



# 3DD13003A

## 主要参数 MAIN CHARACTERISTICS

$I_C$	1.5A
$V_{CEO}$	450V
$P_C(TO-92)$	1W
$P_C(DPAK/IPAK)$	10W
$P_C(TO-126)$	20W
$P_C(TO-220)$	40W

## 用途

- 充电器
- 电子镇流器
- 高频开关电源
- 高频功率变换
- 一般功率放大电路

## APPLICATIONS

- Battery changer
- Electronic ballasts
- High frequency switching power supply
- High frequency power transform
- Commonly power amplifier circuit

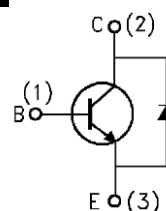
## 产品特性

- 高耐压
- 高电流容量
- 高开关速度
- 高可靠性
- 环保 (RoHS) 产品

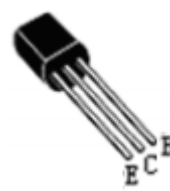
## FEATURES

- High breakdown voltage
- High current capability
- High switching speed
- High reliability
- RoHS product

## 封装 Package



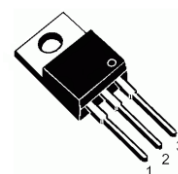
TO-92-FJ



TO-126



TO-220



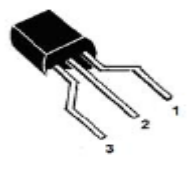
IPAK



DPAK



TO-92-FJ-F1



**订货信息 ORDER MESSAGE**

订 货 型 号 Order codes				印 记 Marking	封 装 Package
有卤-条管 Halogen-Tube	无卤-条管 Halogen-Free-Tube	有卤-编带 Halogen-Reel	无卤-编带 Halogen-Free-Reel		
3DD13003A-R-B	3DD13003A-R-BR	3DD13003A-R-A	3DD13003A-R-AR	13003A	DPAK
3DD13003A-V-B	3DD13003A-V-BR	N/A	N/A	13003A	IPAK
N/A	N/A	3DD13003A-TJ-A	3DD13003A-TJ-AR	13003A	TO-92-FJ
N/A	N/A	3DD13003A-TJ1-A	3DD13003A-TJ1-AR	13003A	TO-92-FJ-F1
3DD13003A-M-B	3DD13003A-M-BR	N/A	N/A	13003A	TO-126
3DD13003A-CA-B	3DD13003A-CA-BR	N/A	N/A	13003A	TO-220
有卤-袋装 Halogen-Bag	无卤-袋装 Halogen-Free-Bag			印 记 Marking	封 装 Package
3DD13003A-V-C	3DD13003A-V-CR			13003A	IPAK
3DD13003A-TJ-C	3DD13003A-TJ-CR			13003A	TO-92-FJ
3DD13003A-TJ1-C	3DD13003A-TJ1-CR			13003A	TO-92-FJ-F1
3DD13003A-M-C	3DD13003A-M-CR			13003A	TO-126
3DD13003A-CA-C	3DD13003A-CA-CR			13003A	TO-220





## 绝对最大额定值 ABSOLUTE RATINGS (Tc=25°C)

项 目 Parameter	符 号 Symbol	数 值 Value	单 位 Unit
集电极—发射极直流电压 Collector- Emitter Voltage (V <sub>BE</sub> =0)	V <sub>CES</sub>	700	V
集电极—发射极直流电压 Collector- Emitter Voltage (I <sub>B</sub> =0)	V <sub>CEO</sub>	450	V
发射极—基极直流电压 Emitter-Base Voltage	V <sub>EBO</sub>	9	V
最大集电极直流电流 Collector Current (DC)	I <sub>C</sub>	1.5	A
最大集电极脉冲电流 Collector Current (pulse)	I <sub>CP</sub>	3.0	A
最大集电极耗散功率 Total Dissipation (TO-92)	P <sub>C</sub>	1	W
最大集电极耗散功率 Total Dissipation (DPAK /IPAK)	P <sub>C</sub>	10	W
最大集电极耗散功率 Total Dissipation (TO-126)	P <sub>C</sub>	20	W
最大集电极耗散功率 Total Dissipation (TO-220)	P <sub>C</sub>	40	W
最高结温 Junction Temperature	T <sub>j</sub>	150	°C
贮存温度 Storage Temperature	T <sub>stg</sub>	-55~+150	°C

## 电特性 ELECTRICAL CHARACTERISTIC

项 目 Parameter	测试条件 Tests conditions	最小值 Value(min)	典型值 Value(typ)	最大值 Value(max)	单 位 Unit
V(BR) <sub>CEO</sub>	I <sub>C</sub> =10mA, I <sub>B</sub> =0	450	500	-	V
V(BR) <sub>CBO</sub>	I <sub>C</sub> =1mA, I <sub>E</sub> =0	700	830	-	V
V(BR) <sub>EBO</sub>	I <sub>E</sub> =1mA, I <sub>C</sub> =0	9	13	-	V
I <sub>CBO</sub>	V <sub>CB</sub> =700V, I <sub>E</sub> =0	-	-	100	μA
I <sub>CEO</sub>	V <sub>CE</sub> =450V, I <sub>B</sub> =0	-	-	50	μA
I <sub>EBO</sub>	V <sub>EB</sub> =7V, I <sub>C</sub> =0	-	-	10	μA
H <sub>fe</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =200mA	8	25	40	-
	V <sub>CE</sub> =5V, I <sub>C</sub> =1.5A	4	8	-	-
V <sub>CE(sat)</sub>	I <sub>C</sub> =0.5A, I <sub>B</sub> =0.1A	-	0.15	0.8	V
	I <sub>C</sub> =1.5A, I <sub>B</sub> =0.5A	-	0.5	2.0	-
V <sub>BE(sat)</sub>	I <sub>C</sub> =1.0A, I <sub>B</sub> =0.25A	-	0.6	1.8	V
t <sub>f</sub>	V <sub>CC</sub> =24V I <sub>C</sub> =0.5A, I <sub>B1</sub> =-I <sub>B2</sub> =0.1A	-	-	0.7	μS
f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =0.2A	4	-	-	MHz

## 热特性 THERMAL CHARACTERISTIC

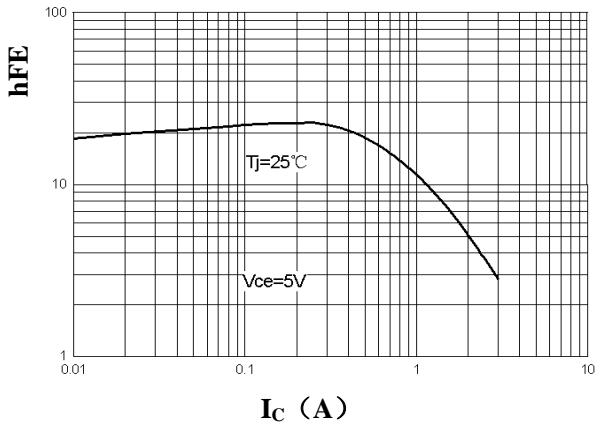
项 目 Parameter	符 号 Symbol	最小值 min	最大值 max	单 位 Unit
结到管壳的热阻 Thermal Resistance Junction Case (TO-92)	R <sub>th(j-c)</sub>	-	49	°C/W
结到管壳的热阻 Thermal Resistance Junction Case DPAK/IPAK	R <sub>th(j-c)</sub>	-	12.5	°C/W
结到管壳的热阻 Thermal Resistance Junction Case TO-126	R <sub>th(j-c)</sub>	-	6.25	°C/W
结到管壳的热阻 Thermal Resistance Junction Case TO-220	R <sub>th(j-c)</sub>	-	3.125	°C/W



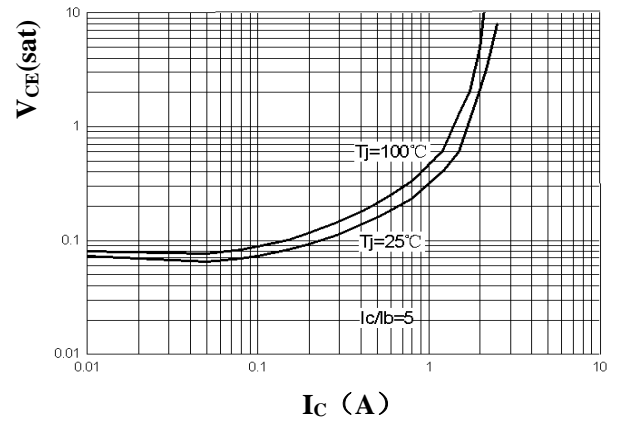


特征曲线 ELECTRICAL CHARACTERISTICS (curves)

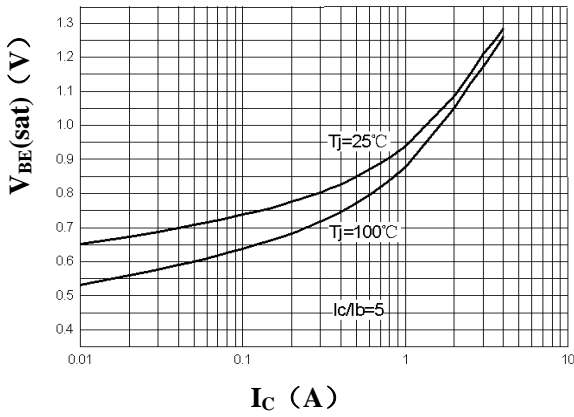
hFE - I<sub>C</sub>



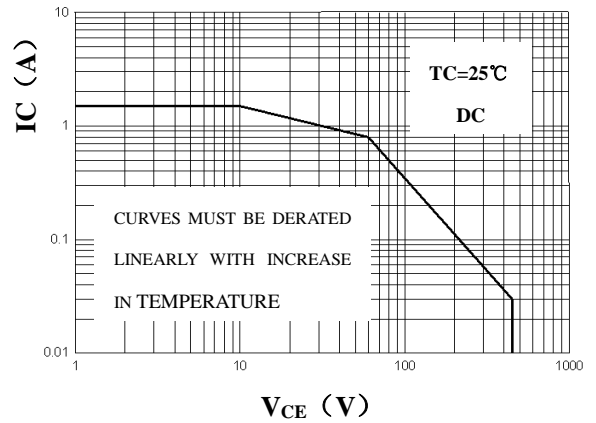
V<sub>CE(sat)</sub> - I<sub>C</sub>



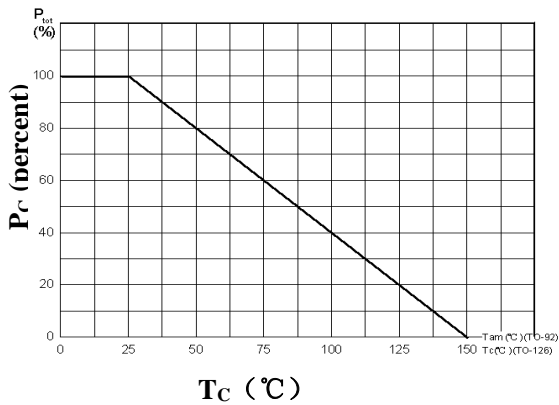
V<sub>BE (sat)</sub> - I<sub>C</sub>



SOA



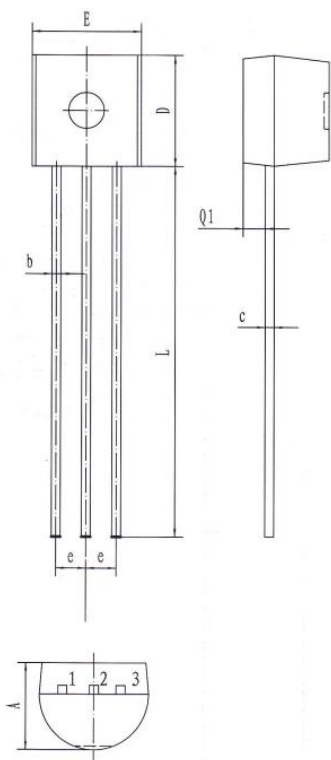
P<sub>C</sub>-T<sub>C</sub>



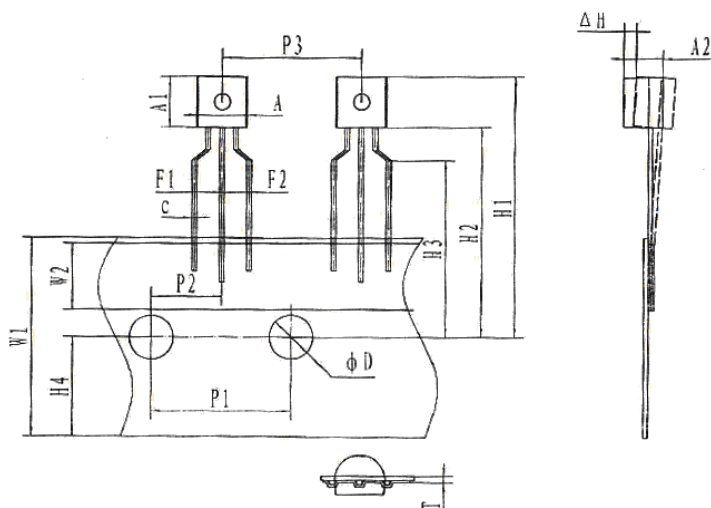


外形尺寸 PACKAGE MECHANICAL DATA  
TO-92

单位 Unit : mm



符号 Symbol	尺寸 (mm) Size (mm)
A	3.30-3.90
b	0.35-0.55
c	0.31-0.51
D	4.30-4.90
E	4.30-4.90
e	1.17-1.37
L	12.50-15.50
Q1	0.85-1.00



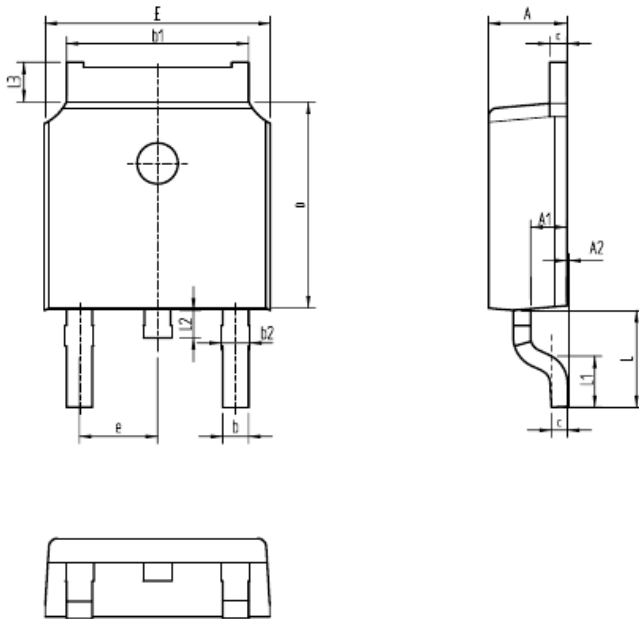
符号 Symbol	尺寸 (mm) Size (mm)
A	4.50-4.70
A1	4.50-4.70
A2	3.50-3.70
c	TYP 0.45
F1/F2	2.20-2.80
W1	17.5-18.5
W2	5.50-6.50
H1	22.0-27.0
H2	18.0-20.0
H3	15.0-17.0
H4	8.50-9.50
P1	12.5-12.9
P2	6.00-6.70
P3	12.5-12.9
T	0.40-0.45
φ D	3.80-4.20
ΔH	0.00-1.00





外形尺寸 PACKAGE MECHANICAL DATA  
DPAK

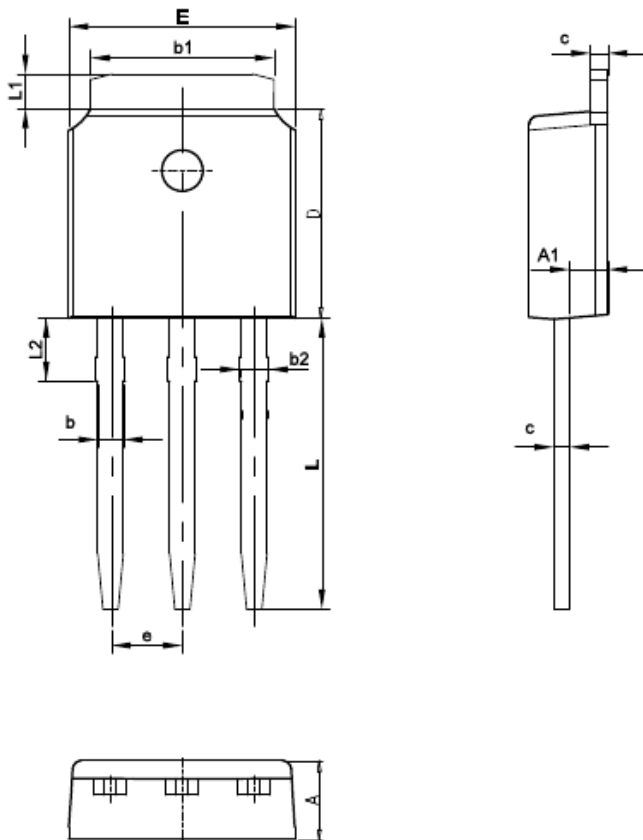
单位 Unit : mm



符号 Symbol	尺寸 (mm) Size (mm)
A	2.16-2.41
A1	0.97-1.17
A2	0.00-0.15
b	0.63-0.93
b1	5.13-5.53
b2	0.66-0.96
c	0.40-0.60
D	5.80-6.40
E	6.30-6.90
e	2.286BSC
L	2.50-3.30
L1	1.20-1.80
L2	0.60-1.00
L3	0.85-1.30

外形尺寸 PACKAGE MECHANICAL DATA  
IPAK

单位 Unit : mm



符号 Symbol	尺寸 (mm) Size (mm)
A	2.10-2.50
A1	0.87-1.27
b	0.63-0.93
b1	5.13-5.53
b2	0.67-1.00
c	0.40-0.60
D	5.80-6.40
E	6.3-6.9
L	9.10-9.70
e	2.286BSC
L1	0.82-1.22
L2	0.9-1.2

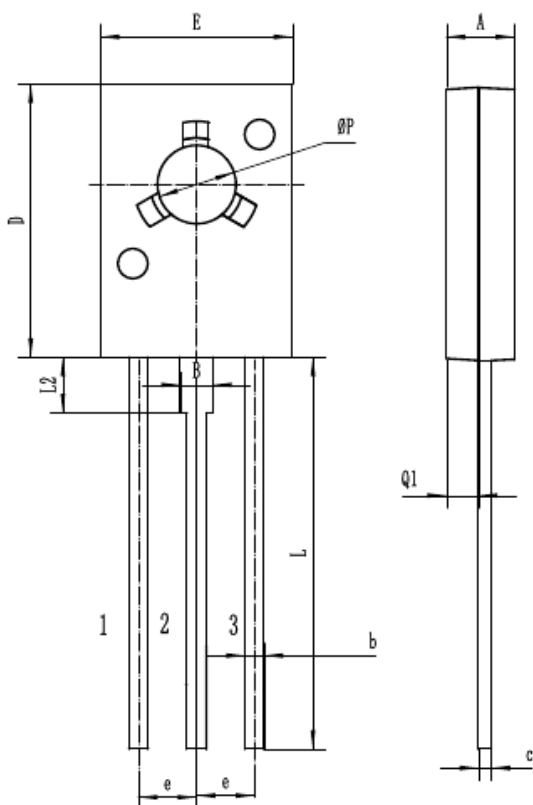




3DD13003A

外形尺寸 PACKAGE MECHANICAL DATA  
TO-126

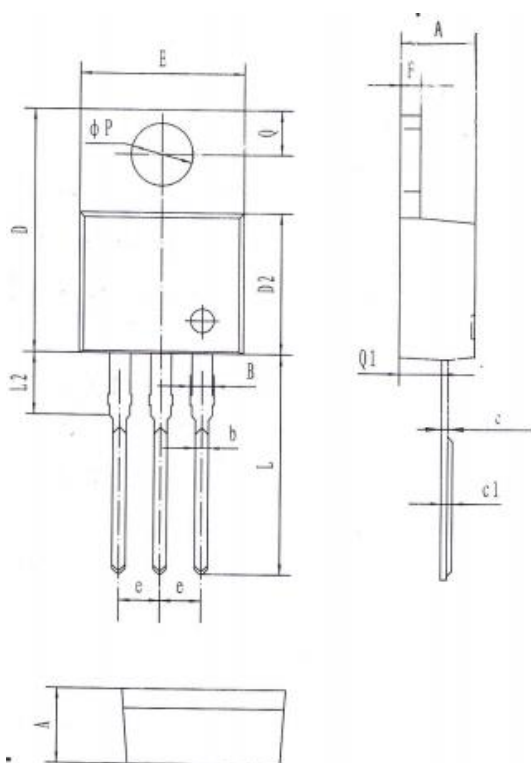
单位 Unit : mm



符号 symbol	MIN	MAX
A	2.5	2.9
B	1.22	1.47
b	0.6	0.9
c	0.3	0.7
D	10.5	11.1
E	7.1	8.1
e	2.19	2.39
L	15.3	15.7
L2	2.05	2.35
Q1	1.07	1.47
P	2.95	3.25

外形尺寸 PACKAGE MECHANICAL DATA  
TO-220

单位 Unit : mm



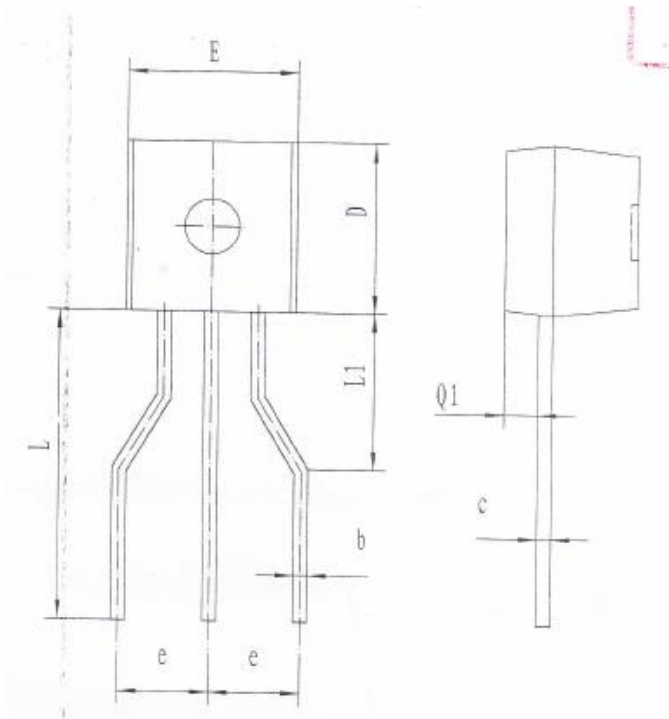
符号 Symbol	尺寸 (mm) Size (mm)
A	4.40-4.80
B	1.10-1.40
b	0.70-0.95
c	0.28-0.48
c1	0.32-0.52
D	14.45-16.00
D2	8.20-9.20
E	9.60-10.40
e	2.39-2.69
F	1.20-1.35
L	13.05-14.05
L2	3.70-3.90
P	3.50-4.00
Q	2.40-3.00
Q1	2.20-2.90



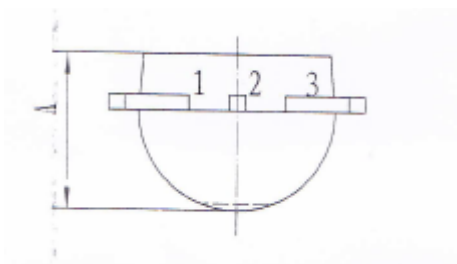


外形尺寸 PACKAGE MECHANICAL DATA  
TO-92-F1

单位 Unit : mm



符号 Symbol	尺寸 (mm) Size (mm)
A	3.30-3.90
b	0.35-0.55
c	0.31-0.51
D	4.30-4.90
E	4.30-4.90
e	2.00-3.10
L	5.90-7.10
L1	2.70-3.30
Q1	0.85-0.99





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**联系方式****吉林华微电子股份有限公司**

公司地址：吉林省吉林市深圳街 99 号

邮编：132013

总机：86-432-64678411

传真：86-432-64665812

网址：[www.hwdz.com.cn](http://www.hwdz.com.cn)

**销售业务部**

地址：吉林省吉林市深圳街 99 号

邮编：132013

电话： 86-432-64675588

64675688

64678411-3098/3099

传真：86-432-64671533

**CONTACT****JILIN SINO-MICROELECTRONICS CO., LTD.**

ADD: No.99 Shenzhen Street, Jilin City, Jilin Province, China.

Post Code: 132013

Tel: 86-432-64678411

Fax: 86-432-64665812

Web Site: [www.hwdz.com.cn](http://www.hwdz.com.cn)

**MARKET DEPARTMENT**

ADD: No.99 Shenzhen Street, Jilin City, Jilin Province, China.

Post Code: 132013

Tel: 86-432-64675588

64675688

64678411-3098/3099

Fax: 86-432-64671533

