# **CHANGE NOTIFICATION**



December 12, 2014

Dear Sir/Madam:

PCN#121214

### Subject: Notification of Additional Assembly Location, ASE Korea for LTM8029

Please be advised that Linear Technology 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 photos showing the ASE Korea marking are attached. The datecode of the first units assembled by ASE Korea will be approximately 1437. The list of affected part numbers is presented below in the table.

Part Number	Part Marking	Package Type	Datecode (Approx.)
LTM8029EY#PBF	LTM8029Y	BGA	
LTM8029IY#PBF	LTM8029Y	BGA	1437
LTM8029MPY#PBF	LTM8029Y	BGA	

Additionally, 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 February 12, 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.

Sincerely,

Jason Hu Quality Assurance Engineer

### ASE Korea Capacity Summary

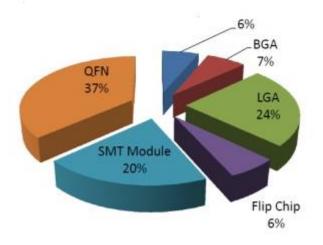
ASE Korea 76, Saneopdanji-gil, Paju-si, Gyeonggi-do, Korea Tel: 82-31-9400-114, 82-31-9400-539 Head counts: 2,791

# Package Portfolio - Breakdown 🎇 ASE GROUP



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

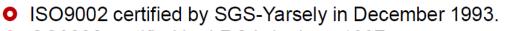
## 2013 Production Mix by Package



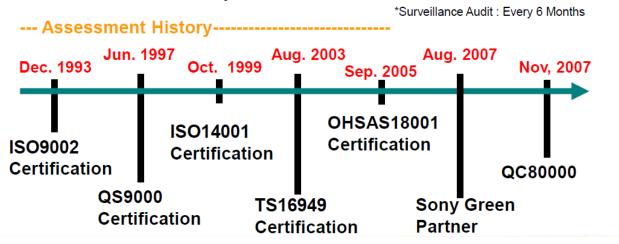
**Confidential Statement** This change notice is for Linear Technology's Customers only. Distribution or notification to third parties is prohibited.

# **Quality System Certification**





- 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



#### **Country of Origin on Top Mark**





PACKAGE RELIABILITY DATA LTM8029 ASE ASSEMBLY SITE QUALIFICATION								
12/9/2014								
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		OF FAILURES			
LTM8029	993 993	1437	1437		0			
• TEMP CYCLE FROM -55°C to +125°C <sup>(1)</sup>								
DEVICE TYPE	SAMPLE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE CYCLES	NUMBER OF FAILURES			
LTM8029	231 231	1437	1437	110.19 110.19	0			
• TEMP CYCLE FROM -65°C to +150°C (1)								
DEVICE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE CYCLES	NUMBER OF FAILURES			
LTM8029	150 150	1437	1437	75.00 75.00	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			
LTM8029	231 231	1437	1437	115.50 115.50	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			
LTM8029	150 150	1437	1437	150.00 150.00	0			
UNBIASED HIGH	LY ACCELERATED	STRESS TEST +13	0°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			
LTM8029	231 231	1437	1437	11.09 11.09	0 0			
<ul> <li>HIGH TEMPERAT</li> </ul>	URE STORAGE +1	50°C						
DEVICE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE HOURS AT	NUMBER OF FAILURES			
LTM8029	231 231	1437	1437	115.50 115.50	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 250°C								