



# 3DD13003X

## 主要参数 MAIN CHARACTERISTICS

$I_C$	1.5A
$V_{CEO}$	400V
$P_C(TO-92)$	1W
$P_C(TO-126(S))$	20W
$P_C(TO-220)$	40W

## 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

## APPLICATIONS

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

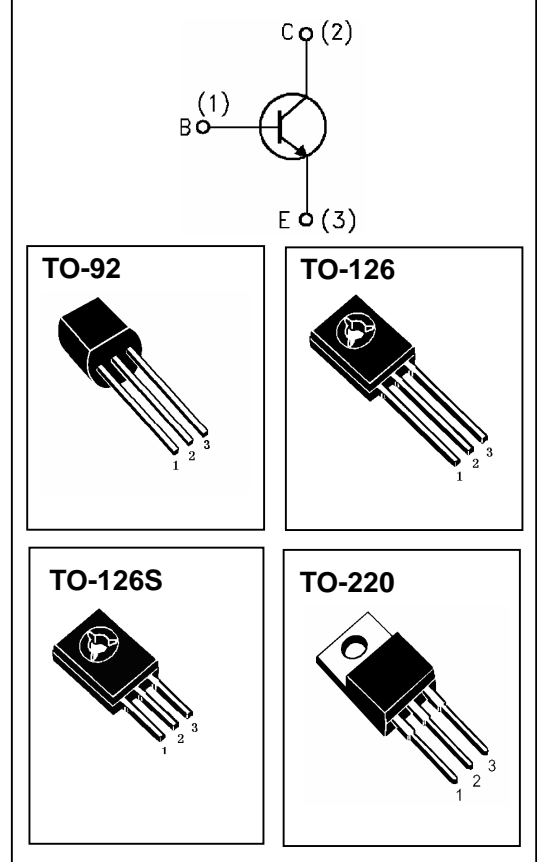
## 产品特性

- 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



## 订货信息 ORDER MESSAGE

订货型号 Order codes	印记 Marking	无卤素 Halogen Free	封装 Package	包装 Packaging
3DD13003X-O-T-B-A	13003X	否 NO	TO-92	编带 Brede
3DD13003X-O-T-N-C	13003X	否 NO	TO-92	袋装 Bag
3DD13003X-O-M-N-C	13003X	否 NO	TO-126	袋装 Bag
3DD13003X-O-M-N-B	13003X	否 NO	TO-126	条管 Tube
3DD13003X-O-MS-N-C	13003X	否 NO	TO-126S	袋装 Bag
3DD13003X-O-MS-N-B	13003X	否 NO	TO-126S	条管 Tube
3DD13003X-O-Z-N-C	13003X	否 NO	TO-220	袋装 Bag
3DD13003X-O-Z-N-B	13003X	否 NO	TO-220	条管 Tube





## 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>	600	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)	P <sub>C</sub>	1	W
最大集电极耗散功率 Total Dissipation (TO-126(S))	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	400	490	-	V
V(BR) <sub>CBO</sub>	I <sub>C</sub> =1mA, I <sub>B</sub> =0	600	800	-	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> =580V, I <sub>E</sub> =0	-	-	5	μA
I <sub>CEO</sub>	V <sub>CE</sub> =400V, I <sub>B</sub> =0	-	-	10	μA
I <sub>EBO</sub>	V <sub>EB</sub> =7V, I <sub>C</sub> =0	-	-	5	μA
hFE	V <sub>CE</sub> =10V, I <sub>C</sub> =500mA	8	20	40	-
V <sub>CE(sat)</sub>	I <sub>C</sub> =0.5A, I <sub>B</sub> =0.1A	-	0.18	0.5	V
	I <sub>C</sub> =1.5A, I <sub>B</sub> =0.5A	-	0.18	3	V
V <sub>BE(sat)</sub>	I <sub>C</sub> =0.5A, I <sub>B</sub> =0.1A	-	0.9	1	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> =0.5A	4	-	-	MHz

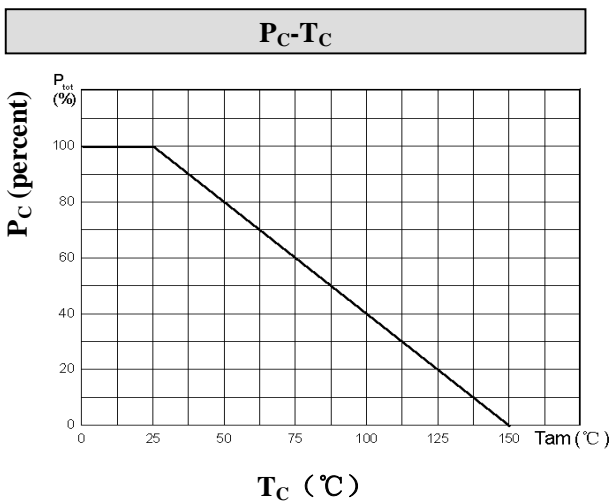
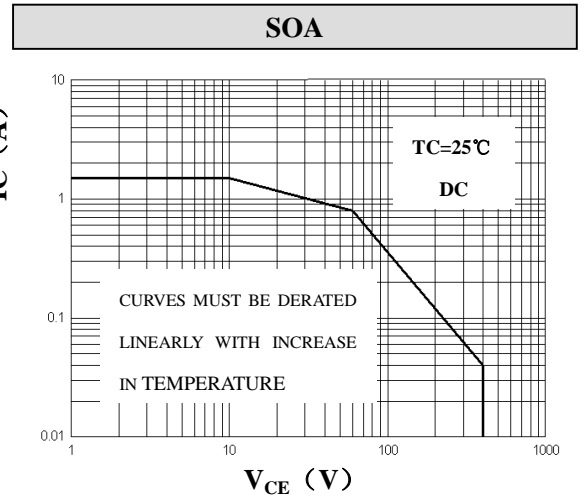
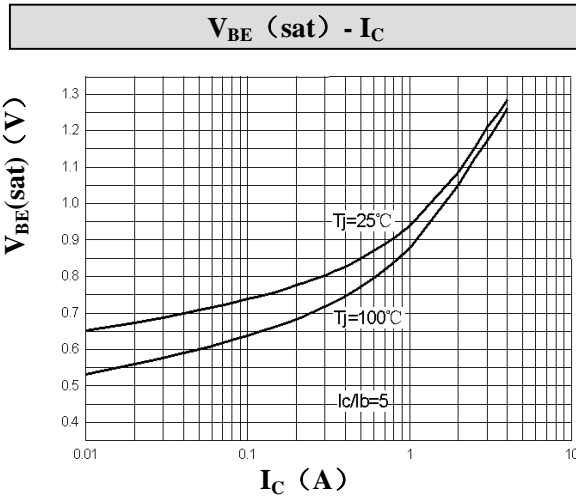
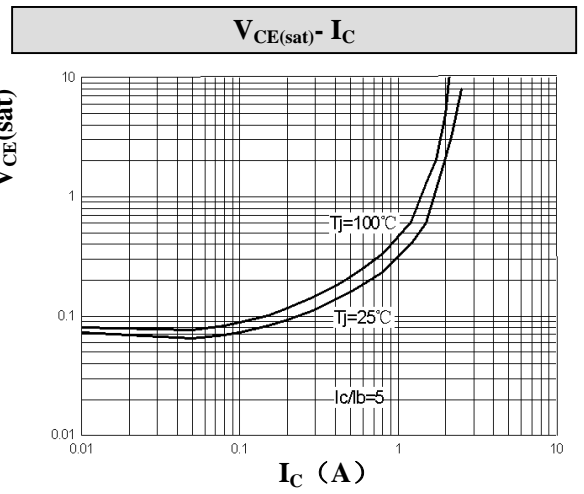
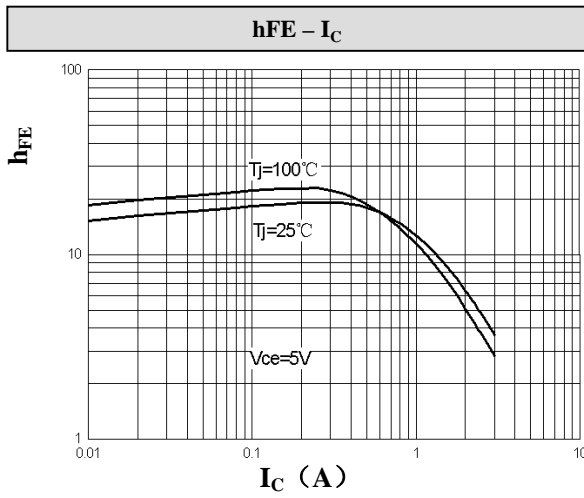
## 热特性 THERMAL CHARACTERISTIC

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 TO-92 Thermal Resistance Junction Case TO-92	R <sub>th(j-a)</sub>	-	125	°C/W
结到管壳的热阻 TO-126(S) Thermal Resistance Junction Case TO-126(S)	R <sub>th(j-c)</sub>	-	6.25	°C/W
结到管壳的热阻 TO-220 Thermal Resistance Junction Case TO-220	R <sub>th(j-c)</sub>	-	3.125	°C/W





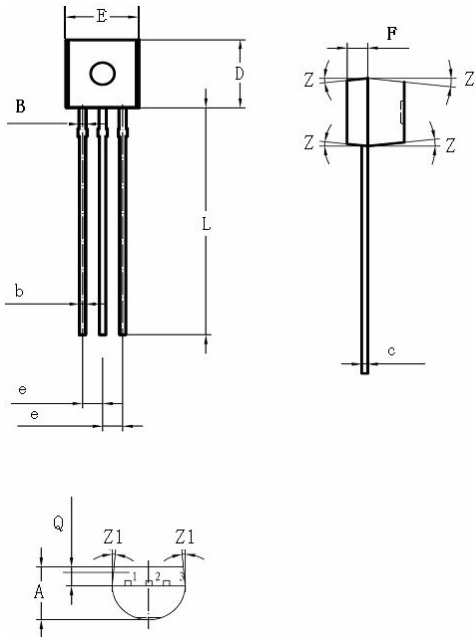
特征曲线 ELECTRICAL CHARACTERISTICS (curves)



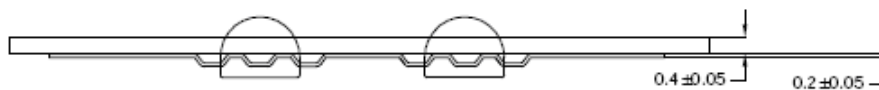
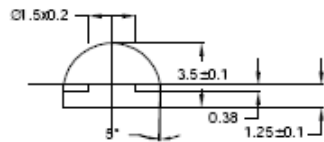
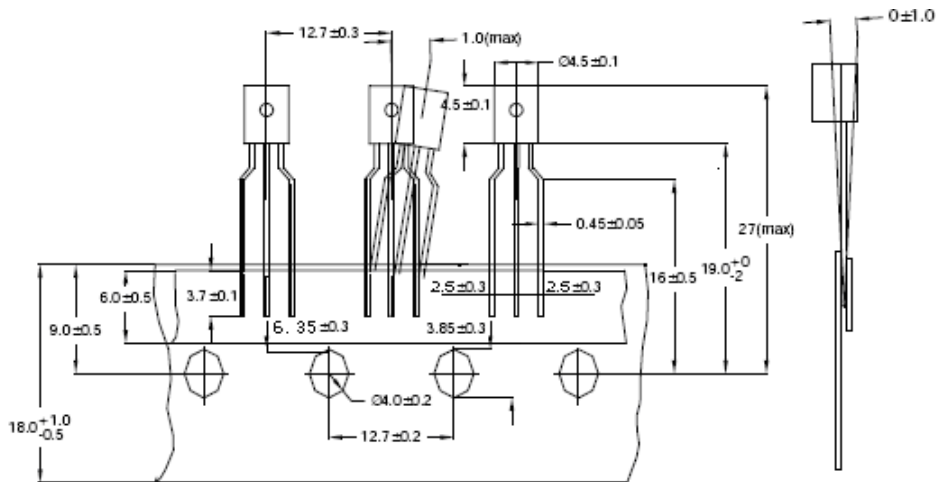


外形尺寸 PACKAGE MECHANICAL DATA  
TO-92

单位 Unit : mm



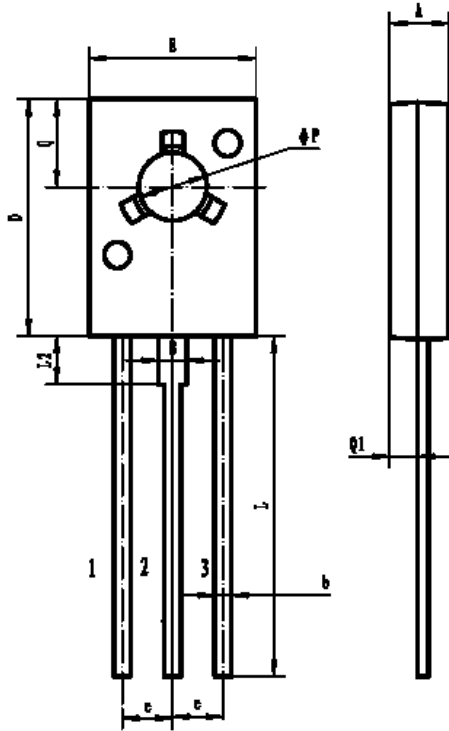
A	3.30-3.90
B	0.35-0.55
b	0.35-0.55
c	0.31-0.51
D	4.30-4.90
E	4.30-4.90
e	1.17-1.37
F	1.00-1.60
L	12.50-15.50
Q	1.00-1.60
Z	2°
Z1	5°





外形尺寸 PACKAGE MECHANICAL DATA  
TO-126

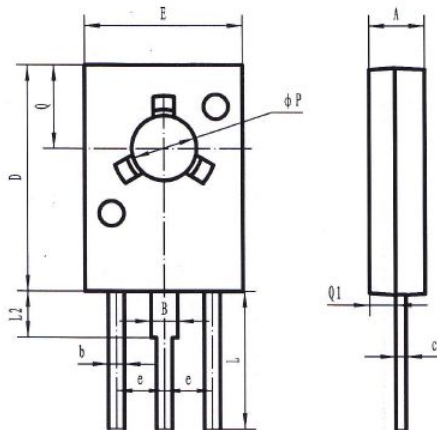
单位 Unit : mm



符号 symbol	MIN	MAX
A	2.50	2.90
B	1.22	1.28
C	0.30	0.70
D	10.50	11.10
E	7.10	8.10
Q	3.80	4.20
Q1	1.07	1.47
L	15.30	15.70
L2	2.10	2.30
b	0.60	0.90
e	2.19	2.39

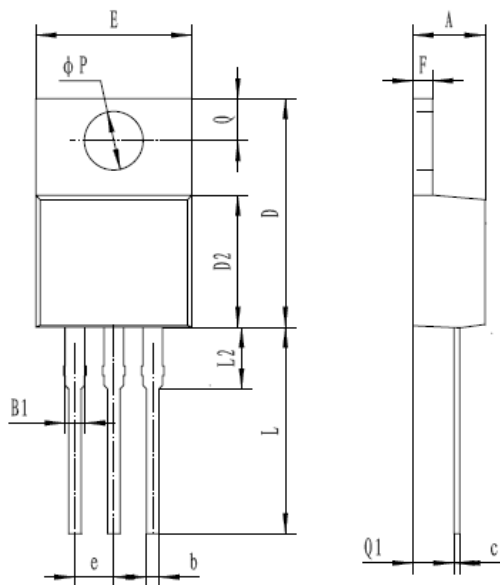
外形尺寸 PACKAGE MECHANICAL DATA  
TO-126S

单位 Unit : mm



A	2.50-2.90
B	1.22-1.28
c	0.30-0.70
D	10.50-11.10
E	7.10-8.10
Q	3.80-4.20
Q1	1.07-1.47
L	7.80-8.20
L2	2.10-2.30
b	0.60-0.90
e	2.19-2.39





符号	尺寸 (mm)
A	4.4-4.8
B1	1.1-1.4
b	0.7-0.95
c	0.3-0.55
D	14.45-16.0
D2	8.2-9.2
E	9.6-10.4
e	2.54 (typ)
F	1.2-1.35
L	13.05-14.05
L2	3.7-3.9
P	3.5-4.0
Q	2.4-3.0
Q1	2.2-2.9



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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

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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.

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**附录 (Appendix)：修订记录 (Revision History)**

日期 Date	旧版本 Last Rev.	新版本 New Rev.	修订内容 Description of Changes
2009-7-30	200906E	200907F	增加 TO-126S 封装
2009-10-29	200907F	200910G	电话号码、订货代码
2010-3-9	200910G	201003H	hFE 条件、Icbo 测试条件 (原条件有误)

