



# 3DD13003A

## 主要参数 MAIN CHARACTERISTICS

$I_C$	1.5A
$V_{CEO}$	450V
$P_C$ (TO-92-FJ/TO-92-FJ-F1)	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

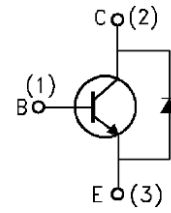
## 产品特性

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

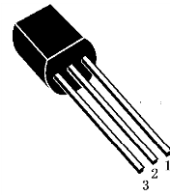
## FEATURES

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

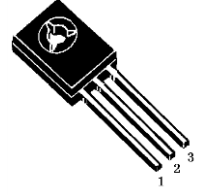
## 封装 Package



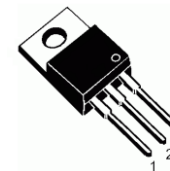
### TO-92-FJ



### TO-126



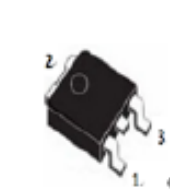
### TO-220



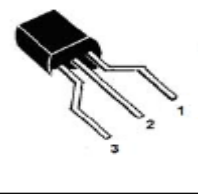
### IPAK



### 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	有卤-条管	有卤-编带	有卤-编带		
Halogen-Tube	Halogen-Free-Tube	Halogen-Reel	Halogen-Free-Reel	13003A	DPAK
N/A	N/A	3DD13003A-R-A	3DD13003A-R-AR	13003A	DPAK
3DD13003A-V-B	3DD13003A-R-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-M1-B	3DD13003A-M1-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	有卤-袋装			印 记	封 装
Halogen-Bag	Halogen-Free-Bag			Marking	Package
3DD13003A-V-C	3DD13003A-R-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-M1-C	3DD13003A-M1-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-FJ/ TO-92-FJ-F1)	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/TO-126-FJ)	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
hFE	V <sub>CE</sub> =5V, I <sub>C</sub> =5mA	6	20	40	-
	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	11	-	-
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
t <sub>s</sub>	V <sub>CC</sub> =24V I <sub>C</sub> =0.5A, I <sub>B1</sub> =-I <sub>B2</sub> =0.1A	-	-	4	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
结到环境的热阻 Thermal Resistance Junction Ambient (TO-92-FJ/ TO-92-FJ-F1)	R <sub>th(j-a)</sub>	-	125	°C/W
结到管壳的热阻 Thermal Resistance Junction Case (TO-92-FJ/ TO-92-FJ-F1)	R <sub>th(j-c)</sub>	-	49	°C/W





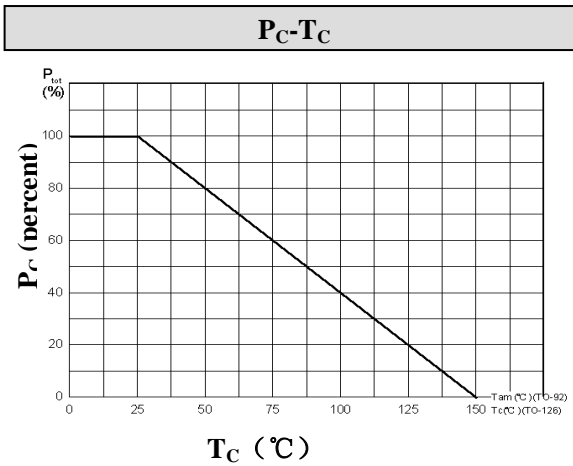
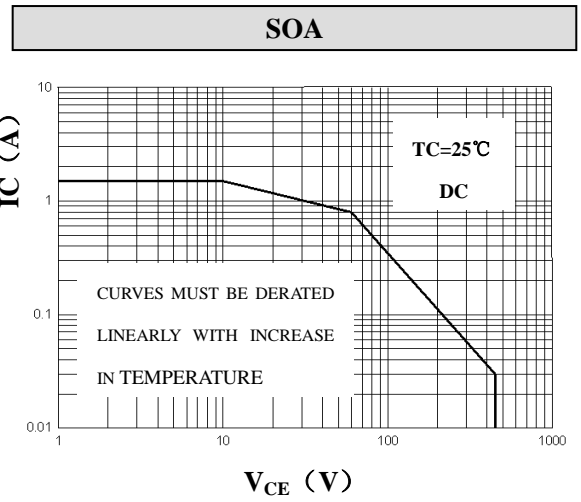
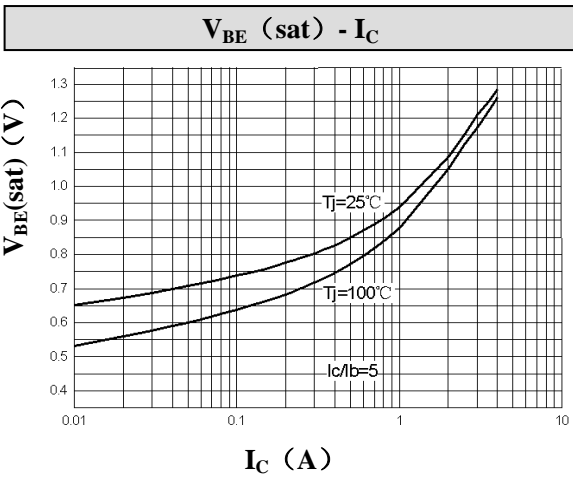
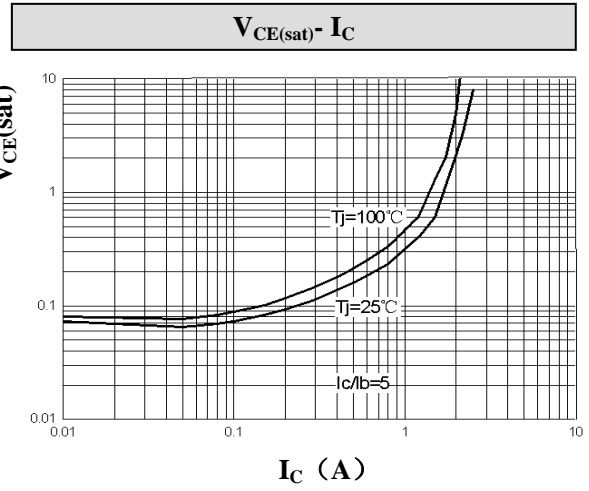
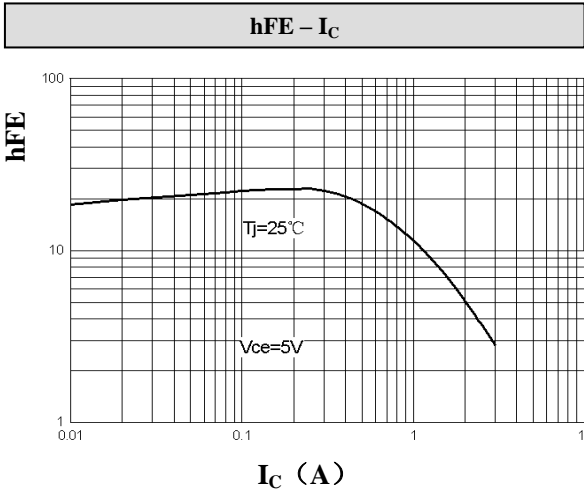
## 3DD13003A

结到管壳的热阻 Thermal Resistance Junction Case	DPAK/IPAK	$R_{th(j-c)}$	-	12.5	$^{\circ}C/W$
结到管壳的热阻 Thermal Resistance Junction Case TO-126		$R_{th(j-c)}$	-	6.25	$^{\circ}C/W$
结到管壳的热阻 Thermal Resistance Junction Case	TO-220	$R_{th(j-c)}$	-	3.125	$^{\circ}C/W$





特征曲线 ELECTRICAL CHARACTERISTICS (curves)

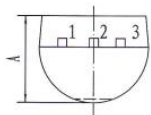
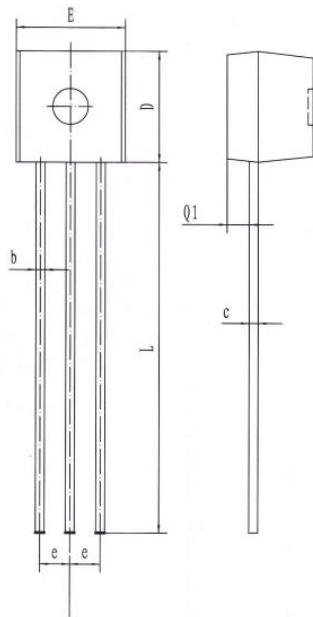




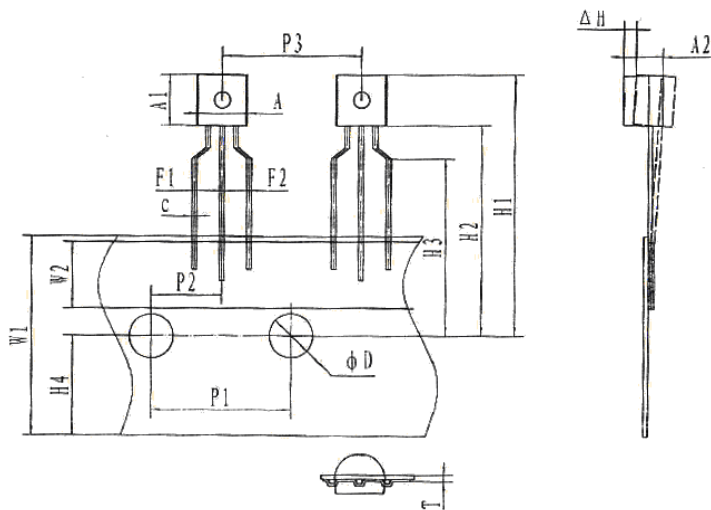
外形尺寸 PACKAGE MECHANICAL DATA

TO-92-FJ

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	4.30-4.90
A1	4.30-4.90
A2	3.30-3.90
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
△H	0.00-1.00

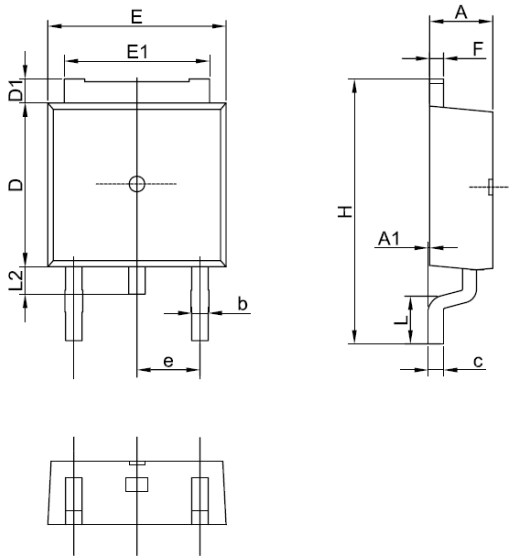




## 外形尺寸 PACKAGE MECHANICAL DATA

DPAK

单位 Unit : mm

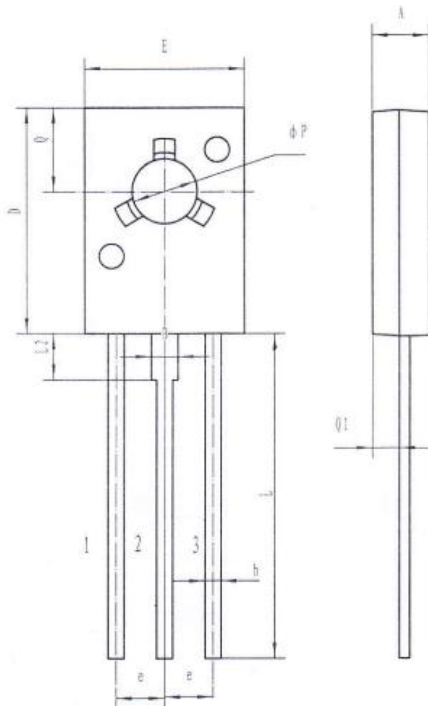


符号 Symbol	尺寸 (mm) Size (mm)
A	2.2-2.4
A1	0.0-0.2
b	0.7-0.9
c	0.45-0.55
D	6.0-6.3
D1	0.8-1.2
E	6.5-6.8
E1	5.2-5.5
e	2.28TYP
F	0.45-0.55
H	9.65-10.45
L	1.0-1.3
L2	0.7-1.3

## 外形尺寸 PACKAGE MECHANICAL DATA

TO-126

单位 Unit : mm



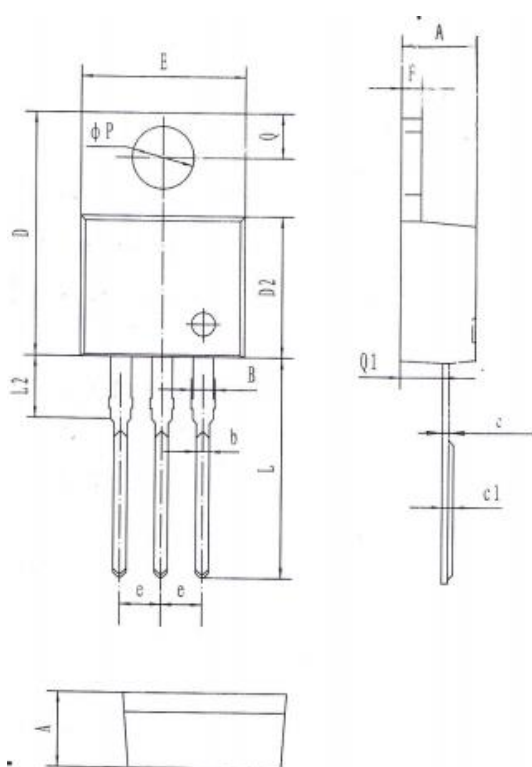
符号 Symbol	尺寸 (mm) Size (mm)
A	2.50-2.90
B	1.22-1.47
b	0.60-0.90
c	0.30-0.70
D	10.50-11.10
E	7.10-8.10
e	2.19-2.39
L	15.3-15.7
L2	2.10-2.30
Q	3.80-4.20
Q1	1.07-1.47
P	3.00-3.20





## 外形尺寸 PACKAGE MECHANICAL DATA

## TO-220

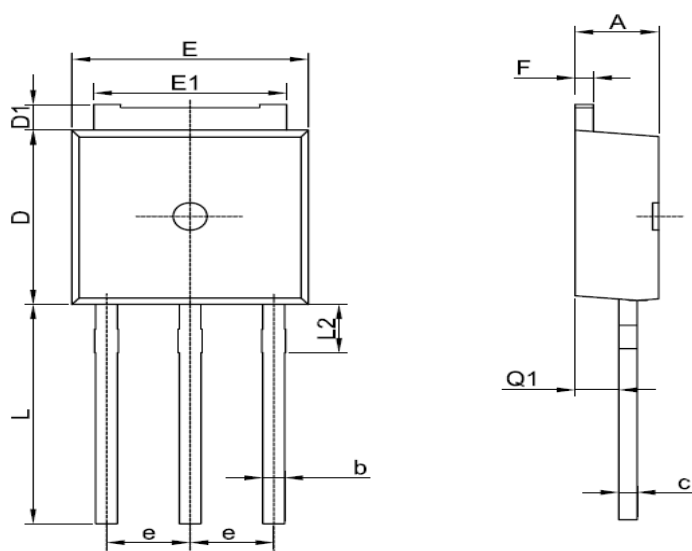


单位 Unit : mm

符号 Symbol	尺寸 (mm) Size (mm)
A	4.40-4.80
B	1.10-1.40
b	0.70-0.95
c	0.30-0.55
c1	0.32-0.52
D	14.45-16.00
D2	8.2-9.2
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

## IPAK



单位 Unit : mm

符号 Symbol	尺寸 (mm) Size (mm)
A	2.2-2.4
b	0.7-0.9
c	0.45-0.55
D	6.0-6.3
D1	0.8-1.2
E	6.5-6.8
E1	5.2-5.5
e	2.28TYP
F	0.45-0.55
L	6.85-7.15
L2	1.8-2.2
Q1	0.8-1.2



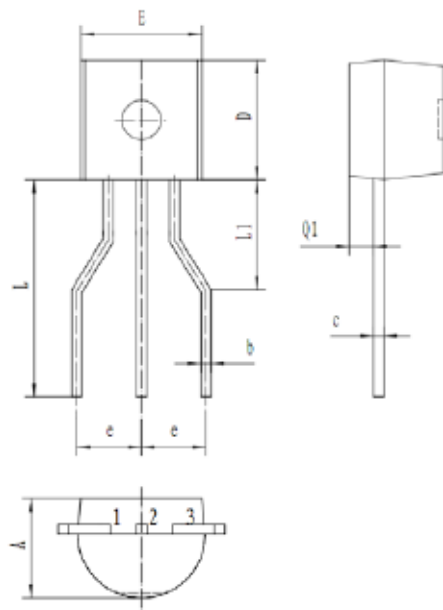




## 外形尺寸 PACKAGE MECHANICAL DATA

## TO-92-FJ-F1

单位 Unit : mm



<b>A</b>	3.30-3.90
<b>b</b>	0.35-0.55
<b>c</b>	0.31-0.51
<b>D</b>	4.30-4.90
<b>E</b>	4.30-4.90
<b>e</b>	1.17-1.37
<b>L</b>	5.00-6.00
<b>L1</b>	2.70-3.30
<b>Q1</b>	0.85-1.00



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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

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Fax: 86-432-64671533

