



# 3DD4242D

## 主要参数 MAIN CHARACTERISTICS

$I_C$	1.5A
$V_{CEO}$	400V
$P_C$ (TO-92/SOT-89)	1W
$P_C$ ( DPAK/IPAK)	10W
$P_C$ (TO-126(S))	20W

## 用途

- 节能灯
- 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

## 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

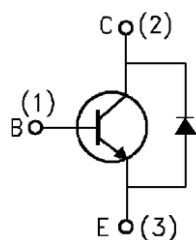
## APPLICATIONS

- Energy-saving light
- Electronic ballasts
- High frequency switching power supply
- High frequency power transform
- Commonly power amplifier circuit

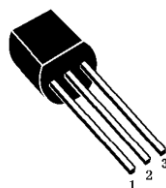
## FEATURES

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

## 封装 Package



TO-92



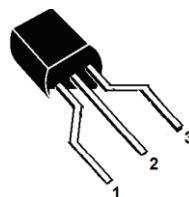
TO-126S



IPAK



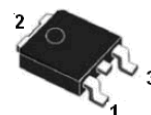
TO-92-F1



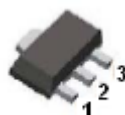
TO-126



DPAK



SOT-89  
(3DD4242DO)



说明: 1-B, 2-C, 3-E





**订货信息 ORDER MESSAGE**

订货型号 Order codes				印 记 Marking	封 装 Package
有卤-编带 Halogen-Reel	无卤-编带 Halogen-Free-Reel	有卤-袋装 Halogen-Bag	无卤-袋装 Halogen-Free-Bag		
3DD4242D-NB-A	3DD4242D-NB-AR	3DD4242D-NB-C	3DD4242D-NB-CR	4242DO	SOT-89
3DD4242D-T-A	3DD4242D-T-AR	3DD4242D-T-C	3DD4242D-T-CR	4242DT	TO-92
3DD4242D-T1-A	3DD4242D-T1-AR	3DD4242D-T1-C	3DD4242D-T1-CR	4242DT	TO-92-F1
3DD4242D-R-A	3DD4242D-R-AR	3DD4242D-R-C	3DD4242D-R-CR	4242DR	DKPAK
		3DD4242D-V-C	3DD4242D-V-CR	4242DV	IPAK
		3DD4242D-M-C	3DD4242D-M-CR	4242DM	TO-126
		3DD4242D-M1-C	3DD4242D-M1-CR	4242DM	TO-126S
有卤-条管 Halogen-Tube	无卤-条管 Halogen-Free-Tube			印 记 Marking	封 装 Package
3DD4242D-R-B	3DD4242D-R-BR			4242DR	DKPAK
3DD4242D-V-B	3DD4242D-V-BR			4242DV	IPAK
3DD4242D-M-B	3DD4242D-M-BR			4242DM	TO-126
3DD4242D-M1-B	3DD4242D-M1-BR			4242DM	TO-126S

**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>	400	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/SOT-89)	P <sub>C</sub>	1	W
最大集电极耗散功率 Total Dissipation (DKPAK/IPAK )	P <sub>C</sub>	10	W
最大集电极耗散功率 Total Dissipation (TO-126(S))	P <sub>C</sub>	20	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
$V(BR)_{CEO}$	$I_C=10mA, I_B=0$	400	470	-	V
$V(BR)_{CBO}$	$I_C=1mA, I_E=0$	700	800	-	V
$V(BR)_{EBO}$	$I_E=1mA, I_C=0$	9	16	-	V
$I_{CBO}$	$V_{CB}=700V, I_E=0$	-	-	5	$\mu A$
$I_{CEO}$	$V_{CE}=400V, I_B=0$	-	-	10	$\mu A$
$I_{EBO}$	$V_{EB}=7V, I_C=0$	-	-	5	$\mu A$
hFE	$V_{CE}=10V, I_C=100mA$	18	22	26	-
	$V_{CE}=5V, I_C=1.5A$	3.0	7.0	-	-
$V_{CE(sat)}$	$I_C=0.5A, I_B=100mA$	-	0.2	0.8	V
$V_{BE(sat)}$	$I_C=0.5A, I_B=100mA$	-	0.9	1.2	V
ts	$I_C=0.25A$	1.0		4.0	$\mu S$
ft	$V_{CE}=10V, I_C=0.1A$	4	-	-	MHz

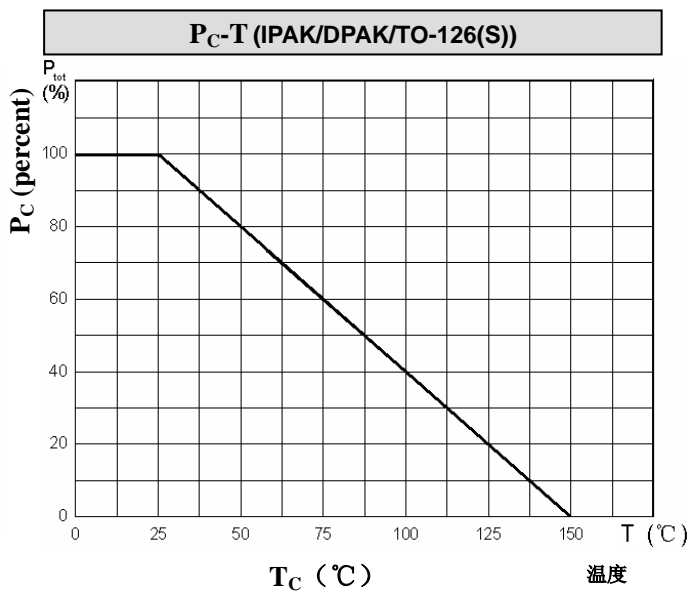
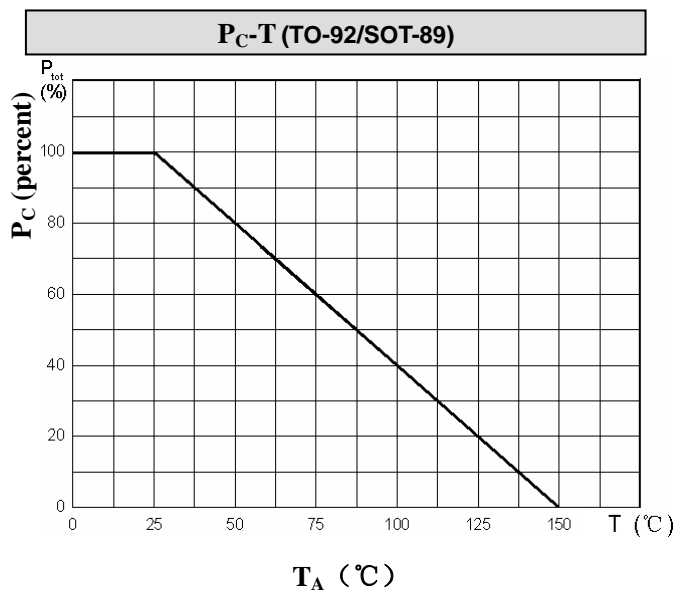
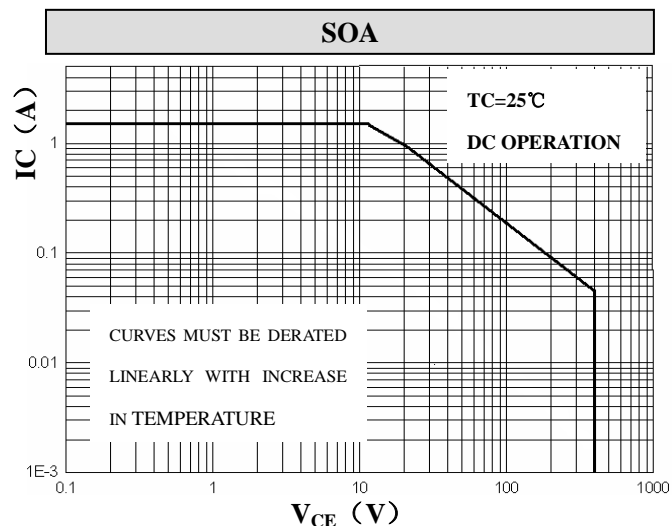
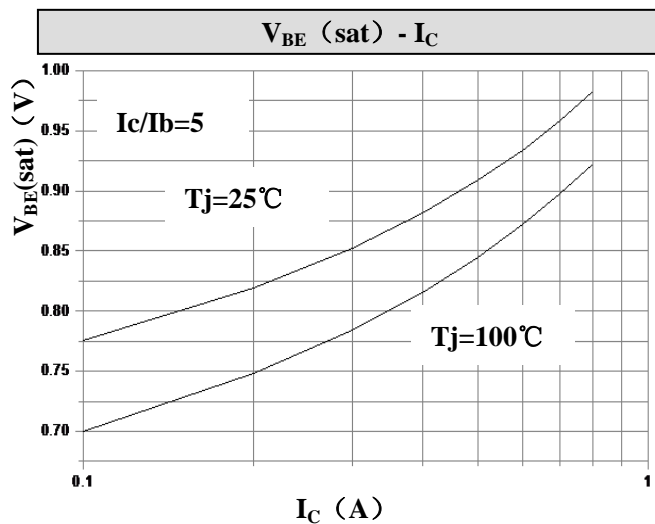
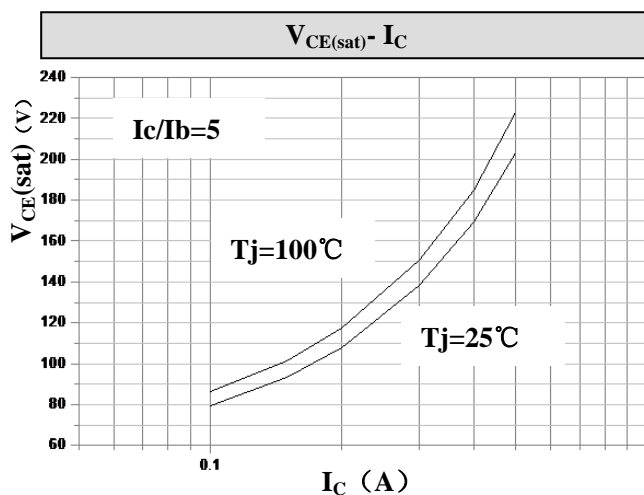
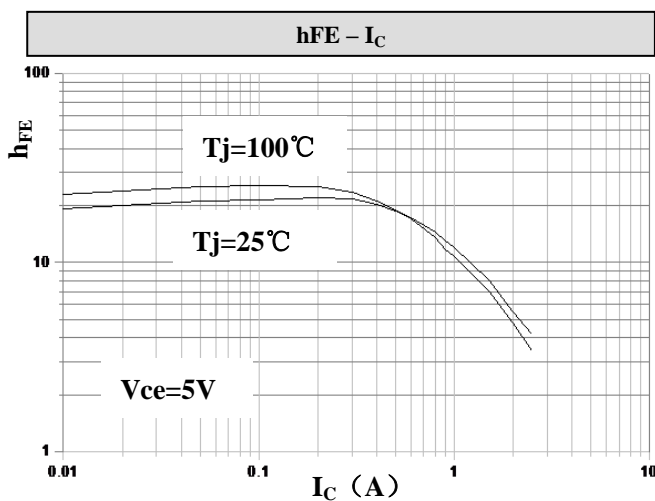
**热特性 THERMAL CHARACTERISTIC**

项 目 Parameter	符 号 Symbol	最小值 Value(min)	最大值 Value(max)	单 位 Unit
结到管壳的热阻 Thermal Resistance Junction Ambient TO-92/SOT-89	$R_{th(j-a)}$	-	49	$^{\circ}C/W$
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(S)	$R_{th(j-c)}$	-	6.25	$^{\circ}C/W$





特征曲线 ELECTRICAL CHARACTERISTICS (curves)



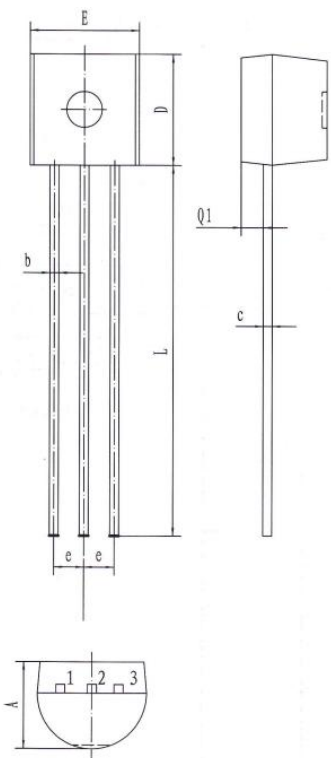


NPN 型高压功率开关晶体管  
HIGH VOLTAGE FAST-SWITCHING NPN POWER TRANSISTOR

外形尺寸 PACKAGE MECHANICAL DATA

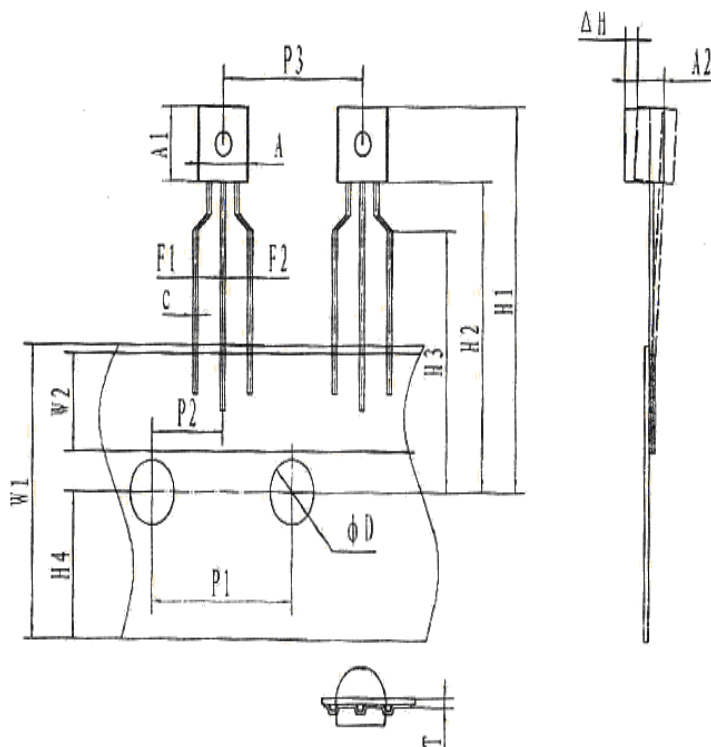
TO-92

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

TO-92-编带



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



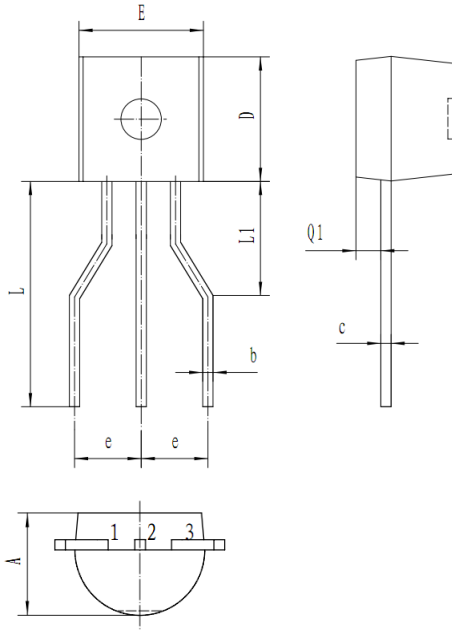


NPN 型高压功率开关晶体管  
HIGH VOLTAGE FAST-SWITCHING NPN POWER TRANSISTOR

外形尺寸 PACKAGE MECHANICAL DATA

TO-92-F1

单位 Unit : mm

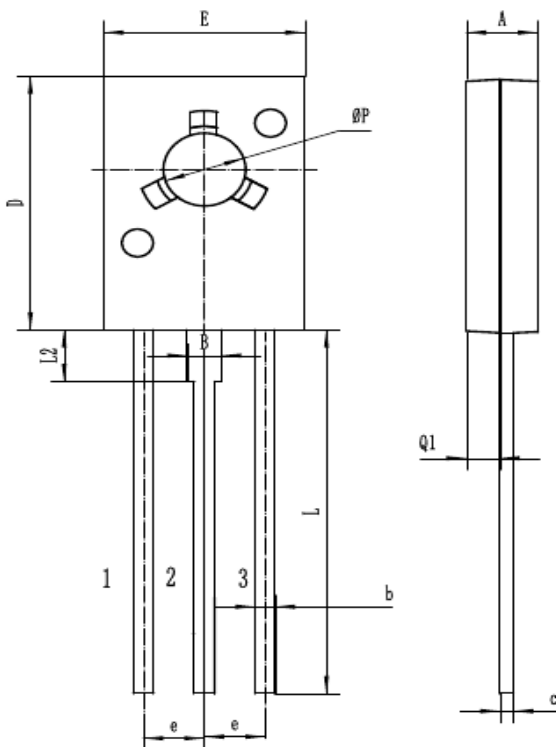


符号 Symbol	尺寸 (mm) Size (mm)
<b>A</b>	3.30-3.90
<b>b</b>	0.35-0.55
<b>c</b>	0.31-0.51
<b>D</b>	4.30-4.90
<b>E</b>	4.30-4.90
<b>e</b>	2.00-3.10
<b>L</b>	5.90-7.10
<b>L1</b>	2.70-3.30
<b>Q1</b>	0.85-0.99

外形尺寸 PACKAGE MECHANICAL DATA

TO-126

单位 Unit : mm



符号 Symbol	尺寸 (mm) Size (mm)
<b>A</b>	2.50-2.90
<b>B</b>	1.22-1.47
<b>b</b>	0.60-0.90
<b>c</b>	0.30-0.70
<b>D</b>	10.50-11.10
<b>E</b>	7.10-8.10
<b>e</b>	2.19-2.39
<b>L</b>	15.30-15.70
<b>L2</b>	2.05-2.35
<b>Q1</b>	1.07-1.47
<b>P</b>	2.95-3.25

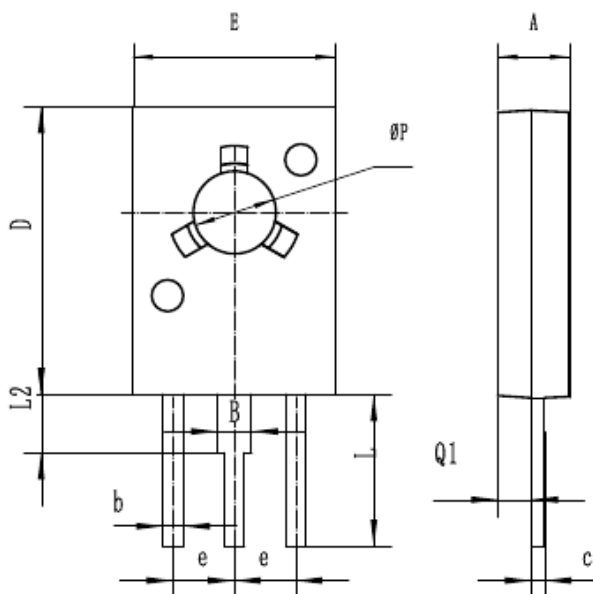




外形尺寸 PACKAGE MECHANICAL DATA

**TO-126S**

单位 Unit : mm

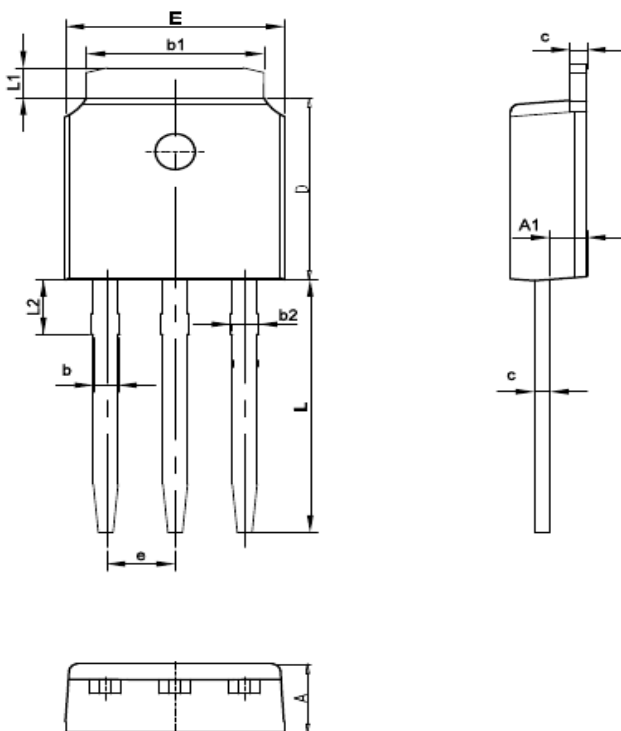


符号 Symbol	尺寸 (mm) Size (mm)
A	2.50-2.90
B	1.22-1.47
b	0.60-0.90
c	0.30-0.70
D	10.50-11.10
E	7.10-8.10
e	2.19-2.39
L	5.30-6.00
L2	2.05-2.35
Q1	1.07-1.47
P	2.95-3.25

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	6.30-6.90
L	9.10-9.71
e	2.286BSC
L1	0.82-1.22
L2	0.90-1.20



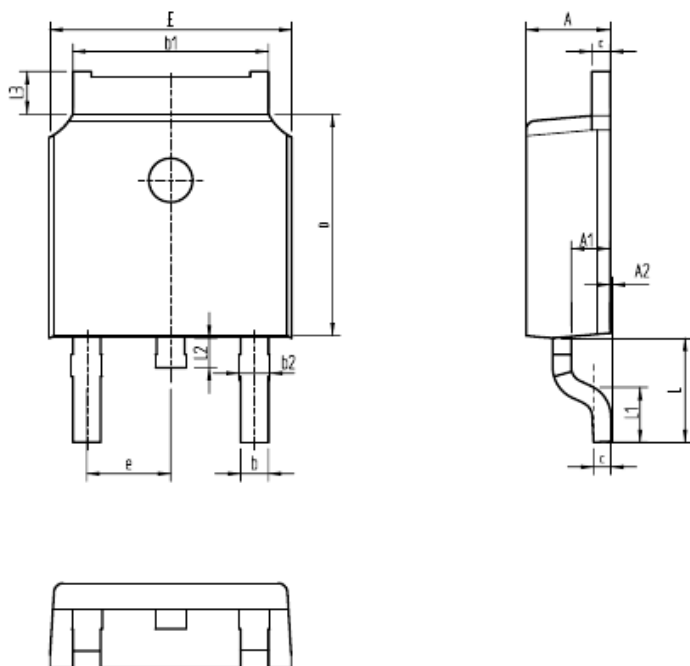


NPN 型高压功率开关晶体管  
HIGH VOLTAGE FAST-SWITCHING NPN POWER TRANSISTOR

外形尺寸 PACKAGE MECHANICAL DATA

**DPAK**

单位 Unit : mm

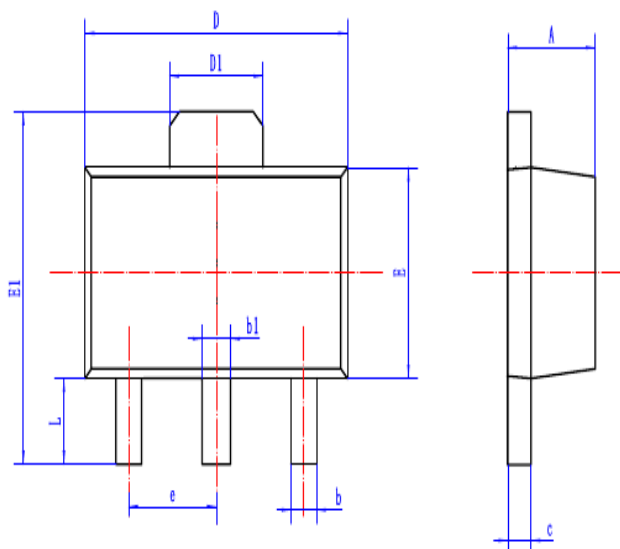


符号 Symbol	尺寸 (mm) Size (mm)
<b>A</b>	2.16-2.41
<b>A1</b>	0.97-1.17
<b>A2</b>	0.00-0.15
<b>b</b>	0.63-0.93
<b>b1</b>	5.13-5.53
<b>b2</b>	0.66-0.96
<b>c</b>	0.40-0.60
<b>D</b>	5.80-6.40
<b>E</b>	6.30-6.90
<b>e</b>	2.286BSC
<b>L</b>	2.50-3.30
<b>L1</b>	1.20-1.80
<b>L2</b>	0.60-1.00
<b>L3</b>	0.85-1.30

外形尺寸 PACKAGE MECHANICAL DATA

**SOT-89**

单位 Unit : mm



符号 Symbol	尺寸 (mm) Size (mm)
<b>A</b>	1.30-1.70
<b>b</b>	0.30-0.55
<b>b1</b>	0.35-0.65
<b>c</b>	0.30-0.50
<b>D</b>	4.30-4.70
<b>D1</b>	1.55REF
<b>E</b>	2.30-2.60
<b>E1</b>	3.90-4.30
<b>e</b>	1.50TYP
<b>L</b>	0.80-1.20







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3. 在电路设计时请不要超过器件的绝对最大额定值，否则会影响整机的可靠性。
4. 本说明书如有版本变更不另外告知

### NOTE

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3. Please do not exceed the absolute maximum ratings of the device when circuit designing.
4. Jilin Sino-microelectronics co., Ltd reserves the right to make changes in this specification sheet and is subject to change without prior notice.

### 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)

#### 销部业务部

地址：吉林省吉林市深圳街 99 号

邮编：132013  
电话：86-432-64675588  
64675688  
64678411  
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

