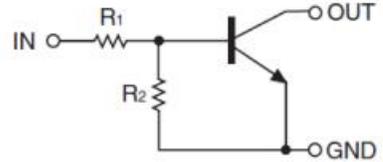


SOT-23 Digital Transistor 数字晶体管

■ **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~+40	V
Output Current 输出电流	I_O	500	mA
Power dissipation 耗散功率	$P_C(T_a=25^{\circ}C)$	200	mW
Thermal Resistance Junction-Ambient 热阻	$R_{\theta JA}$	625	$^{\circ}C/W$
Junction and Storage Temperature 结温和储藏温度	T_J, T_{stg}	-55to+150 $^{\circ}C$	

■ **Device Marking 产品打标**

DTD143ECA=F23

■ Electrical Characteristics 电特性

($T_A=25^{\circ}\text{C}$ unless otherwise noted 如无特殊说明, 温度为 25°C)

Characteristic 特性参数	Symbol 符号	Min 最小值	Type 典型值	Max 最大值	Unit 单位
Input Voltage 输入电压 ($V_{CC}=5\text{V}$, $I_O=100\mu\text{A}$)	$V_{I(\text{off})}$	0.5	—	—	V
Input Voltage 输入电压 ($V_O=0.3\text{V}$, $I_O=20\text{mA}$)	$V_{I(\text{on})}$	—	—	3	V
Output Voltage 输出电压 ($I_O/I_I=50\text{mA}/2.5\text{mA}$)	$V_{O(\text{on})}$	—	—	0.3	V
Input Current 输入电流 ($V_I=5\text{V}$)	I_I	—	—	1.8	mA
Output Current 输出电流 ($V_{CC}=50\text{V}$, $V_I=0$)	$I_{O(\text{off})}$	—	—	0.5	μA
DC Current Gain 直流电流增益 ($V_O=5\text{V}$, $I_O=50\text{mA}$)	G_I	47	—	—	
Input Resistor 输入电阻	R1	3.76	4.7	5.64	$\text{K}\Omega$
Resistor Ratio 电阻比率	R2/R1	0.8	1	1.2	
Transition frequency 特征频率 ($V_O=10\text{V}$, $I_O=50\text{mA}$)	f_T	—	200	—	MHz

■ Typical Characteristic Curve 典型特性曲线

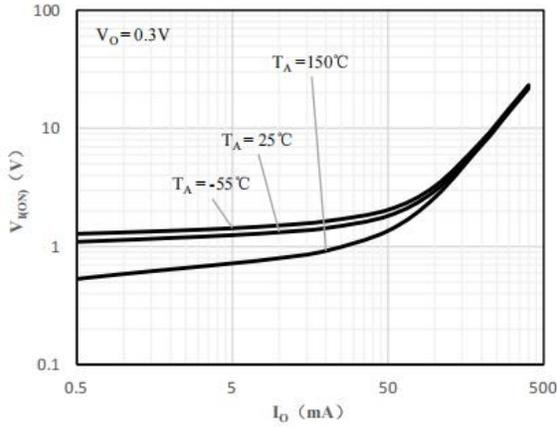


Fig 1 Input Voltage vs Output Current

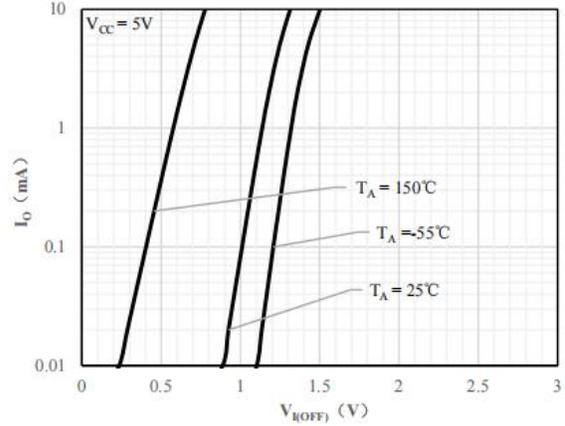


Fig 2 Output Current vs Input Voltage

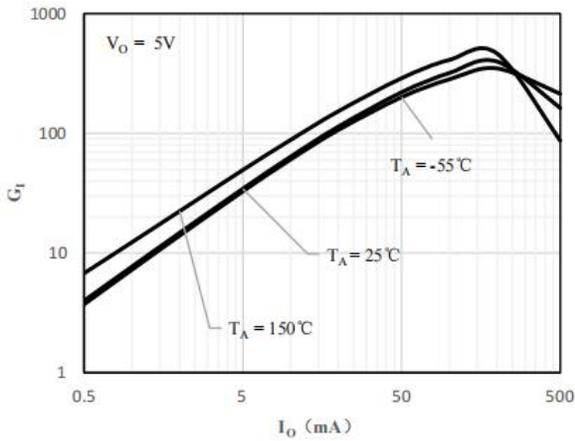


Fig 3 DC Current Gain vs Output Current

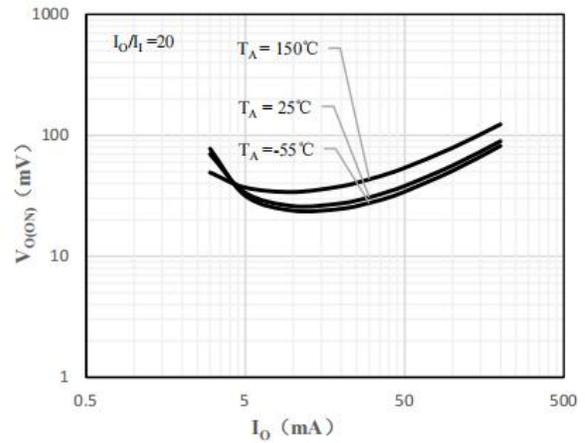


Fig 4 Output Voltage vs Output Current

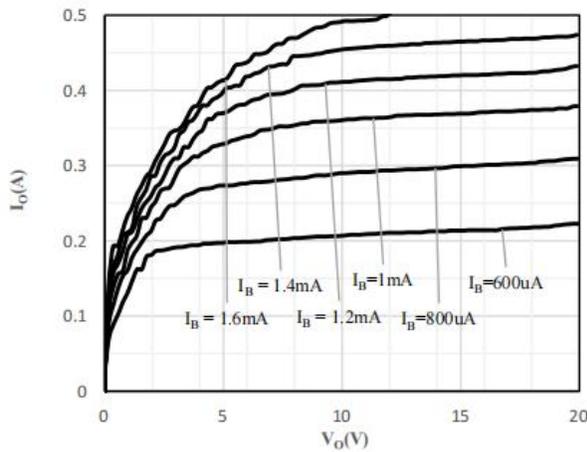


Fig 5 Output Current vs. Output Voltage

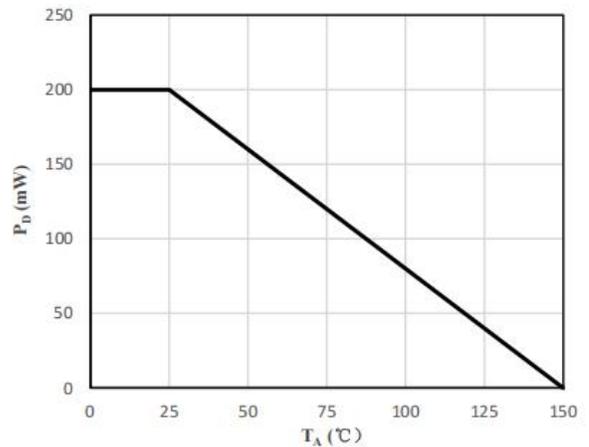
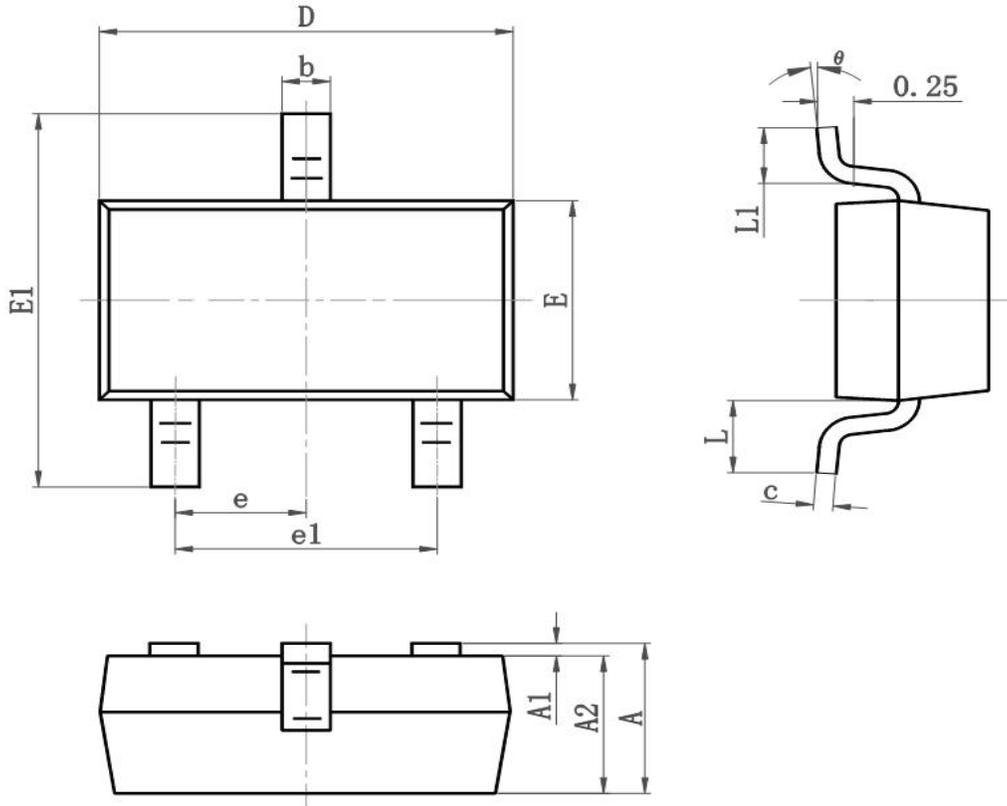


Fig 6 Power Dissipation vs. Air Temperature

■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°