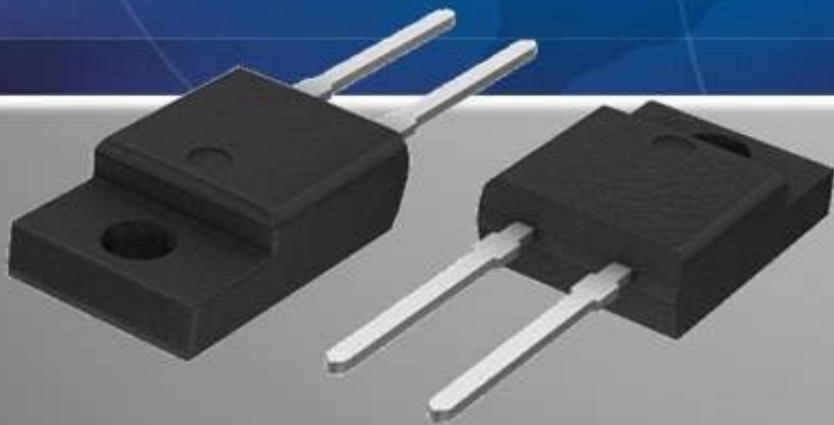


# Company Profile

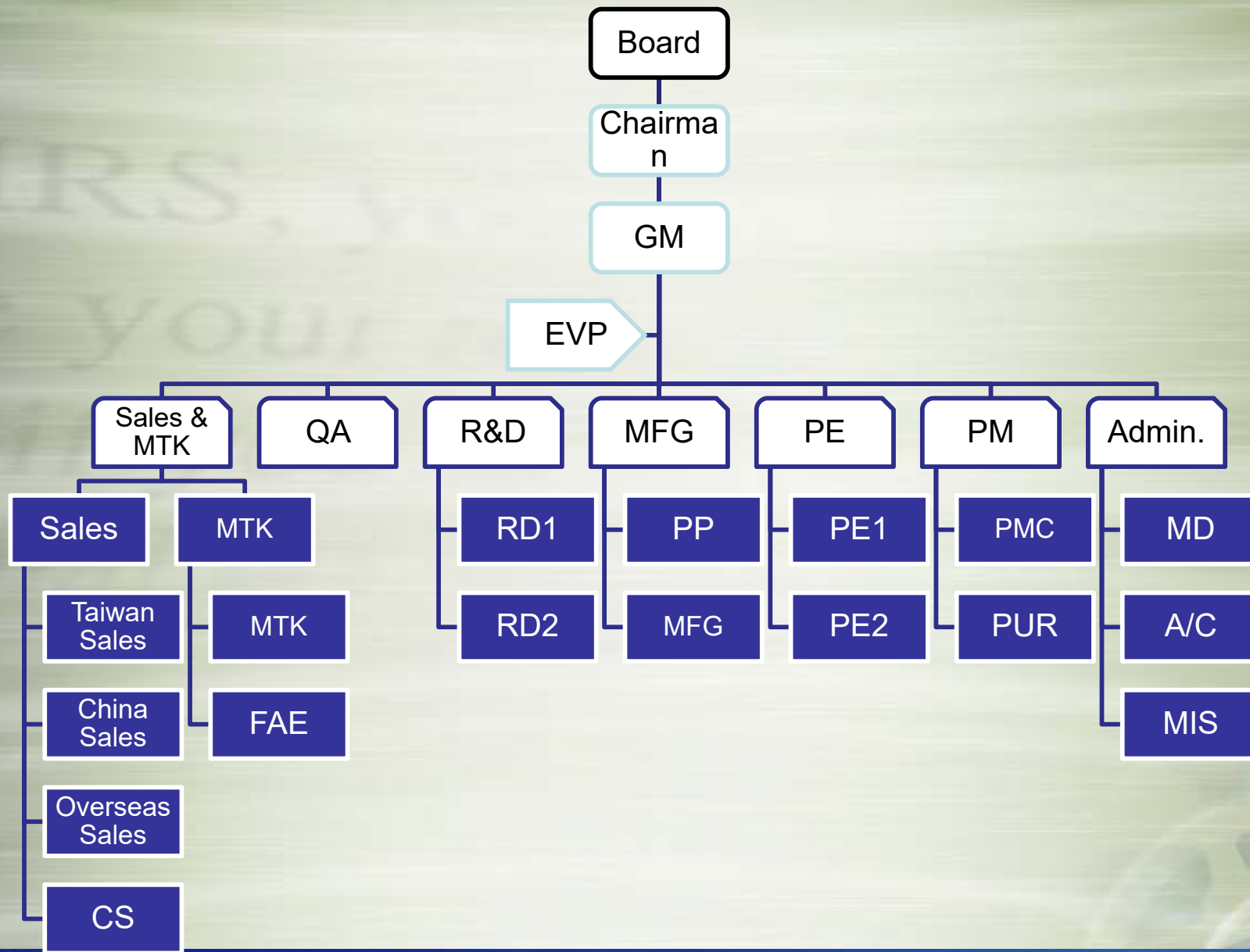


# Company Profile

- Established : SEP. 2001
- Capital : USD \$ 8.3 Million
- Headquarters in Hsinchu, Taiwan
- Manufacturing in China and Taiwan
- SBIR award in 2005
- Specializes in Discrete Devices and other Power Devices.



# Organization Chart



# *Business Philosophy & Vision*

## *Business Philosophy*

**“Proactive innovation, integrity service, joint future creation” has long been adopted as our business philosophy.**

**The CITC has been undertaking to provide products of excellent quality and reasonable price to our customers with pragmatic manner, solid operation base, proactive product innovation, and better product quality for mutually beneficial and win-win outlook by increasing market share based on competitiveness.**

『積極創新、誠信正直、永續經營』是竹懋所秉持的一貫經營理念。

竹懋科技在產品技術上以積極創新的態度，提供誠信正直的服務給我們的客戶、供應商，以達到永續經營的目標!

## *Vision*

**The detached semiconductor components centered CITC is devoted to grow steadily in this industry. The CITC is expecting to come to be the leader of the detached semiconductor component industry by being the key partner of our customers through professional manner and focusing at needs of our customers.**

在分離式半導體元件的領域上，提供高效能、高品質的產品，成為客戶在環保節能上的重要夥伴！

# CITC Strengths

- **Owning the most advanced R&D capabilities**
  - 400 patents of discrete devices as well as other IC process technologies
  - Low VF and high breakdown voltage technologies
  - ESD technologies
  - Customer design capabilities
- **Broad portfolio of high efficiency, space-saving products.**
  - SOD-123S / ST Package
  - SMAS Package
  - TO-277 Package
- **High quality**
  - ISO9001 / ISO18001 / ISO14001
  - ROHS certification
- **Product line**
  - Bridge 、 Rectifier 、 Switch Diode 、 Schottky Diode 、 TVS 、 MOSFET 、 Transistor



# Patent certifications

Patent Name	Location	Patent NO.
蕭特基二極體結構及其製造方法	R.O.C	I226709
具有高崩潰電壓及低逆向漏電流的蕭特基二極體	R.O.C	I234289
蕭特基二極體及其製造方法	R.O.C	I237901
蕭特基阻障二極體及其製造方法	R.O.C	I263344
功率蕭特基整流裝置及其製造方法	CN	362744
具有高崩潰電壓及低逆向漏電流的蕭特基二極體	CN	312861
蕭特基二極體結構及其製造方法	CN	449005
Two mask Schottky diode with locos structure	USA	6,936,905
High switching speed two mask Schottky diode with high field breakdown	USA	6,998,694
Schottky diode with high field breakdown and low reverse leakage current	USA	6,825,073
Schottky barrier diode and method of making the same-Trench	USA	7,064,408
Schottky barrier diode and method of making the same	USA	7,078,780
Silicon carbide Schottky diode and method of making the same	USA	7.368.371
High switching speed two mask Schottky diode with high field breakdown	USA	7.491.633
Method of forming low forward voltage Schottky barrier diode with LOCOS structure therein	USA	11/453,799



# Test Equipments 1

## HTRB Tester



The test is performed by stressing the main blocking junction at an elevated temperature and voltage.

## ESD TESTER



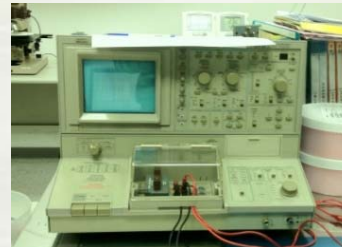
Noiseken TC-815R & ESS-2002EX  
Meets and far exceeds the requirements in EN/IEC 61000-4-2. Up to 30kV output in both contact and air discharges.

## Probe Tester



LEDA-6S  
6 Inch Semi-Prober Station

## Curve Tracer



used to analyse the characteristics of discrete semiconductor devices such as diodes, transistors, and thyristors. Based on an oscilloscope, the device also contains voltage and current sources that can be used to stimulate the device under test

## R $\theta$ JC Tester



Thermal the Resistance Tester

## DC resistance tester



TVR-6000  
The parameters that can be classified are VF , VBR and IR.  
MPT-6000  
TO-220/TO-3P/Bridge DC tester

完善的檢測設備，確保產品品質

# Test Equipments 2



PIF-8000  
Positive Impact Tester



SSG-6000  
Schottky Reverse Current Surge



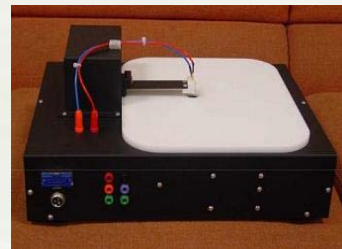
PCJ-6000



VC5300L  
Clamping Voltage Tester



TRR-6000B  
TRR Tester



6-inch Wafer Probe Station

完善的檢測設備，確保產品品質



# Production capacity

Package Type	Capacity/M	Capacity/Y	
SMA/SMB/SMC	100KK	1200KK	
DO-41/15/27	200KK	2400KK	
SOD-123/323/523	100KK	1200KK	
TO/ITO-220	10KK	120KK	
TO-252/263	5KK	60KK	
TO-3P/247	5KK	60KK	

# Acquired Vishay Corporation, Taiwan, 03/2009



General Semiconductor(China)Co., Ltd.  
No.88 6th Ave., TEDA, Tianjin, P.R.C., 300457  
Tel:86-22-25291088/ Fax:25320499

## New Vendor Approval/Disapproval Notice

VE No.	1182	Product	Micro SMP
Part No.	42-632LLE-CI	Description	CITC Low Vf 1A 30V 32mil
Drawing No.	42-632LLE-CI	Revision No.	42-632LLE-CI
Vendor Code	97827	Vendor Name	Chip Integration Technology Corporation

Dear Sir/Madam,

This letter is with respect to the above Vendor Evaluation conducted by Vishay General Semiconductor on the referenced materials.

**1.Approved on first sample only.**

Final approval subject to a production trial of approximately

**Final Approved**

**3.Resubmit sample required**

Vendor should be notified to correct the deviations listed below.

After deviations being corrected vendor may resubmit new samples for approved.

**4.Reject:Don't resubmit sample**

On behalf of Vishay General Semiconductor

**Buyer/RD Engineer**

**QA Chief Engineer**

**PDD Purchasing Director**

Signature:

Name: Jianjun Chen1

Cat Rong

David Teow

Date: 2009-02-12

2009-03-16

2009-03-12 09:24:32

# Acquired Liteon Corporation, Taiwan, 12/2010

**LITEON** LITE-ON SEMICONDUCTORS

**FB340LM**

**SURFACE MOUNT  
SCHOTTKY BARRIER RECTIFIER**

**REVERSE VOLTAGE – 40 Volts  
FORWARD CURRENT – 3.0 Ampere**

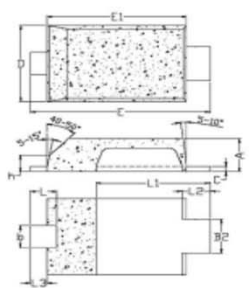
**FEATURES**

- Case Material: "Green" molding compound, UL flammability classification 94V-0, (No Br. Sb. Cl.)
- Very low profile package – 0.80mm
- Super fast switching for high efficiency
- For surface mounted applications
- Very Low forward voltage drop and high current capability
- Low reverse leakage current

**MECHANICAL DATA**

- Case: JEDEC DO-222AA
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Lead Free Plating (Matte Tin Finish.)
- Component in accordance to RoHS 2002/95/EC

**Mite Flat**



Mite Flat		
DIM.	MIN.	MAX.
A	0.80	0.95
b	0.40	0.65
b2	0.70	1.00
C	0.10	0.25
D	1.75	2.05
E	3.60	3.90
E1	2.80	3.10
h	0.35	0.50
L	0.50	0.80
L1	2.10	2.60
L2	0.45	0.75
L3	0.20	0.50

All dimension in millimeter

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**  
Ratings at 25°C ambient temperature unless otherwise specified.

PARAMETER	SYMBOL	FB340LM	UNIT
Device marking code	Note	B3G	---
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	40	V
Maximum RMS Voltage	$V_{RMS}$	28	V
Maximum DC Blocking Voltage	$V_{DC}$	40	V
Average Rectified Output Current @ $T_L=115^\circ\text{C}$ , (Fig.1)	$I_{(AV)}$	3.0	A
Peak Forward Surge Current 8.3ms single half sine-wave	$I_{FSM}$	75	A
Forward Voltage (1)	$V_F$	0.34 0.39 0.47	V
Leakage Current (1)	$I_R$	400 40	uA mA
Typical junction capacitance (2)	$C_J$	300	pF
Operating junction temperature	$T_J$	-55 to +150	°C
Storage temperature range	$T_{STG}$	-55 to +150	°C
THERMAL CHARACTERISTIC	SYMBOL	Typical	UNIT
Typical thermal resistance_Junction to Case (3)	$R_{\theta JC}$	29	°C/W
Typical thermal resistance_Junction to Ambient(3)	$R_{\theta JA}$	104	°C/W
Typical thermal resistance_Junction to Lead (3)	$R_{\theta JL}$	22	°C/W

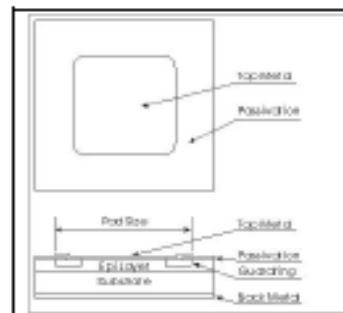
Note :  
(1) 300us Pulse width, 2% Duty cycle.  
(2) Measured at 1.0MHz and applied reverse voltage of 4.0V DC.

REV. 0 , Nov-2010, KSHP11

**Chip Integration Technology Corporation**

**SCHOTTKY DIODE SPECIFICATION**

PART NO.	SPEC.	DATE	REV.
50A03G040G04	3A40V	2010.03.15	1.0



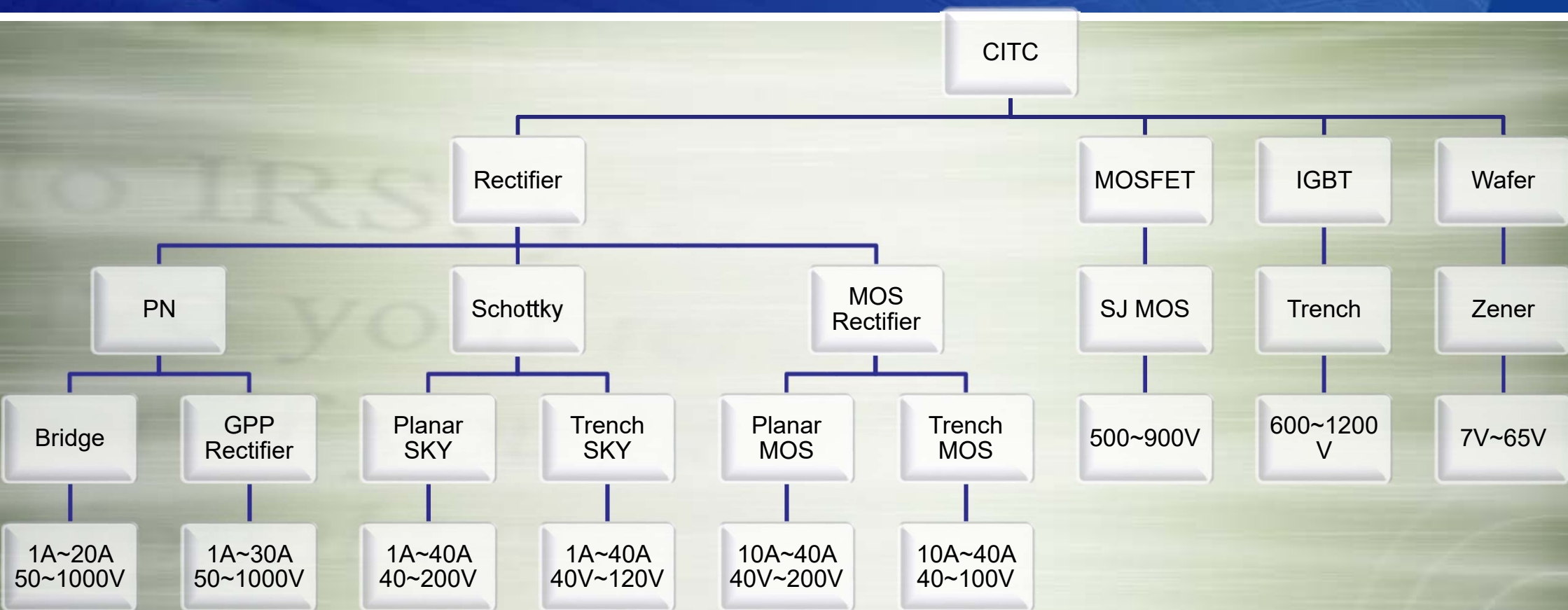
Item	Characteristics	
Wafer Form Die Size	1290 um	50.79 mil
Chip Form Die Size	1258 um	49.53 mil
Pad Size	1130 um	44.49 mil
Chip Thickness	254 um	10.00 mil
Scribe Line Width	60 um	2.36 mil
Wafer Size	6 Inch	150.00 mm
Chip Quantity (pcs/wafer)	9250 pcs	
Top Metallization	Ag	
Back Metallization	Ag	

Item	Symbol	Max. Rating	Unit
Peak reverse voltage	$V_{RM}$	40	V
DC reverse voltage	$V_R$	40	V
Mean rectifying current	$I_o$	3	A
Peak forward surge current	$I_{FSM}$	70	A
Junction temperature	$T_J$	-50~+125	°C
Storage temperature	$T_{stg}$	-50~+150	°C

**Electrical Characteristics (Ta = 25 °C)**

Item	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Breakdown Voltage	$V_B$	42			V	$I_R=0.5mA$
Maximum Instantaneous Reverse Current	$I_R$			200	uA	$V_R=42V$
Maximum Instantaneous Forward Voltage	$V_F$			450	mV	$I_F=3A$

# Product Lines

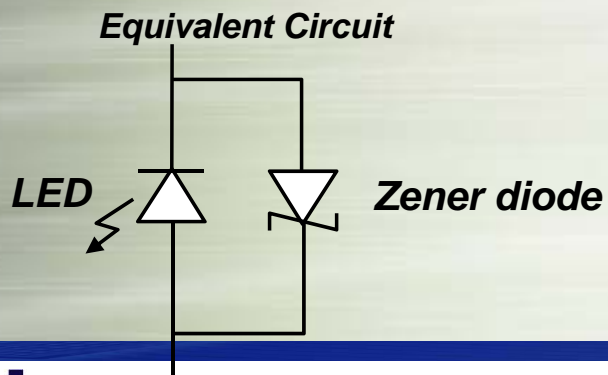
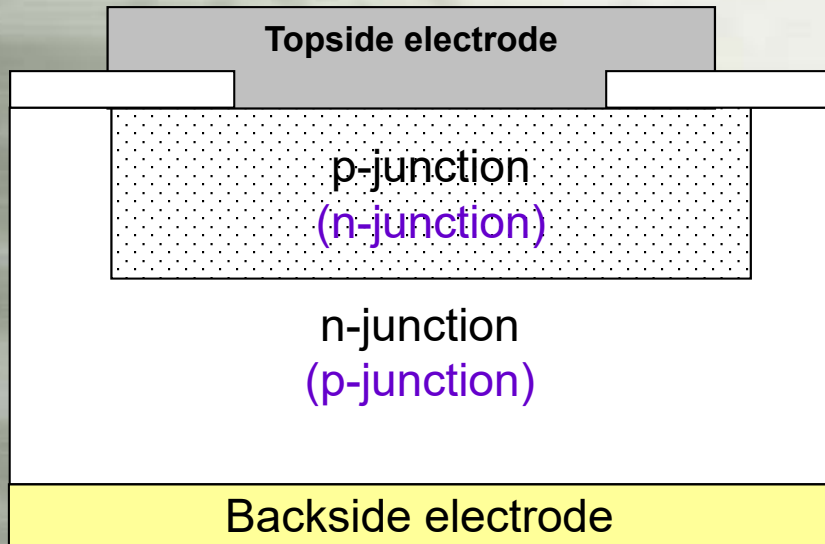


***CITC Zener Diode Briefing  
(For LED ESD Protection)***

# Zener Structure

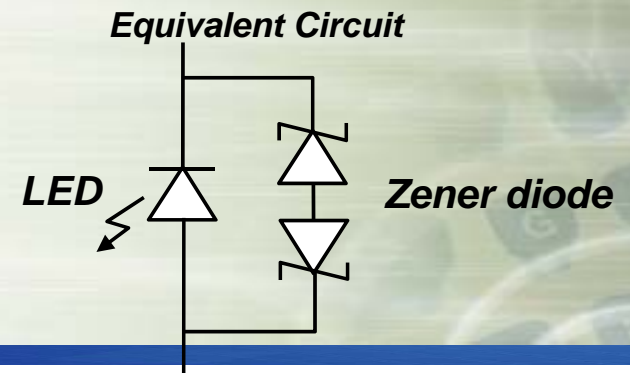
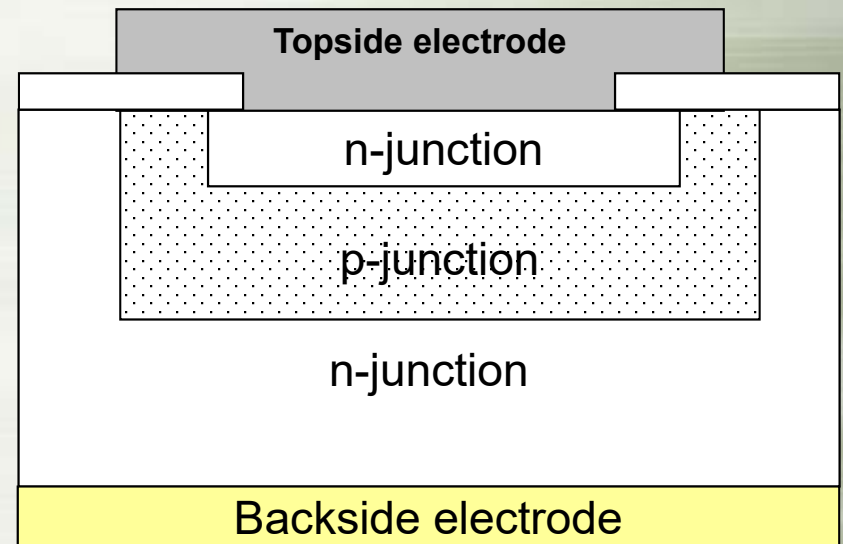
## Single Direction

*p/n or n/p depend on PKG circuit design.*



## Double Direction

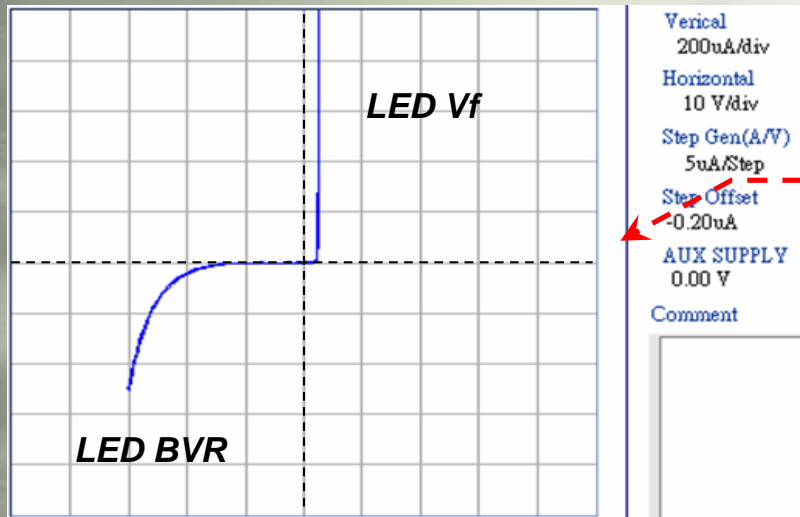
*LED leakage current can be measured after package.*



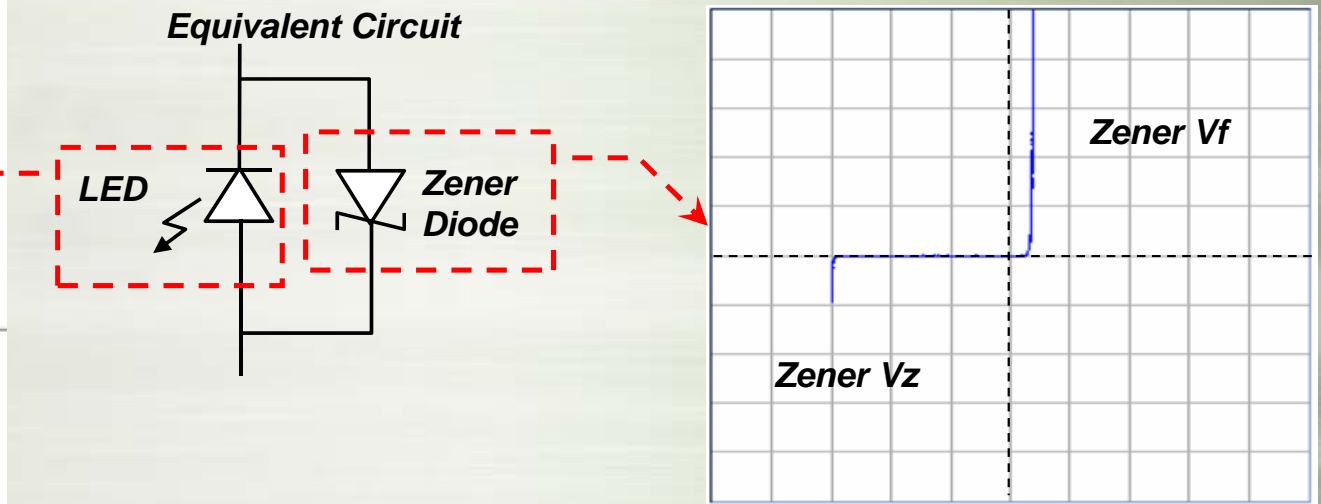
# Zener Protection Principle

- 1) Blue LED Vf(@20mA)=3~3.5V ∴ R(@20mA)≈150Ω  
When LED breakdown (reverse)  $R \geq 1000\Omega$  (<300μA)
- 2) Zener Vf(@20mA)=900mV ∴ R(@20mA)≈45Ω  
When Zener breakdown  $R \approx 5\sim 30\Omega$  (<5mA)

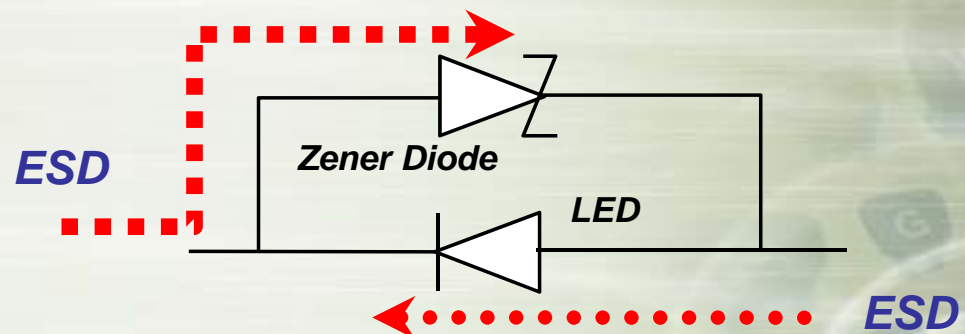
LED I-V curve



Zener I-V curve



The anti-ESD ability of LED at reverse direction is much weaker than forward direction. Zener provide an ESD bypass channel to protect LED.



# ***CITC Zener Diode Products Part Number***

***Product Number :***

***AA-Z-B-C-D-EEE***

*AA : Chip size*

*Z : Zener Dide*

*B : Single Direction is U  
Double Direction is B*

*C : N Top is N  
P Top is P*

*D : Al/Au/Square Pad is A  
Al/Au/Circle Pad is B  
Au/Au/Square Pad is C  
Au/Au/Circle Pad is D*

*EEE : Reverse Voltage*

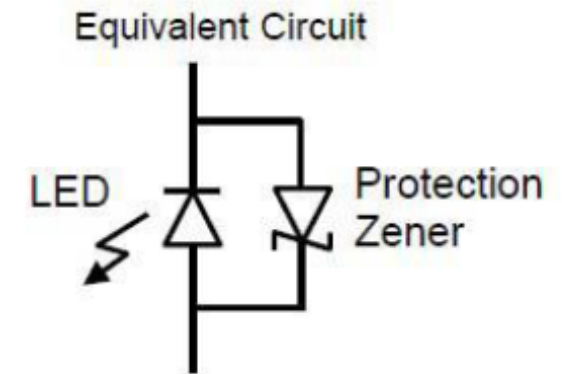
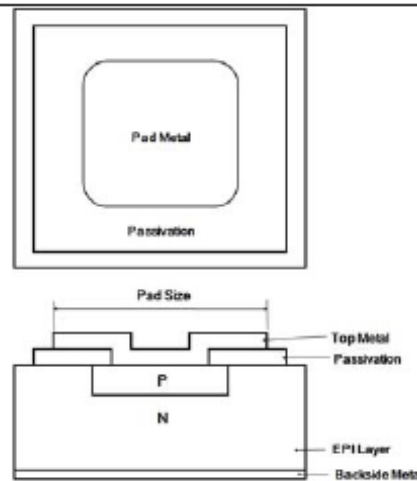
***For Example :***

***6mil-Zener-Double Direction-N Top-Al-Au-Square Pad-6V is  
07ZBNA006***



# CITC Zener Diode Products data sheet

## 07ZUPA009



Item	Dimension	
	Characteristics	
Wafer Form Die Size	177.8 ± 20.3 um	7.0 ± 0.8 mil
Chip Form Die Size	152.4 ± 20.3 um	6.0 ± 0.8 mil
Pad Size	136 ± 10.2 um	5.35 ± 0.4 mil
Chip Thickness	102 ± 12.7 um	4 ± 0.5 mil
Scribe Line Width	30 um	1.18 mil
Wafer Size	6 inch	150.00 mm
Top Metallization	Al	
Back Metallization	Au	

### 4. Electrical characteristics (Ta = 25 °C) :

Item	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Zener Voltage	Vz	7.0		10.0	V	Izf=5mA
Reverse Leakage Current	Ir			0.5	uA	V=5V
Forward Voltage 1	Vf			1.2	uA	If=20mA
Forward Voltage 2	Vf	0.4		0.8	V	If=10uA

# ***CITC Zener Diode Products List (Part Number)***

***Zener-6mil-Al-Au-Square Pad***

***Zener-6mil-Au-Au-Circle Pad***

***(一)P on N Single Direction Zener***

*(A)7V~10V ----- 07ZUPA009*

*(B)11V~15V ----- 07ZUPA013*

*(C)23V~40V ----- 07ZUPA030*

*(D)45V~65V ----- 10ZUPA055*

***(二)N on P Single Direction Zener***

*(A)7V~10V ----- 07ZUNA009*

***(三)NPN Double Direction Zener***

*(A)5V~7V ----- 07ZBNA006*

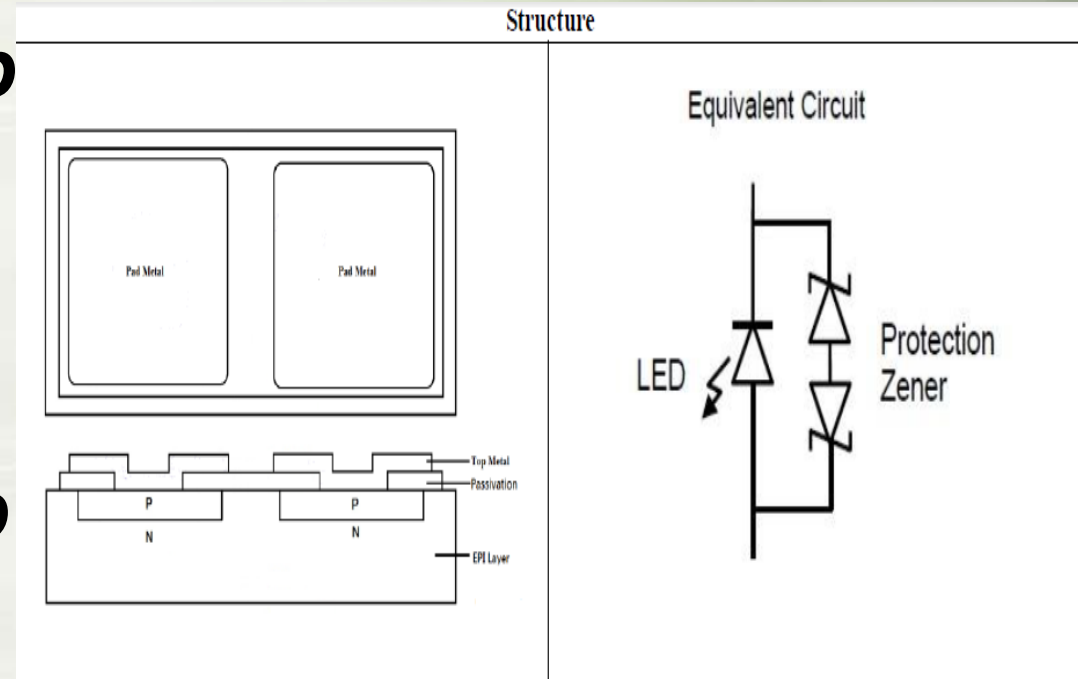
# CITC Zener Diode FC Products List (Part Number)

## Zener-16\*6 mil-Au-Al flip chip

16HBPA009UL  
16HBPA009LL  
16HBPA030UL

## Zener-20\*10mil Au-Al flip chip

20HBPA009UL  
20HBPA030UL



Dimension		
Item	Characteristics	
Chip Form Die Size	400*160 ± 10.7 um	15.75*6.3 ± 0.42 mil
Pad Size	90 ± 5.0 um	3.54 ± 0.20 mil
Chip Thickness	101.6 ± 12.7 um	4.00 ± 0.50 mil
Passivation	390*150 ± 5.0 um	15.35*5.91 ± 0.20 mil
Top Metallization	SnAu	
Backside Metal	Al	

# Major Customer

