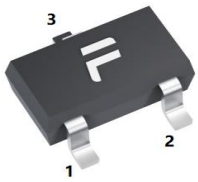
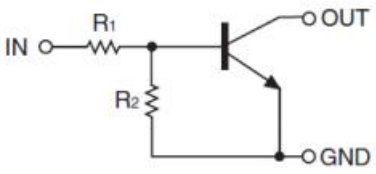
DTD123ECA

**SOT-23 Digital Transistor 数字晶体管**

**■Features 特点**

1.IN 2.GND 3.OUT
NPN With Bias Resistor Network
带偏置电阻




**■Absolute Maximum Ratings 最大额定值**

| Characteristic 特性参数 | Symbol 符号 | Rat 额定值 | Unit 单位 |
|---|---|---|---|
| Supply Voltage 电源电压 | $V_{CC}$ | 50 | V |
| Input Voltage 输入电压 | $V_{IN}$ | -10~+12 | V |
| Output Current 输出电流 | $I_O$ | 500 | mA |
| Power dissipation 耗散功率 | $P_C(T_a=25℃)$ | 200 | mW |
| Thermal Resistance Junction-Ambient 热阻 | $R_{\Theta JA}$ | 625 | ℃/W |
| Junction and Storage Temperature 结温和储藏温度 | $T_J, T_{stg}$ | -55to+150℃ | |

**■Device Marking 产品打标**

| |
|---|
| DTD123ECA=F22 |

## ■Electrical Characteristics 电特性

**($T_A$=25℃ unless otherwise noted** 如无特殊说明，温度为 25℃)

| Characteristic<br>特性参数 | Symbol<br>符号 | Min<br>最小值 | Type<br>典型值 | Max<br>最大值 | Unit<br>单位 |
|---|---|---|---|---|---|
| Input Voltage 输入电压<br>($V_{CC}$=5V，$I_O$=100μA) | $V_{I(off)}$ | 0.5 | — | — | V |
| Input Voltage 输入电压<br>($V_O$=0.3V，$I_O$=20mA) | $V_{I(on)}$ | — | — | 3 | V |
| Output Voltage 输出电压<br>($I_O/I_I$=50mA/2.5mA) | $V_{O(on)}$ | — | — | 0.3 | V |
| Input Current 输入电流<br>($V_I$=5V) | $I_I$ | — | — | 3.8 | mA |
| Output Current 输出电流<br>($V_{CC}$=50V，$V_I$=0) | $I_{O(off)}$ | — | — | 0.5 | μA |
| DC Current Gain<br>直流电流增益<br>($V_O$=5V，$I_O$=50mA) | $G_I$ | 39 | — | — | |
| Input Resistor<br>输入电阻 | R1 | 1.54 | 2.2 | 2.86 | KΩ |
| Resistor Ratio<br>电阻比率 | R2/R1 | 0.8 | 1 | 1.2 | |
| Transition frequency<br>特征频率<br>($V_O$=10V，$I_O$=50mA) | $f_T$ | — | 250 | — | MHz |

## ■Typical Characteristic Curve 典型特性曲线

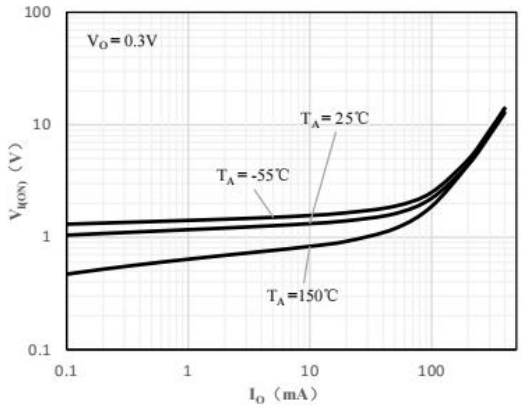



Fig 1 Input Voltage vs Output Current

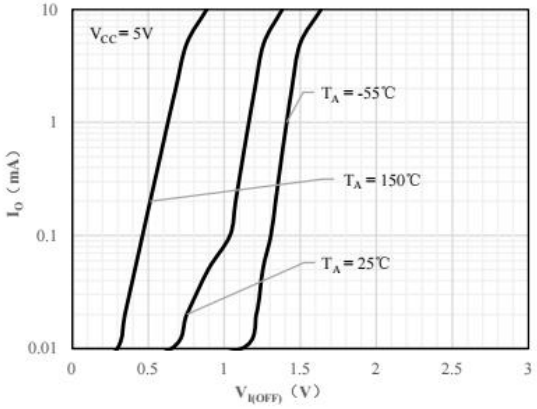



Fig 2 Output Current vs Input Voltage

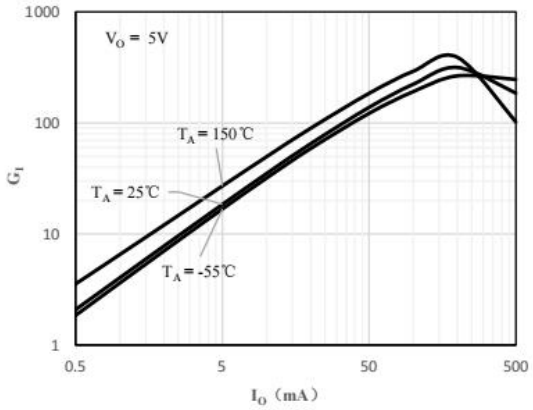



Fig 3 DC Current Gain vs Output Current

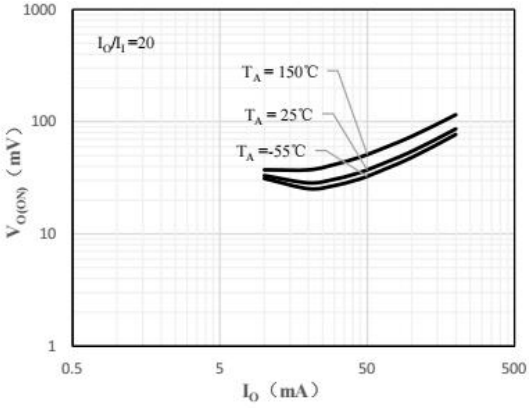



Fig 4 Output Voltage vs Output Current

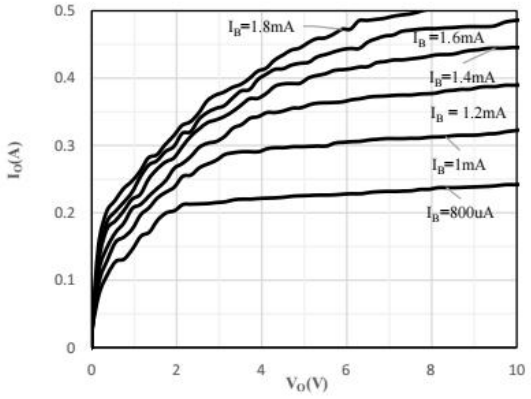



Fig 5 Output Current vs. Output Voltage

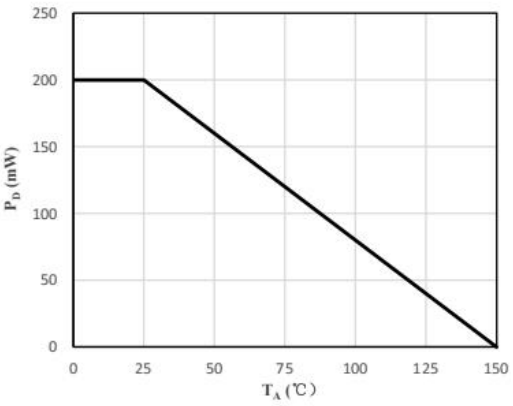
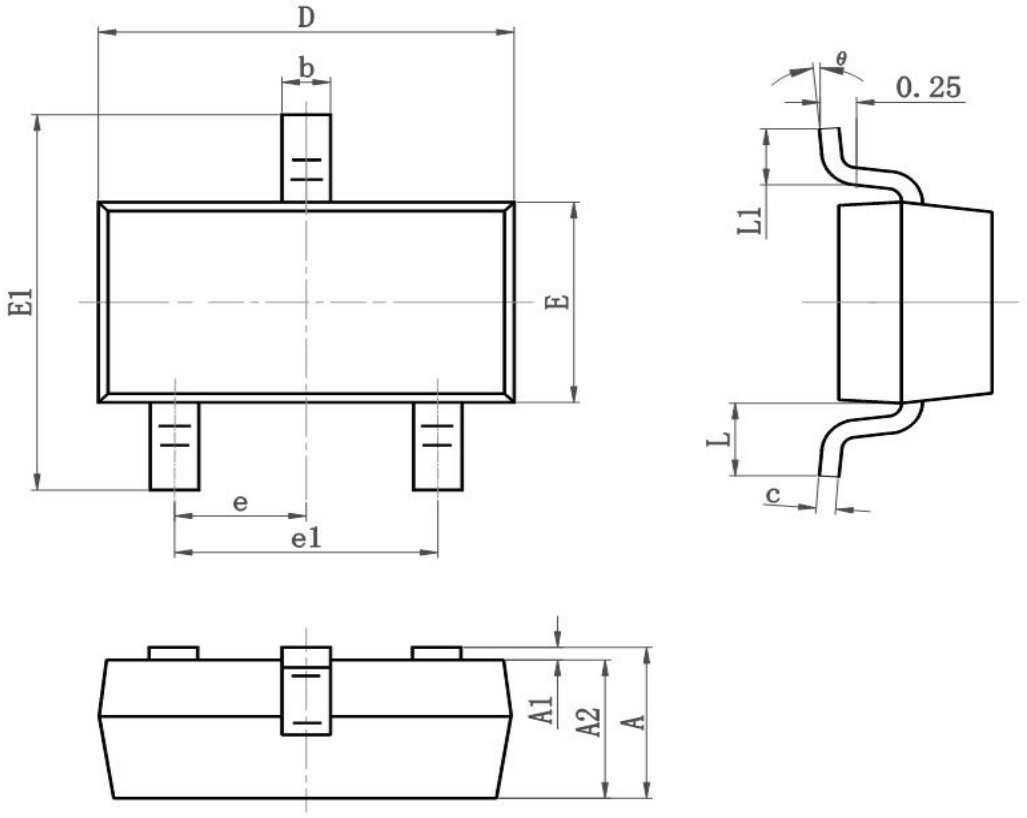



Fig 6 Power Dissipation vs. Air Temperature

## ■Dimension 外形封装尺寸




| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|---|---|---|---|---|
| | Min | Max | Min | Max |
| A | 0.900 | 1.150 | 0.035 | 0.045 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.050 | 0.035 | 0.041 |
| b | 0.300 | 0.500 | 0.012 | 0.020 |
| c | 0.080 | 0.150 | 0.003 | 0.006 |
| D | 2.800 | 3.000 | 0.110 | 0.118 |
| E | 1.200 | 1.400 | 0.050 | 0.055 |
| E1 | 2.250 | 2.550 | 0.089 | 0.100 |
| e | 0.900 | 1.00 | 0.035 | 0.039 |
| e1 | 1.800 | 2.000 | 0.071 | 0.079 |
| L | 0.500 | 0.600 | 0.020 | 0.024 |
| L1 | 0.300 | 0.500 | 0.012 | 0.020 |
| θ | 0° | 8° | 0° | 8° |