



**LGE 鲁光电子**

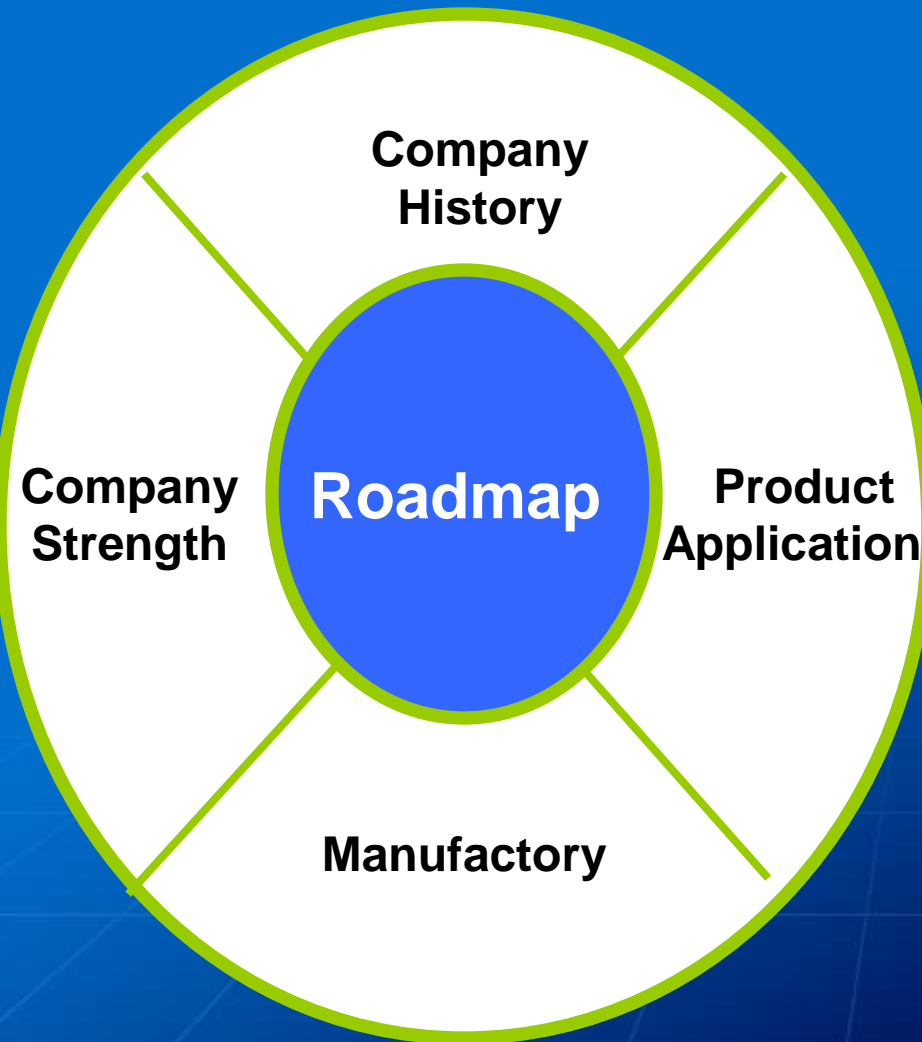
**Shenzhen LuGuang Electronic Tech. Co., Ltd.**

[www.luguang.cn](http://www.luguang.cn)



**LGE 鲁光电子**

[www.lgesemi.com](http://www.lgesemi.com)



# Roadmap

- **LGE to become a globally present World class Brand.**
- **Constant evolution to new and innovative products to satisfy the market demands.**
- **Continuously to Set up Overseas Branches and Development Centers.**
- **Continuously Increase Investment to Complete Full Automatic Production Lines in 2017.**

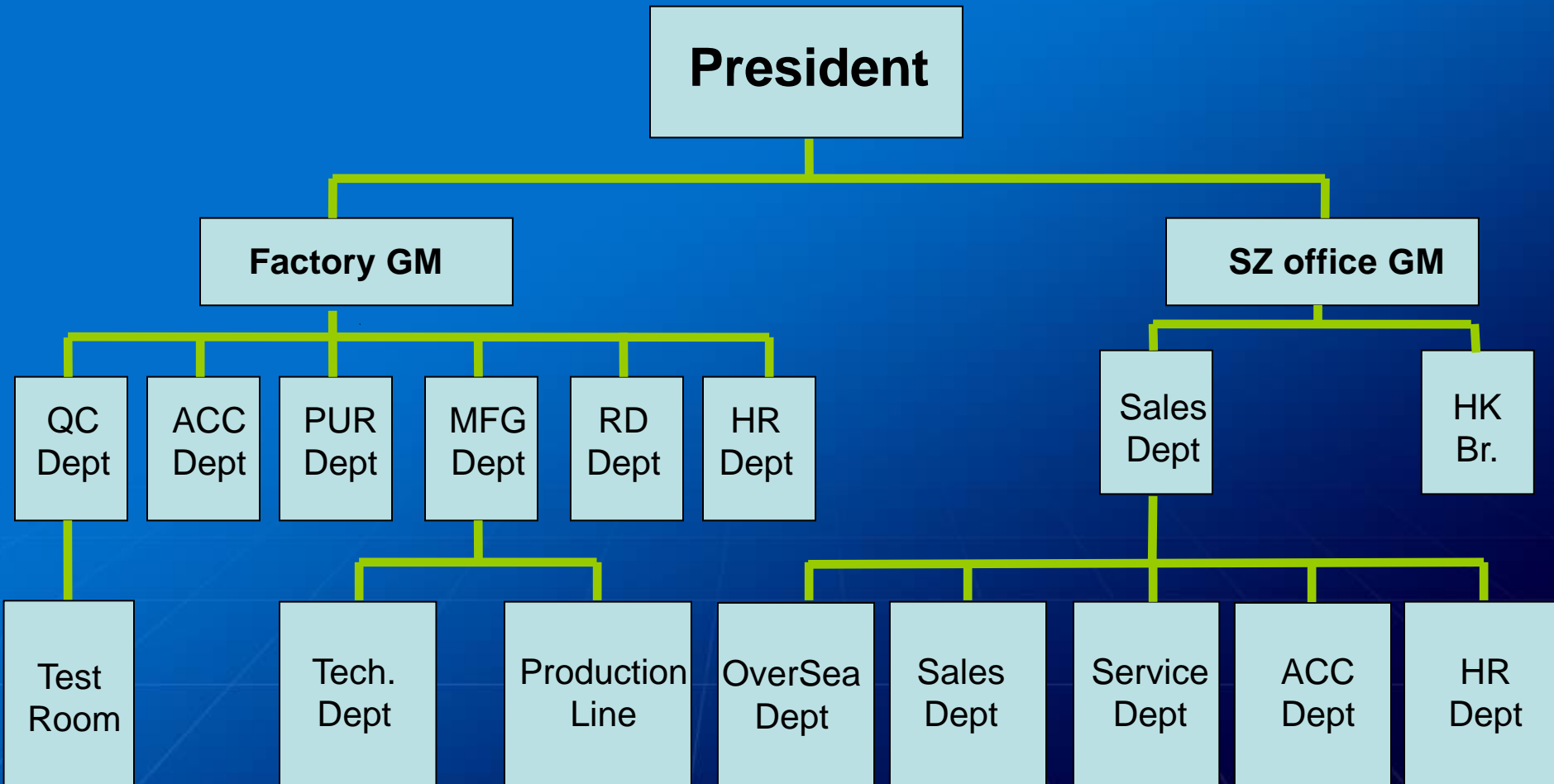
# Why Choose Us

- Advanced equipments, strictly process and quality management system.
- A wide range of products enables customers to have one destination shopping.
- The products comply with AEC-Q101 standard.
- Provide effective cost-down solutions to customers.
- Real time solutions with minimal delivery time.
- Flexible business mode to meet customer convenience.

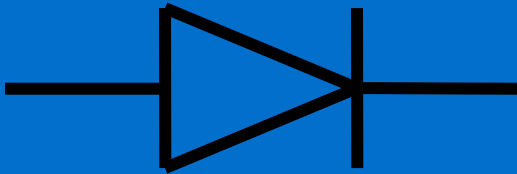
# History

- 2015,LGE is certified TS16949 and UL.
- 2015, LGE set up sales branch in New Delh India
- 2014,LGE successfully operated SMA full auto production line.
- 2013,LGE successfully operated the first SOD-123FL full-auto production line in mainland China.
- 2011,The Shandong Academy of Sciences and LGE Post-Doctoral Research Center was established.
- 2011,LGE got ISO9001, ISO14001 Certificates.
- December of 2010,Rizhao Plant put into trial production.
- July of 2009,LGE signed the land-use Contract with Rizhao government.And LGE new manufacturing base founded.
- Early of 2009,LGE made an on-spot investigation in Rizhao City and planed to set up a new plant in Rizhao city,Shandong Province
- 2005,LGE built up semiconductor development center, equipment lab, technology application center.
- 2002,LGE set up Technical Support Team
- 2000,LGE set up Shenzhen center office

# Organization



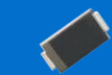
# Diodes Series



- Silicon Rectifiers
- Fast Recovery Rectifiers
- High Efficiency Rectifiers
- Super Fast Recovery Rectifiers
- Small Signal Schottky Diodes
- Schottky Barrier Rectifiers
- Transient Voltage Suppressor Diodes
- Small Signal Switching Diodes
- Zener Diodes
- Silicon Bidirectional Diac
- Bridge Rectifiers



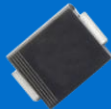
# SMT Packages



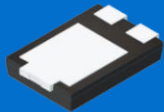
SMA



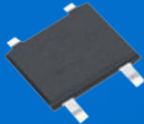
SMB



SMC



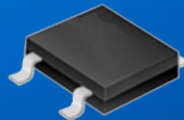
TO-277



DB-S



MBS



TBS



DO-213AB



DO-213AA



SOD-123FL



SOD-523



SOD-723



SOD-123



SOD-323



SOT-723



SOT-532



SOT-23



SOT-363



SOT-323



SOT-23-3L



SOT-89



SOT-223



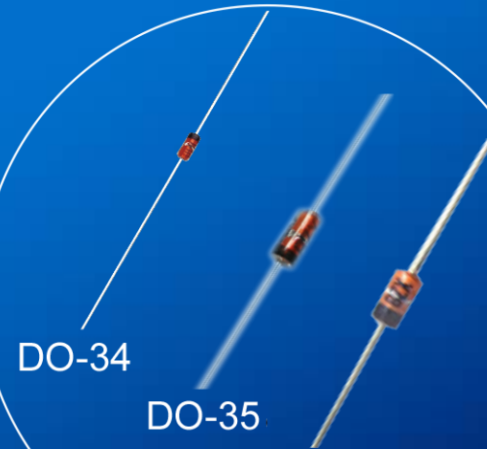
# Axial Packages



R-1 A-405 DO-15B DO-15L



DO-41 DO-15 R-3 DO-27 R-6



DO-34

DO-35

DO-41G

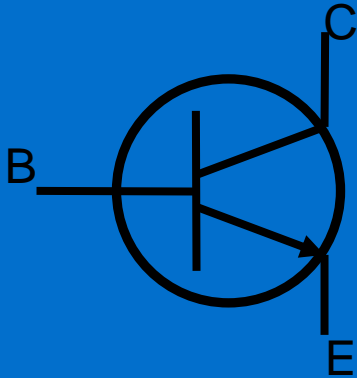


Micro Melf

Mini melf

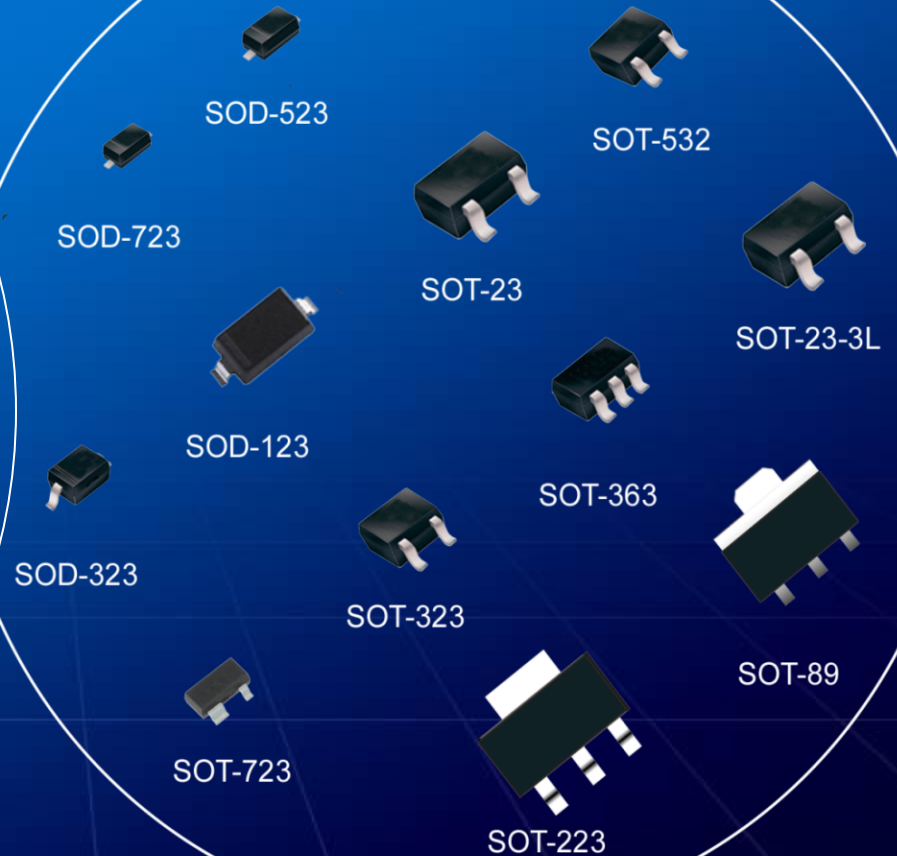
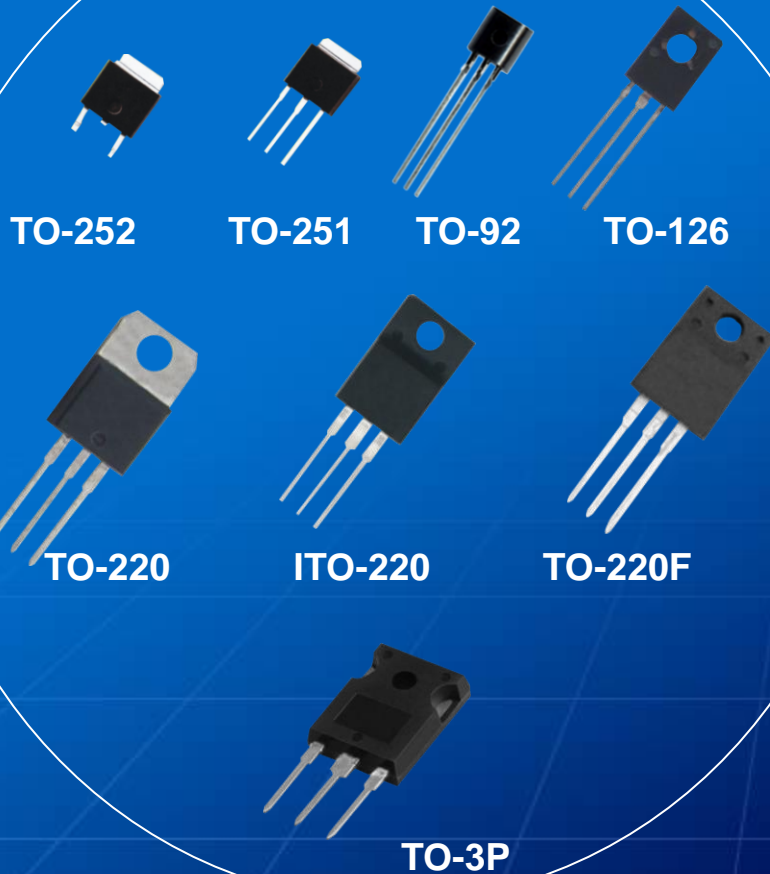
Melf

# Transistors Series



- Bipolar Transistors
- Switching Transistors
- Darlington Transistors
- Voltage Regulators
- Digital Transistors
- Field Effect Transistors
- Triacs

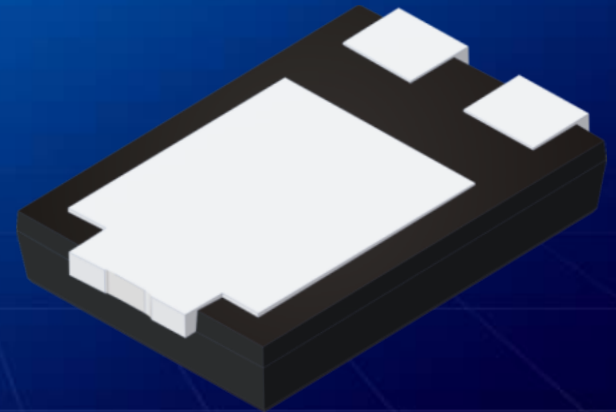
# Transistor Packages



# New Products

**TO-277 Low VF Schottky Barrier Rectifier** is a new design for widely used in Solar products, Automotive Industry, Tablets and Mini power banks etc.

- High forward surge capability
- Low power loss and high efficiency
- Excellent high temperature stability
- High current capability, low forward voltage
- Smaller size, for surface mountes application



# New Products

## AK3/AK6/AK10/AK15 Series

High current Transient Voltage Suppression Diodes have been specially designed for use in A.C. line protection and any demanding applications (AC or DC).

- Bi-directional
- Very low clamping voltage
- Sharp breakdown voltage
- Low slope resistance



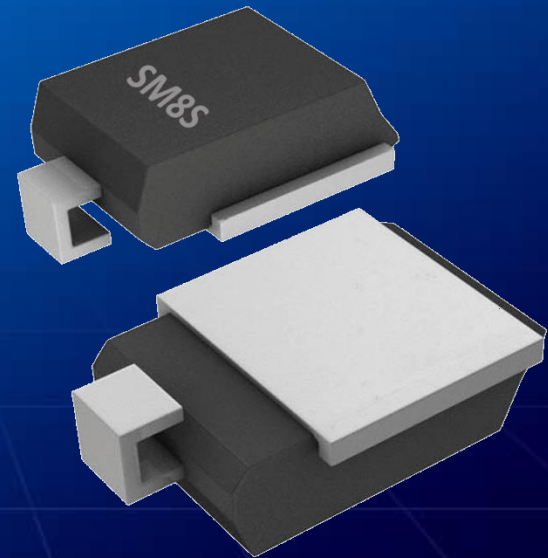


# New Products

## DO-218AB SM5S & SM8S

Transient Voltage Suppressor Diodes are used in sensitive electronics protection against voltage transients induced by inductive load switching and lighting, especially for automotive load dump protection application.

- Low leakage current
- Low forward voltage drop
- High surge capability
- Available in uni-directional polarity only
- RoHS compliant, high reliability/automotive grade





# New Products

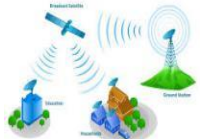
Schottky Barrier Rectifier TO-277 Package series (Super –current, Low VF)	SD10U45 SD10U50 SD10U60 SD15U45 SD15U50 SD15U60
GPP High Voltage Diodes	GL41T GL41Y SM513 SM516 SM518 SM2000 BY255 P600S R1600 R1800 R2000 R3000 R5000 R2000F R3000F R5000F BY133 S1T S1W S1X S1Y S2T S2W S2X S2Y S3T S3W S3X S3Y
High Voltage Transient Voltage Suppressor Diode	P4SMA250 P4SMA300 P4SMA350 P4SMA400 P4SMA440A P4SMA480 P4SMA510 P4SMA540 SMAJ250 SMAJ300 SMAJ350 SMAJ400 SMAJ440 SMABJ250A SMBJ300 SMBJ350 SMBJ400 SMBJ440 SMCJ250 SMCJ300 SMCJ350 SMCJ400 SMCJ440 P6SMB250A P6SMB300 P6SMB350 P6SMB400 P6SMB440 P6SMB510 P6SMB540
SMD Mini Schottky Bridge Rectifier	MBSK12S MBSK14S MBSK16S MBSK18S MBSK110S MBSK120S MBSK22S MBSK24S MBSK26S MBSK28S MBSK210S MBSK220S
Low VF Schottky Diode	SK12L SK14L SK22L SK24L SK32L SK34L SK52L SK54L DFLS120L DFLS130L DFLS140L DFLS220L DFLS230L DFLS240L DFLS240S DFLS320S DFLS330S DFLS340L

# Applications



## **Automotive:**

Power train  
Chassis/Safety  
Body Electronics  
Interior and Infotainment



## **Telecommunication:**

Xdsl Modem/Router  
VoIP System IP



## **Portable Devices:**

HDMI Interface  
Media Player  
Digital Still Camera  
Navigation System  
SD Memory Card Interface  
Cell Phone ;Intelligent Mobile  
HDD  
Pico Projector



## **Consumer:**

Set-Top Box  
Refrigerator  
Oral Care  
Intelligent Watch



## **Lighting:**

CFL  
HID  
MR-16  
LED Bulb  
Ballast  
Intelligent LED



## **Computing:**

Desktop PC  
Laptop  
Tablet



## **Power Management:**

Power Supply  
Adaptor  
Charger  
UPS  
Power Bank



## **Industrial:**

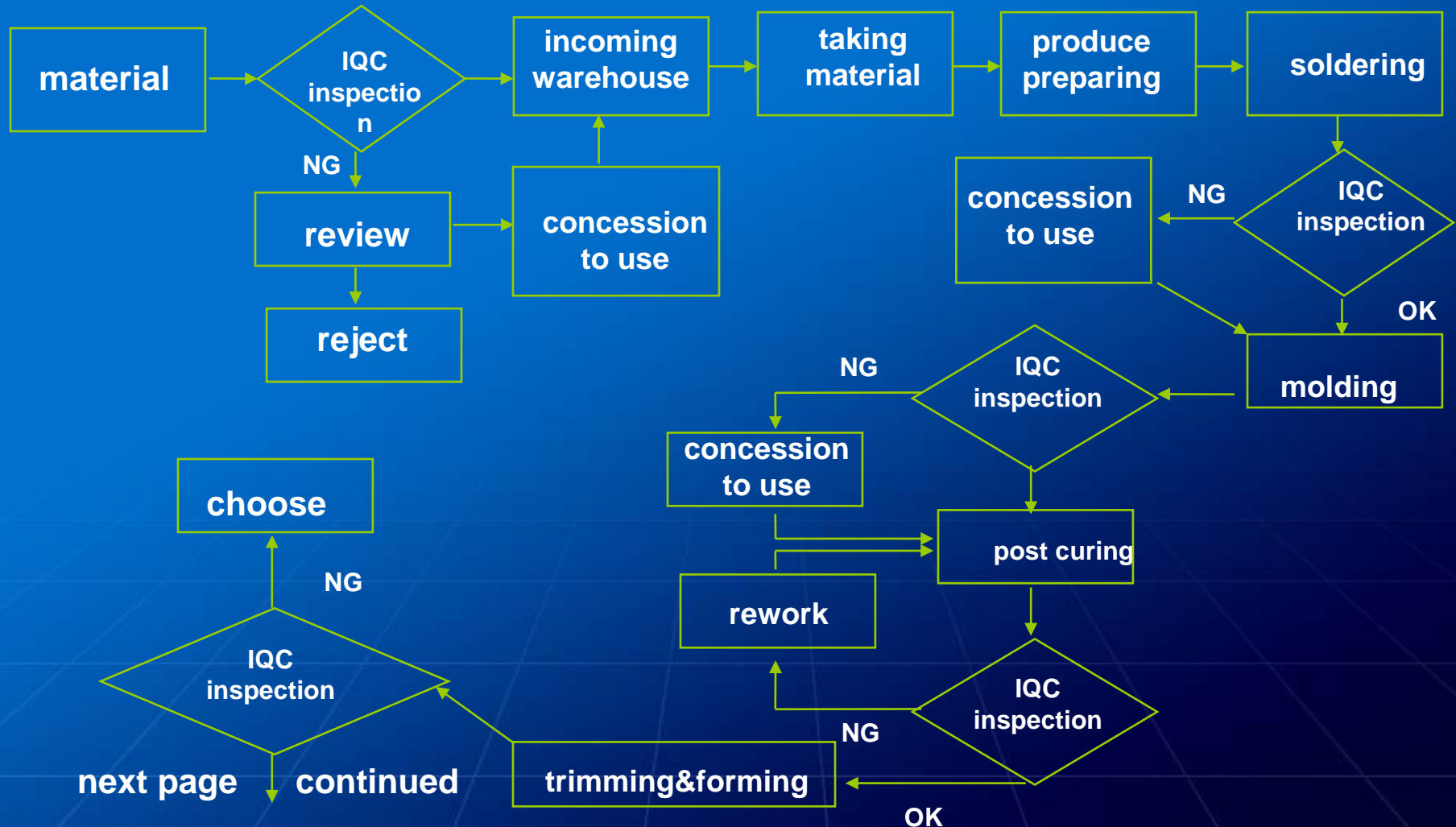
AC Motor Drive  
Electronic Energy Meter  
Solar Power String  
Welding Machine  
Power Tool  
Intelligent Meter

# Manufactory

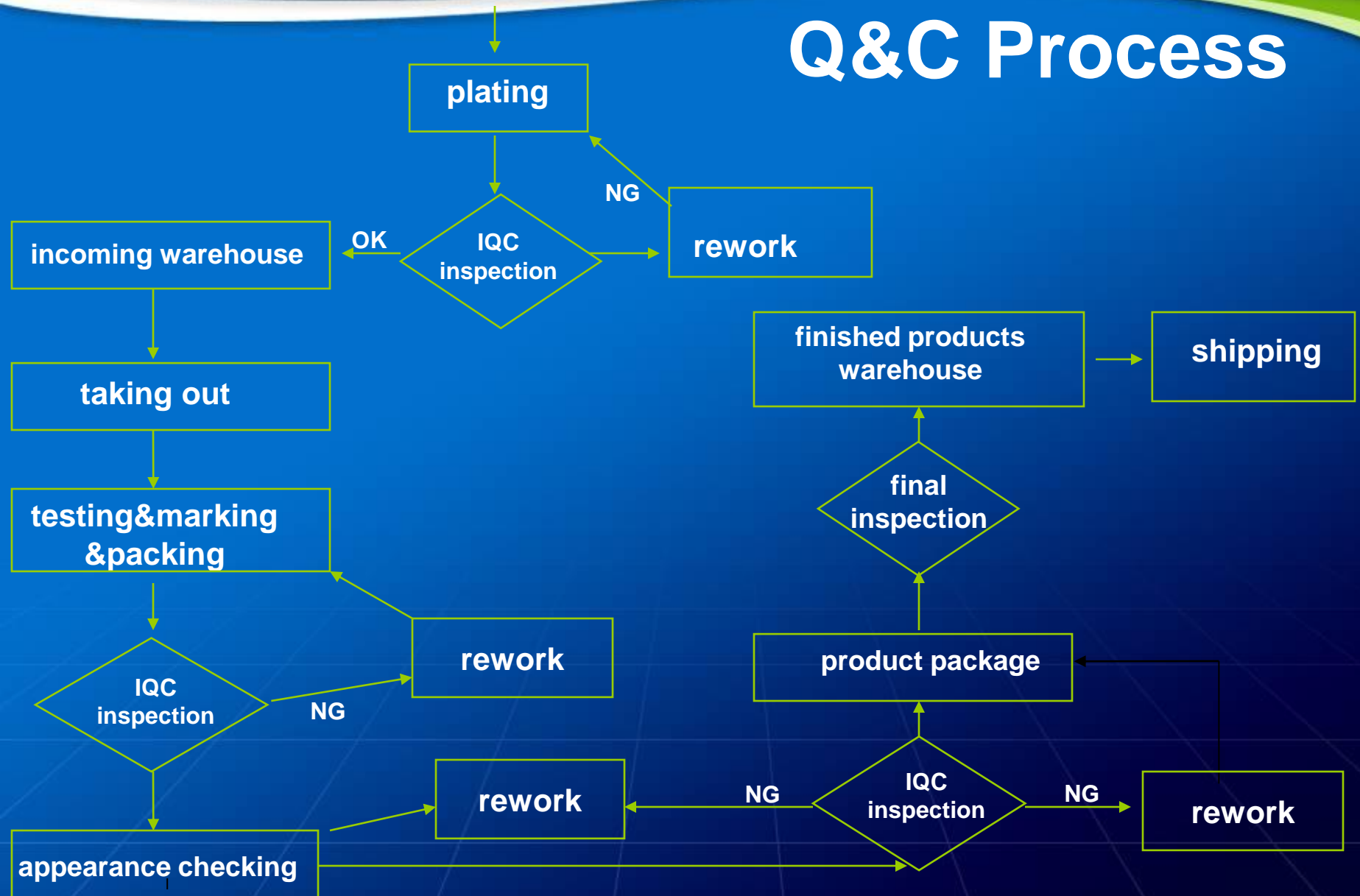




# Q&C Process



# Q&C Process



# Trade Shows

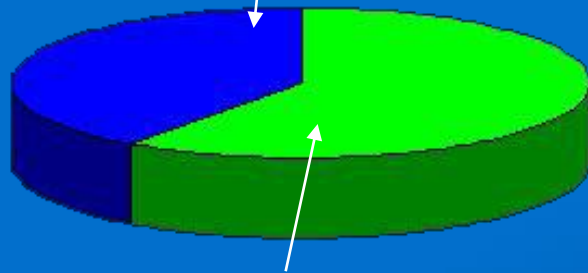
LGE is attending the worldwide related electronics exhibition every year.





# Business Shares

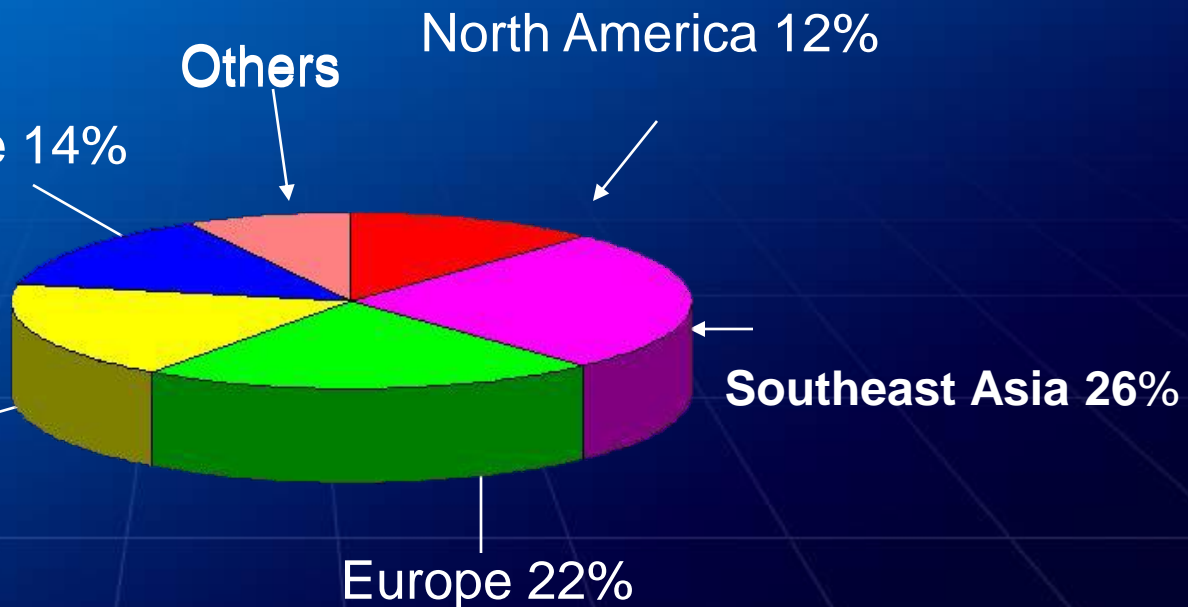
Overseas Market 40%



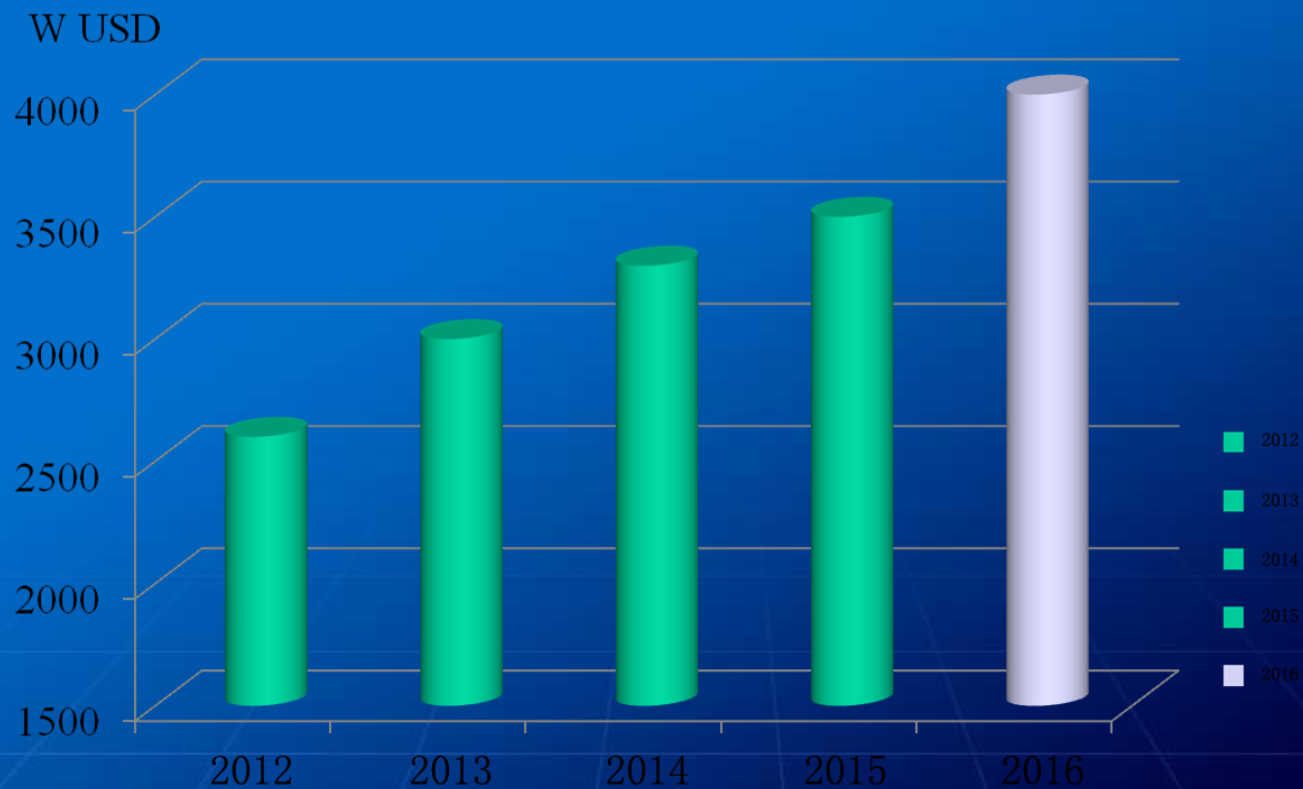
Domestic Market 60%

Eastern Europe 14%

South America 18%



# Yearly Turnover



# Fab Quality Guaranty System

## ■ Decap Chip test

- Chip size, Thickness , Design comparison Test



## ■ Mold Structure test

- Mold, Lead wire, Chip Shift, Confirmation of Formability



## ■ Limit Test

- Verification of chip limit through IFSM / Reverse Surge test
- Verification of any change of chip caused by over current or reverse voltage



## ■ Characteristics Data Cpk / Management of History

- Trr, VF, Vr, Ir, IFSM, R/S evaluation Data comparison management
- Characteristics Data Cpk control chart Trand management



# High Reliability Experiment

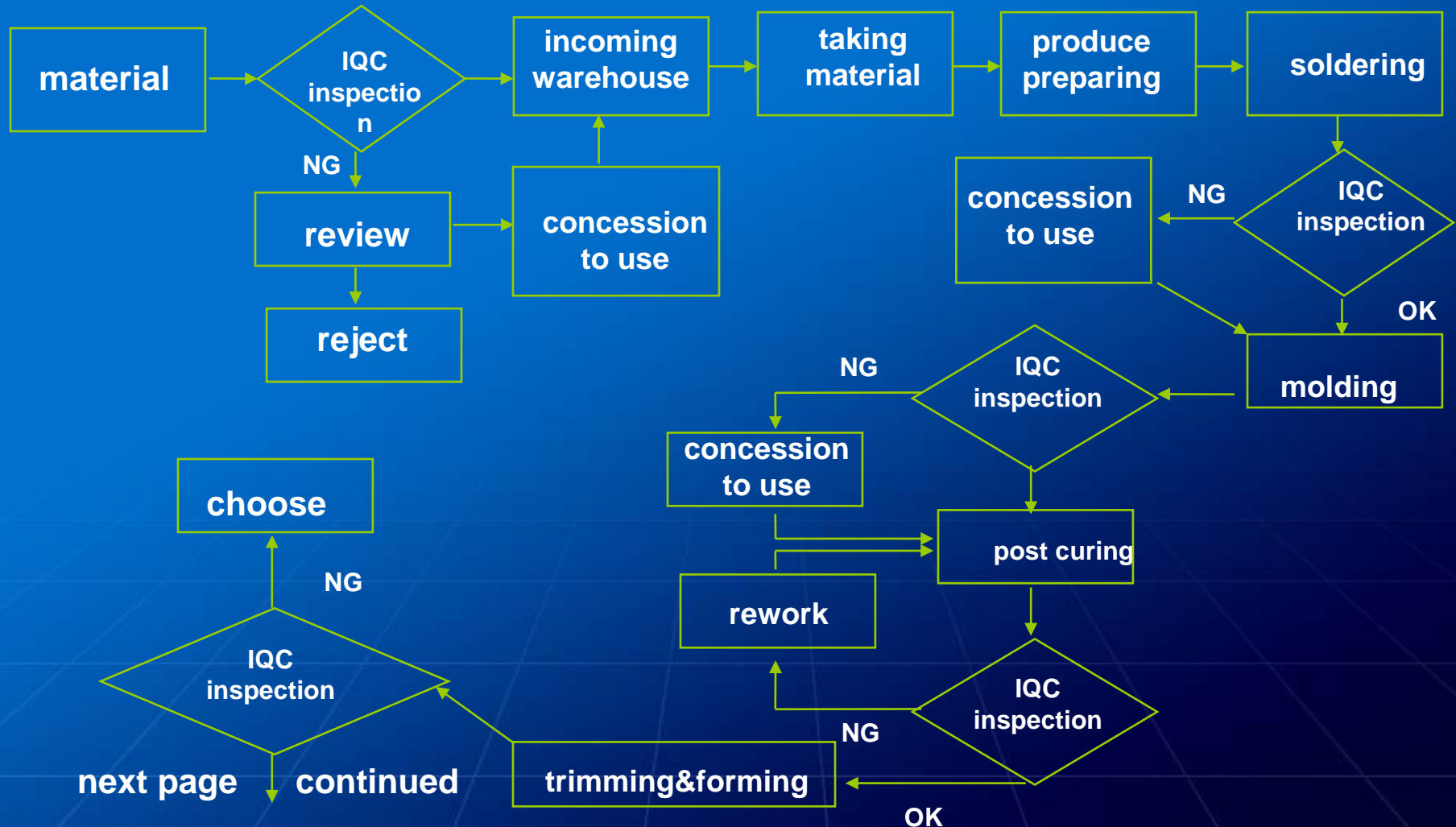
NO	TEST ITEM	TEST CONDITIONS	DURATION	REFERENCED DOCUMENT
1	SOLDER ABILITY	255±5℃	5 SEC	MIL-STD-202 METHOD-208
2	LEAD PULL	2KG INAXIAL LEAD DIRECTION	10 SEC	MIL-STD-750 METHOD-2036
3	LEAD FATIGUE	90-DEGREE BEND WITH 0.5KG WEIGHT ATTACHED TO LEAD	3 TIMES	MIL-STD-750 METHOD-2036
4	OPERATING LIFE	RATED CURRENT @55℃ RATED VOLTAGE	168/1000 HRS	MIL-STD-750C METHOD-1027
5	HIGH TEMPERATURE REVERSE BLAS	80% RATED VOLTAGE 125℃ FOR STD TYPE 150℃ FOR GPP TYPE	168/1000 HRS	MIL-STD-750 METHOD-1038
6	INTERMITTENT OPERATING LIFE	ON:5MIN WITH RATED IRMS POWER OFF:5MIN COOL FORCED AIR	1000 CYCLES	MIL-STD-750 METHOD-1036
7	FORWARD SURGE CURRENT	8.3ms SINGLE HALF SINE-WAVE SUPERIMPOSED ON RATED LOAD	1 PULSE	MIL-STD-750 METHOD-4066

# High Reliability Experiment

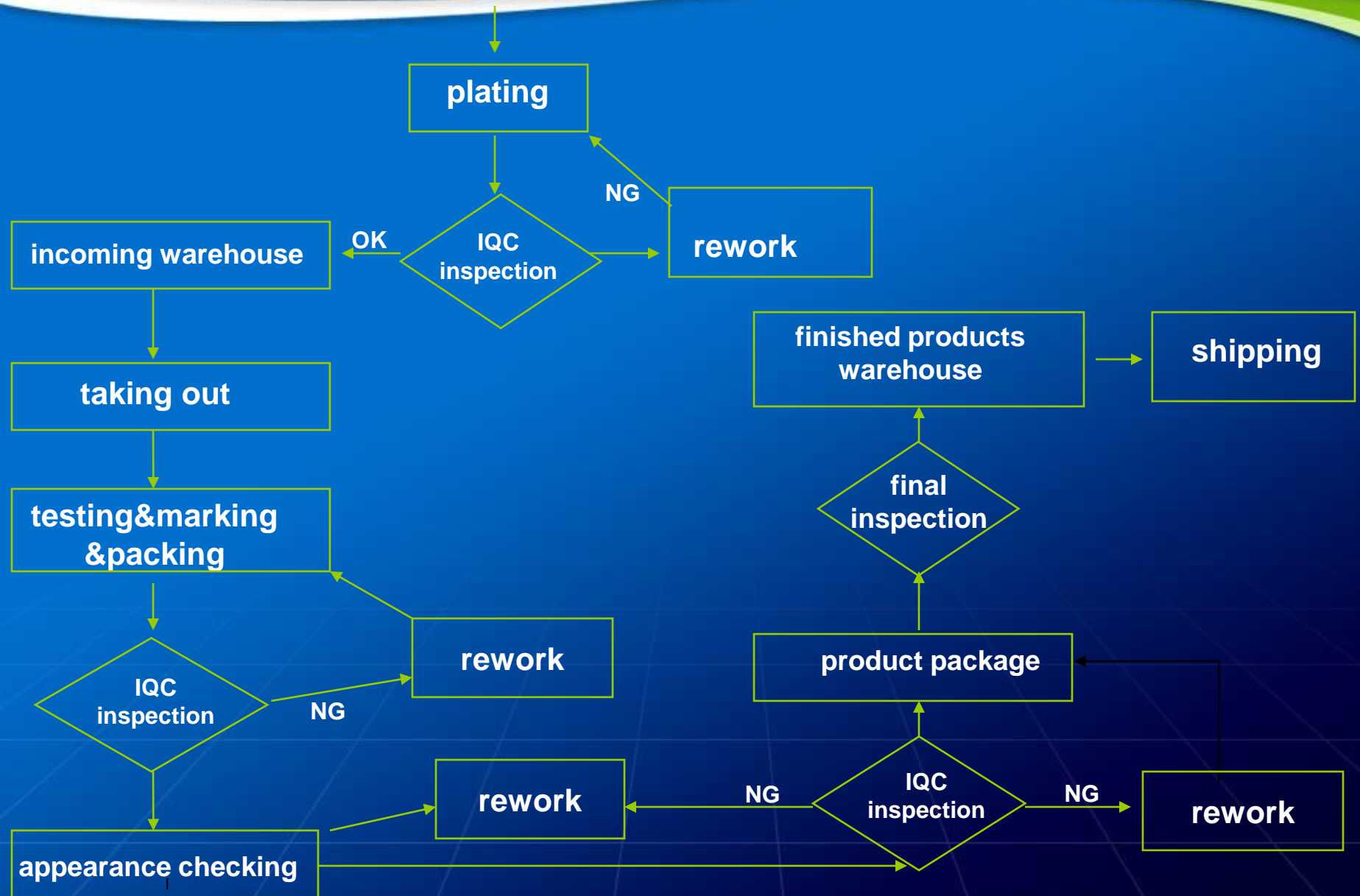
NO	TEST ITEM	TEST CONDITIONS	DURATION	REFERENCED DOCUMENT
8	HIGH TEMPERATURE STORAGE LIFE	TSTG (max)	168/1000 HRS	MIL-STD-750 METHOD-1031
9	LOW TEMPERATURE STORAGE LIFE	TSTG (min)	168/1000	IEC-68-2-1 TEST A:COLD
10	MOISTURE RESISTANCE	85°C,85% RELATIVE HUMIDITY	168/1000 HRS	MIL-STD-750 METHOD-1021
11	PRESSURE COOKER	15PSIG,121°C	4 HRS	MIL-S-19500 APPENDIX C
12	THERMAL SHOCK	0°C/5 MIN 100°C/5 MIN	10 CYCLES	MIL-STD-750 METHOD-1056
13	TEMPERATURE CYCLING	TSTG(max)/15 MIN TSTG(max)/15 MIN 25°C/5 MIN FOR TRANSFER	10 CYCLES	MIL-STD-750 METHOD-1051
14	SOLDERING HEAT	260°C +5°C-0°C	10 SEC	MIL-STD-750 METHOD-2031



# Q&C Process







# Certificates

## ISO14001

ISO 14001



### Certificate of Environment Management System

Certificate No.: 10114E21762R0S  
Awarded to  
**Rizhao Luguang Electronic Technology Co., Ltd.**  
Organization Code Certificate No. 4020923-9  
Add: No. 166, Guilin Road, Rizhao City, Shandong Province, China Post Code 276826

Beijing ZhongLianTianRun Certification Center (ZLTR) certify that the Environment Management System of the above organization has been assessed and found to be in accordance with the requirements of the standard:  
**ISO14001: 2004**

**SCOPE OF CERTIFICATION/REGISTRATION**  
the environmental management activities involved by Production and Service of Diode

Subject to operation conditions in requirements conformity with Environment Management System,  
This Certificate is valid for a period of three years only.  
Date from: Oct 17th, 2014 To: Oct 16th, 2017

The effectiveness of this Certificate shall be Validated by periodic surveillance audit of ZLTR for maintenance. This Certificate will not be in force unless qualified identification is stuck there under by ZLTR within appropriate time limit.

2015-09-29	Stuck	2016-09-29	Stuck
------------	-------	------------	-------

Information of this certificate can be found on the official website of Certification and Accreditation Administration of the People's Republic of China (<http://www.cncea.gov.cn>) and the official website of Beijing ZhongLianTianRun Certification Center (<http://www.zltr.com.cn>)





**Beijing ZhongLianTianRun Certification Center**  
Room 2601, 2602, 2603, 26th Floor, 2nd Unit, Block 1, No. 4 Yard, Qiyang Road, Chaoyang District, Beijing, P.R. China 100022

ISO 14001

## ISO9001

ISO 9001



### Certificate of Approval

Certificate No.: 10114Q15443R0S  
Awarded to  
**Rizhao Luguang Electronic Technology Co., Ltd.**  
Organization Code Certificate No. 4020923-9  
Add: No. 166, Guilin Road, Rizhao City, Shandong Province, China Post Code 276826

Beijing ZhongLianTianRun Certification Center (ZLTR) certify that the Quality Management System of the above organization has been assessed and found to be in accordance with the requirements of the standard:  
**ISO9001: 2008**

**SCOPE OF CERTIFICATION/REGISTRATION**  
Production and Service of Diode

Subject to operation conditions in requirements conformity with Quality Management System,  
This Certificate is valid for a period of three years only.  
Date from: Oct 17th, 2014 To: Oct 16th, 2017

The effectiveness of this Certificate shall be Validated by periodic surveillance audit of ZLTR for maintenance. This Certificate will not be in force unless qualified identification is stuck there under by ZLTR within appropriate time limit.

2015-09-29	Stuck	2016-09-29	Stuck
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Information of this certificate can be found on the official website of Certification and Accreditation Administration of the People's Republic of China (<http://www.cncea.gov.cn>) and the official website of Beijing ZhongLianTianRun Certification Center (<http://www.zltr.com.cn>)






**Beijing ZhongLianTianRun Certification Center**  
Room 2601, 2602, 2603, 26th Floor, 2nd Unit, Block 1, No. 4 Yard, Qiyang Road, Chaoyang District, Beijing, P.R. China 100022

ISO 9001

## UL

ISO 9001



**ONLINE CERTIFICATIONS DIRECTORY**

**QQX2.E476985**  
Electrically Isolated Semiconductor Devices - Component

Page Bottom

**Electrically Isolated Semiconductor Devices - Component**

See General Information for Electrically Isolated Semiconductor Devices - Component

**SHENZHEN LUGUANG ELECTRONIC TECHNOLOGY CO LTD**  
1407 B BLOCK HAIKONG BLDG  
TERRA 9RD CHEGONGMIAO  
FUTIAN DISTRICT  
SHENGZHEN, GUANGDONG 518040 CHINA

**Electrically Isolated Semiconductor Devices, Model(s) GBJ (a), GBU (b), KBJ (a)**  
(a) - Followed by 6, 8, 10, 15, 20, 25, 35, 50 and followed by 02, 04, 06, 08, 10 or D, G, J, K, M.  
(b) - Followed by 2, 4, 6, 8, 10, 15, 20, 25 and followed by 02, 04, 06, 08, 10 or D, G, J, K, M.

Marking: Company name and model designation.  
Last Updated on 2015-10-26

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ISO 9001

# Certificates

TS16949



## *Certificate of Registration*

This certifies that the Quality Management System of

**Rizhao Luguang Electronic Technology Co., Ltd.**

No. 166, Guilin Road,  
Rizhao City, Shandong Province, China 276826

has been assessed by NSF-ISR and found to be in conformance to the following standards(s):

**ISO/TS 16949:2009**

**Scope of Registration:**  
Manufacturing of Diode

**Exclusions:** Product Design



IATF Certificate Number:	0218761
Certificate Number:	CNTS020399
Certificate Issue Date:	14-SEP-2015
Registration Date:	10-SEP-2015
Expiration Date*:	09-SEP-2018



Carl Blazik,  
Vice President, Technical  
Operations, NSF-ISR, Ltd.

### **NSF International Strategic Registrations**

789 North Dixboro Road, Ann Arbor, Michigan 48105 | (888) NSF-9000 | [www.nsf-isr.org](http://www.nsf-isr.org)

Authorized Registration and/or Accreditation Marks. This certificate is property of NSF-ISR and must be returned upon request.  
\*Company is audited for conformance at regular intervals. To verify registrations call (888) NSF-9000 or visit our web site at [www.nsf-isr.org](http://www.nsf-isr.org)

# Certificates

## RoHS

## REACH

## Halogen Free

**SGS**

No. CANEC1306323801 Date: 10 May 2013 Page 1 of 7

SHENZHEN LUGUANG ELECTRONIC TECHNOLOGY CO.,LTD  
1407,B BLOCK,HAISONG BUILDING TERRA 9RD,CHEGONGMIAO,FUTIAN DISTRICT,SHENZHEN  
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : DIODES BRIDGE  
RECTIFIERS

SGS Job No. : CP13-021748 - SZ  
Model No. : DO-41  
Client Ref. Info. : MBF,TBS,MBS,DB-1MS,DB-1SD,B-1,RB-1S,WOM,RC-2,RS-1,RS-2,  
RS-5,TBL,BR-3,BR-25W,BR-6,GBU,KBL,KBU,KBJ,BR-25L,KBK,HBL,MB,  
R-25,MBR25W,MP-6,MP-8/10,KBPC-8/10,MB-25W,MMB-25,MMB-25W,  
R-1,A-405,DO-41,DO-15,DO-15B,R-3,R-5,DO-201AE,DO-201AD,R-6M,  
R-6,TO-220AB,TO-220AC,ITO-220AC,ITO-220AB,TO-3P,HVM,HVP,HV,HC  
Date of Sample Received : 03 May 2013  
Testing Period : 03 May 2013 - 10 May 2013  
Test Requested : Selected test(s) as requested by client.  
Test Method : Please refer to next page(s).  
Test Results : Please refer to next page(s).

Signed for and on behalf of  
SGS-CSTC Ltd.



Merry Lv  
Approved Signatory

### Test Report

No. CANEC1300276601 Date: 10 Jan 2013 Page 1 of 5

SHENZHEN LUGUANG ELECTRONIC TECHNOLOGY CO.,LTD  
1407,B BLOCK,HAISONG BUILDING TERRA 9RD,CHEGONGMIAO,FUTIAN DISTRICT,SHENZHEN  
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : DIODES  
TRANSISTORS

SGS Job No. : CP12-062415 - SZ  
Model No. : SOD-123FL  
Client Ref. Info. : PLEASE SEE REMARK  
Buyer : Samsung LG  
Date of Sample Received : 07 Jan 2013  
Testing Period : 07 Jan 2013 - 10 Jan 2013  
Test Requested : Selected test(s) as requested by client.  
Test Method : Please refer to next page(s).  
Test Results : Please refer to next page(s).

Signed for and on behalf of  
SGS-CSTC Ltd.



Trophy Zhang  
Approved Signatory

**SGS**

### Test Report (SVHC)

No. CANEC1210511102 Date: 09 Aug 2012 Page 1 of 8


SHENZHEN LUGUANG ELECTRONIC TECHNOLOGY CO.,LTD  
1407,B BLOCK,HAISONG BUILDING TERRA 9RD,CHEGONGMIAO,FUTIAN DISTRICT,SHENZHEN  
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : DIODES BRIDGE  
RECTIFIERS

SGS Job No. : CP12-037414 - SZ  
Model No. : DO-41  
Client Ref. Info. : Please See Remark  
Date of Sample Received : 03 Aug 2012  
Testing Period : 03 Aug 2012 - 09 Aug 2012  
Test Requested : As requested by client, SVHC screening is performed according to:  
(i) Thirteen (13) substances in the Candidate List of Substances of Very High  
Concern (SVHC) for authorization published by European Chemicals Agency  
(ECHA) on Jun 18, 2012 regarding Regulation (EC) No 1907/2006 concerning  
the REACH.  
Test Results : Please refer to next page(s).  
Summary :

According to the specified scope and analytical techniques, concentrations of tested SVHC are ≤ 0.1% (w/w) in the submitted sample.	PASS
---	------

Signed for and on behalf of  
SGS-CSTC Ltd.



David Zhou  
Approved Signatory





# Contact

## Luguang Electronic Tech. Co.,Ltd.

Tel:0086-755-23981117

Fax:0086-755-23981125

Website: [www.luguang.cn](http://www.luguang.cn) Email: [judy\\_lge@lgesemi.com](mailto:judy_lge@lgesemi.com)

Add: #13A07,B block,Haisong building,Terra 9th road,Chegongmiao,Futian district,Shenzhen,China.

# Thank You!