

CHANGE NOTIFICATION



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

December 16, 2011

PCN# 121611

Dear Customer:

**Subject: Notification: Cirtek Electronics Corporation Qualified for Assembly of TO-92
(3 Lead Plastic, Z-Package)**

Linear Technology Corporation has successfully qualified Cirtek Electronics Corporation for assembling plastic TO-92 packages (3 Lead Plastic, Z-Package). Our current assembly sub-contractor will no longer support this package. Cirtek Electronics Corporation is ISO-14001 and ISO/TS16949 certified. A summary of Cirtek's capacity and LTC's qualification results are shown on the attached pages. LTC's quality engineer has physically audited the facility. In addition, our Far East Quality Surveillance Engineer will regularly perform monitors and inspections in Cirtek. LTC product assembled in Cirtek can be identified by the Country of Origin marked on the devices as "P". The datecode of the first units assembled by Cirtek will be approximately 1140.

Additionally, as with all changes of this nature, Linear Technology will perform reliability testing on all of the first production lots in accordance with our Quick Reaction Reliability (QR2) Monitor Program. This monitor program is designed to provide fast feedback and to protect our customers from possible reliability problems associated with package assembly.

Should you have any concerns, please contact me before January 16, 2012, 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.

Sincerely,

Jason Hu
Quality Assurance Engineer

Confidential Statement

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

Cirtek Capacity Summary

Cirtek Electronics Corporation

Plant Address : 116 East Main Avenue, Phase V, SEZ
Laguna Technopark, Binan, Laguna
PHILIPPINES
Tel: (63) 49-541-2310 to 15
Fax: (63) 49- 541-2317
Website: www.Cirtek-Electronics.com

Headcount: 1,400

Sq. Feet: 150,000 Class 10K IC assembly and test capabilities

Packages: SOIC, PDIP, QFN, SOT, QSOP, TO, LGA, Hermetic packages (metal cans, ceramic packages), hybrid assemblies, PCB

Certifications: ISO-14001, TS16949

Floor space Utilization: 70%

Land Area: 5 acres

Package Capacity

TO92 = 4,200,000

QFN = 5,000,000

SOT 23 = 10,000,000

Hermetic package = 70,000

QSOP = 10,000

Others = as required

Total Current Capacity 30 M/week

Cirtek History:

CIRTEK was incorporated in May 1984 as an independent and privately owned subcontractor for semiconductor devices. CIRTEK provides complete turnkey solutions that include services from wafer probe, wafer back grinding, assembly and packaging and final testing of semiconductor devices up to drop shipments to the Customer's end users.

Package offering ranges from simple single IC to multiple die assembly and from simple components assembly to complex networks multi-component devices. Package outlines are either customer specific and/or compliant to the **JEDEC** standard.

Cirtek Electronics is certified to the latest quality system standard (**ISO/TS16949, ISO14001**). Manufacturing practices are designed to become compliant with the industry standards and to exceed customer's expectations. Cirtek is aggressively expanding its assembly and test operations in the Philippines. The company has earned its reputation from customers for high quality, flexibility, competitive costing and commitment to satisfy and exceed customer's requirements.

RELIABILITY DATA

Cirtek TO-92

12/13/2011

• HIGH TEMPERATURE BAKE DATA AT 175°C

PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE HOURS AT +175°C	NUMBER OF FAILURES
TO-92	150	1140	1140	150.00	0

• J-STD-020 PRECONDITIONING (168hr 85°C/85%RH, 3X IR REFLOW 260°C, CSAM)

PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE HOURS AT +85°C	NUMBER OF FAILURES
TO-92	462	1140	1140	77.62	0

• J-STD-020 PRECONDITIONING FOLLOWED BY PRESSURE COOKER TEST AT 15 PSIG, +121°C

PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE HOURS	NUMBER OF FAILURES
TO-92	226	1140	1140	37.97	0

• J-STD-020 PRECONDITIONING FOLLOWED BY TEMP CYCLE FROM -65°C to +150°C

PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE CYCLES	NUMBER OF FAILURES
TO-92	222	1140	1140	111.00	0

• J-STD-020 PRECONDITIONING FOLLOWED BY THERMAL SHOCK FROM -65°C to +150°C

PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE CYCLES	NUMBER OF FAILURES
TO-92	224	1140	1140	112.00	0

RELIABILITY DATA

Cirtek TO-92

12/13/2011

• SOLDER SHOCK (3 HRS PCT + 1 SOLDER IMMERSION 245°C)

PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	NUMBER OF FAILURES
TO-92	150	1140	1140	0

• SPECIAL TEST 1 (24 HOURS BAKE +125°C THEN 3X 96 HOURS 85/85 + 1X IR REFLOW +245°C)

PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	NUMBER OF FAILURES
TO-92	150	1140	1140	0

• SPECIAL TEST 2 (24 HRS BAKE +125°C, 2X IR REFLOW+245°C, 100 CYCLES TEMP CYCLE, 48 HRS PCT)

PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	NUMBER OF FAILURES
TO-92	149	1140	1140	0