korea Capacity Summary

ASE Korea  
76, Saneopdanji-gil, Paju-si,  
Gyeonggi-do, Korea  
Tel: 82-31-9400-114, 82-31-9400-539  
Head counts: 2,791

# Package Portfolio - Breakdown

- Analog Power for Automotive
- RF for digital/consumer
- MEMS for safety
- Array Packages

## 2013 Production Mix by Package



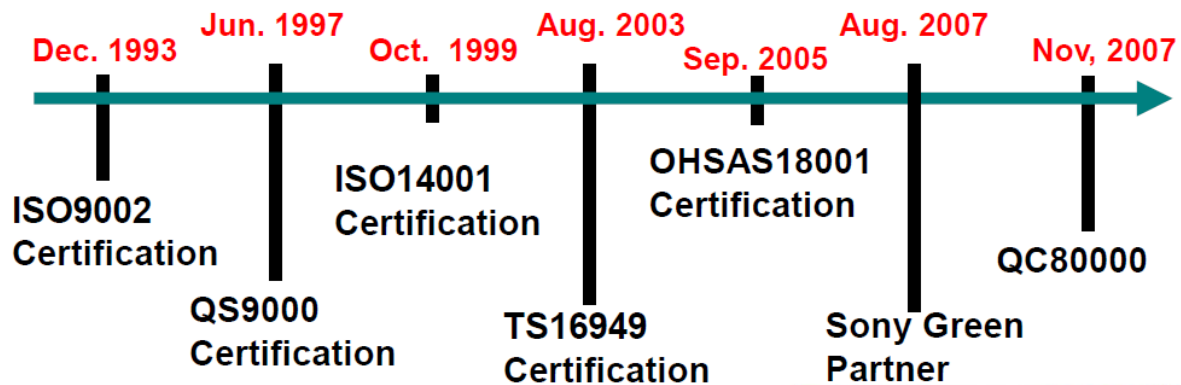
# Quality System Certification



- ISO9002 certified by SGS-Yarsely in December 1993.
- QS9000 certified by LRQA in June 1997
- ISO14001 certified by LRQA in October 1999
- TS16949 certified by LRQA in August 2003
- OHSAS18001 certified by KFQ in September 2005
- Sony Green Partner certified by Sony in August 2007
- QC80000 certified by SGS in November 2007

\*Surveillance Audit : Every 6 Months

## --- Assessment History-----



Country of Origin on Top Mark



PACKAGE RELIABILITY DATA					
LTM8025 ASE ASSEMBLY SITE QUALIFICATION					
4/29/2015					
• J-STD-020 MSL 3 PRECONDITIONING: 192h +30°C/60%R.H. SOAK, 3x REFLOW AT +250°C PEAK					
DEVICE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE		NUMBER OF FAILURES
LTM8025 LGA	1,153	1502	1509		0
LTM8025 BGA	692	1509	1509		0
	1,845				0
• TEMP CYCLE FROM -55°C to +125°C <sup>(1)</sup>					
DEVICE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE CYCLES	NUMBER OF FAILURES
LTM8025	77	1502	1502	77.00	0
	77			77.00	0
• TEMP CYCLE FROM -65°C to +150°C <sup>(1)</sup>					
DEVICE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE CYCLES	NUMBER OF FAILURES
LTM8025	77	1502	1502	77.00	0
	77			77.00	0
• THERMAL SHOCK FROM -55°C to +125°C <sup>(1)</sup>					
DEVICE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE CYCLES	NUMBER OF FAILURES
LTM8025	75	1502	1502	75.00	0
	75			75.00	0
• THERMAL SHOCK FROM -65°C to +150°C <sup>(1)</sup>					
DEVICE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE CYCLES	NUMBER OF FAILURES
LTM8025	77	1502	1502	77.00	0
	77			77.00	0
• UNBIASED HIGHLY ACCELERATED STRESS TEST +130°C/85% R.H. <sup>(1)</sup>					
DEVICE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE HOURS AT +130°C	NUMBER OF FAILURES
LTM8025	77	1502	1502	7.39	0
	77			7.39	0
• HIGH TEMPERATURE STORAGE +150°C					
DEVICE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE HOURS AT	NUMBER OF FAILURES
LTM8025	77	1502	1502	77.00	0
	77			77.00	0
(1) Environmental stress are preceded by J-STD-020 Level 3 Preconditioning: 192h 30°C/60% R.H. soak, followed by 3x Reflow at 245°C peak body temperature.					