



# 3DD13003

## 主要参数 MAIN CHARACTERISTICS

|                  |      |
|------------------|------|
| $I_C$            | 1.5A |
| $V_{CEO}$        | 400V |
| $P_C(TO-126(S))$ | 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

## APPLICATIONS

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

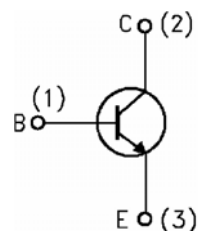
## 产品特性

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

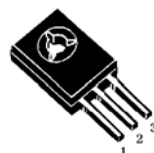
## FEATURES

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

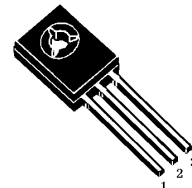
## 封装 Package



TO-126S



TO-126



## 订货信息 ORDER MESSAGE

| 订货型号<br>Order codes | 印记<br>Marking | 无卤素<br>Halogen Free | 封装<br>Package | 包装<br>Packaging |
|---------------------|---------------|---------------------|---------------|-----------------|
| 3DD13003-O-MS-N-C   | D13003        | 否 NO                | TO-126S       | 袋装 Bag          |
| 3DD13003-O-MS-N-B   | D13003        | 否 NO                | TO-126S       | 条管 Tube         |
| 3DD13003-O-M-N-C    | D13003        | 否 NO                | TO-126        | 袋装 Bag          |
| 3DD13003-O-M-N-B    | D13003        | 否 NO                | TO-126        | 条管 Tube         |



绝对最大额定值 ABSOLUTE RATINGS ( $T_c=25^{\circ}\text{C}$ )

| 项 目<br>Parameter                                      | 符 号<br>Symbol | 数 值<br>Value | 单 位<br>Unit        |
|-------------------------------------------------------|---------------|--------------|--------------------|
| 集电极—发射极直流电压 Collector- Emitter Voltage ( $V_{BE}=0$ ) | $V_{CES}$     | 700          | V                  |
| 集电极—发射极直流电压 Collector- Emitter Voltage ( $I_B=0$ )    | $V_{CEO}$     | 400          | V                  |
| 发射极—基极直流电压 Emitter-Base Voltage                       | $V_{EBO}$     | 9            | V                  |
| 最大集电极直流电流 Collector Current (DC)                      | $I_C$         | 1.5          | A                  |
| 最大集电极脉冲电流 Collector Current (pulse)                   | $I_{CP}$      | 3.0          | A                  |
| 最大集电极耗散功率 Total Dissipation (TO-126(S))               | $P_C$         | 20           | W                  |
| 最高结温 Junction Temperature                             | $T_J$         | 150          | $^{\circ}\text{C}$ |
| 贮存温度 Storage Temperature                              | $T_{stg}$     | -55~+150     | $^{\circ}\text{C}$ |

## 电特性 ELECTRICAL CHARACTERISTIC

| 项 目<br>Parameter | 测试条件<br>Tests conditions                                         | 最小值<br>Value(min) | 典型值<br>Value(typ) | 最大值<br>Value(max) | 单位<br>Unit    |
|------------------|------------------------------------------------------------------|-------------------|-------------------|-------------------|---------------|
| $V_{(BR)CEO}$    | $I_C=10\text{mA}, I_B=0$                                         | 400               | 460               | -                 | V             |
| $V_{(BR)CBO}$    | $I_C=1\text{mA}, I_B=0$                                          | 700               | 920               | -                 | V             |
| $V_{(BR)EBO}$    | $I_E=1\text{mA}, I_C=0$                                          | 9                 | 13                | -                 | V             |
| $I_{CBO}$        | $V_{CB}=700\text{V}, I_E=0$                                      | -                 | -                 | 100               | $\mu\text{A}$ |
| $I_{CEO}$        | $V_{CE}=400\text{V}, I_B=0$                                      | -                 | -                 | 50                | $\mu\text{A}$ |
| $I_{EBO}$        | $V_{EB}=7\text{V}, I_C=0$                                        | -                 | -                 | 10                | $\mu\text{A}$ |
| $h_{FE}$         | $V_{CE}=10\text{V}, I_C=500\text{mA}$                            | 8                 | 20                | 40                | -             |
| $V_{CE(sat)}$    | $I_C=0.5\text{A}, I_B=0.1\text{A}$                               | -                 | 0.2               | 0.8               | V             |
|                  | $I_C=1.5\text{A}, I_B=0.3\text{A}$                               | -                 | 0.3               | 3.0               | V             |
| $V_{BE(sat)}$    | $I_C=1.0\text{A}, I_B=0.2\text{A}$                               | -                 | 0.9               | 1.0               | V             |
| $t_f$            | $V_{CC}=24\text{V}, I_C=2.0\text{A}, I_{B1}=-I_{B2}=0.4\text{A}$ | -                 | -                 | 0.7               | $\mu\text{S}$ |
| $t_s$            | $V_{CC}=24\text{V}, I_C=2.0\text{A}, I_{B1}=-I_{B2}=0.4\text{A}$ | -                 | -                 | 4                 | $\mu\text{S}$ |
| $f_T$            | $V_{CE}=10\text{V}, I_C=0.1\text{A}$                             | 4                 | -                 | -                 | MHz           |

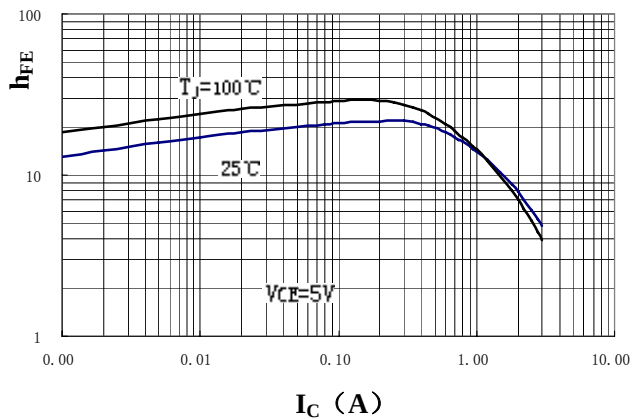
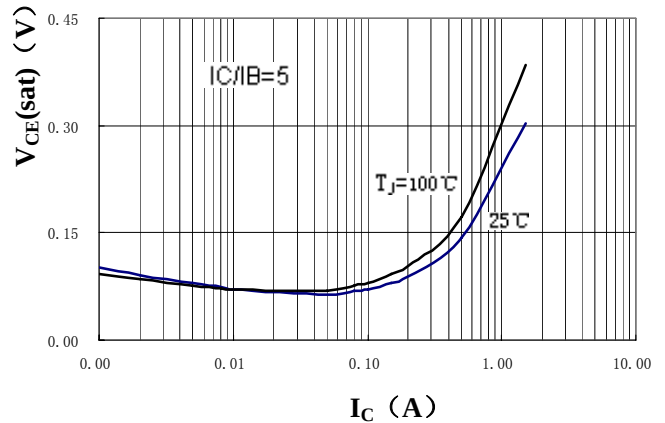
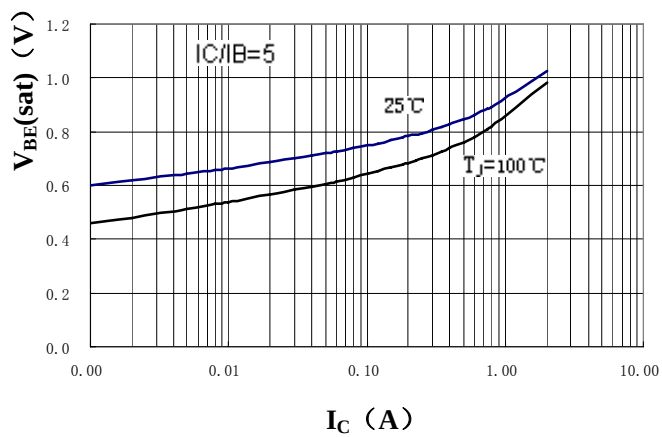
## 热特性 THERMAL CHARACTERISTIC

| 项 目<br>Parameter                                                | 符 号<br>Symbol | 最小值<br>Value(min) | 最大值<br>Value(max) | 单 位<br>Unit          |
|-----------------------------------------------------------------|---------------|-------------------|-------------------|----------------------|
| 结到管壳的热阻 TO-126(S)<br>Thermal Resistance Junction Case TO-126(S) | $R_{th(j-c)}$ | -                 | 6.25              | $^{\circ}\text{C/W}$ |

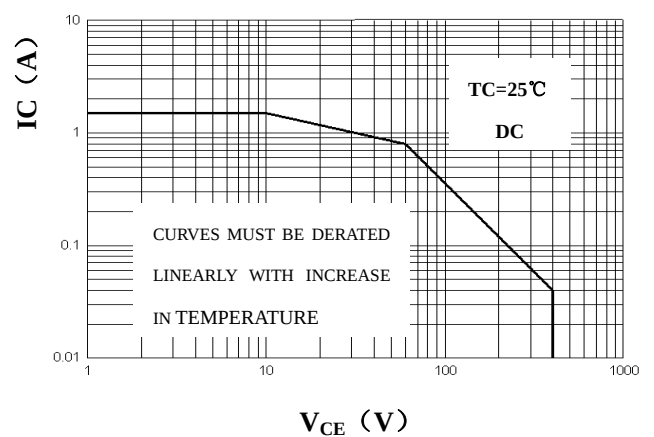
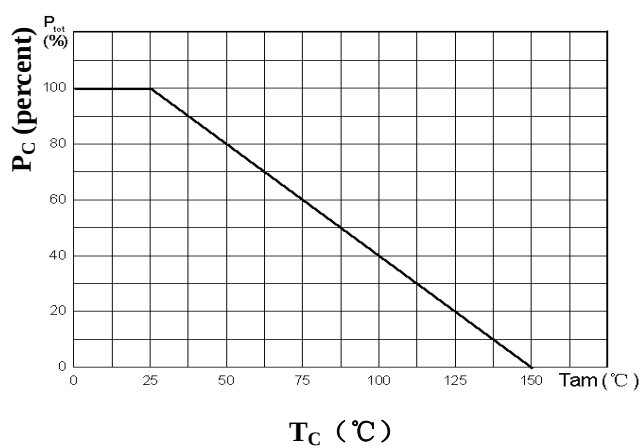




## 特征曲线 ELECTRICAL CHARACTERISTICS (curves)

 $h_{FE} - I_C$  $V_{CE(sat)} - I_C$  $V_{BE(sat)} - I_C$ 

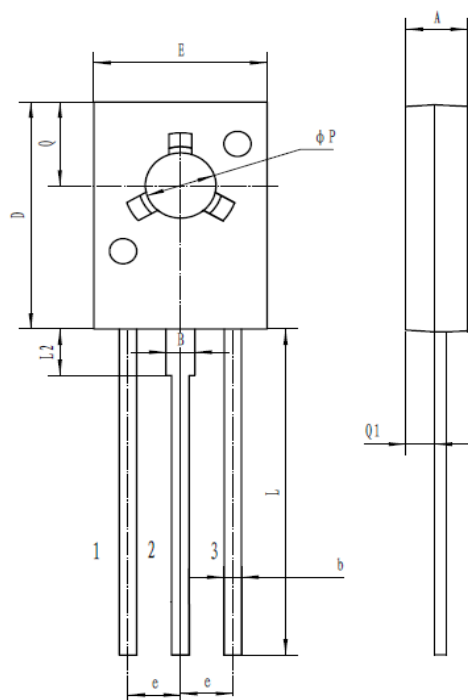
SOA

 $P_C - T_C$ 

# 外形尺寸 PACKAGE MECHANICAL DATA

## TO-126

单位 Unit : mm

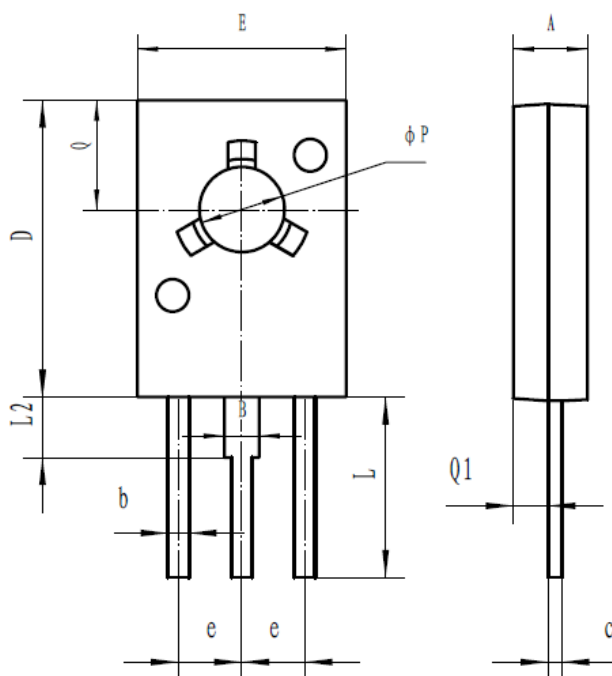


| 符号<br>SYMBD | MIN   | MAX   |
|-------------|-------|-------|
| A           | 2.50  | 2.90  |
| B           | 1.22  | 1.47  |
| C           | 0.30  | 0.70  |
| D           | 10.50 | 11.10 |
| E           | 7.10  | 8.10  |
| Q           | 3.80  | 4.20  |
| Q1          | 1.07  | 1.47  |
| L           | 15.30 | 15.70 |
| L2          | 2.10  | 2.30  |
| b           | 0.60  | 0.90  |
| e           | 2.19  | 2.39  |
| P           | 3.00  | 3.20  |

# 外形尺寸 PACKAGE MECHANICAL DATA

## TO-126S

单位 Unit : mm



| 符号<br>SYMBD | MIN   | MAX   |
|-------------|-------|-------|
| 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           | 7.80  | 8.20  |
| L2          | 2.10  | 2.30  |
| Q           | 3.80  | 4.20  |
| Q1          | 1.07  | 1.47  |
| P           | 3.00  | 3.20  |

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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

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2. We strongly recommend customers check carefully on the trademark when buying our product, if there is any question, please don't be hesitate to contact us.
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<br>Date | 旧版本<br>Last Rev. | 新版本<br>New Rev. | 修订内容<br>Description of Changes |
|------------|------------------|-----------------|--------------------------------|
| 2009-6-2   | 200902C          | 200906D         | 版式                             |
| 2009-7-30  | 200906D          | 200907E         | 增加 TO-126S 封装                  |
| 2009-10-29 | 200907E          | 200910F         | 电话号码                           |
| 2011-1-17  | 200910F          | 201101G         | 外形尺寸，与外形规格书统一                  |

