

SOT-23 Digital Transistor 数字晶体管

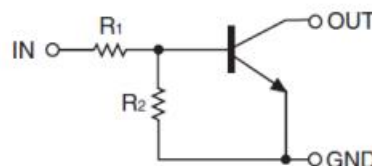
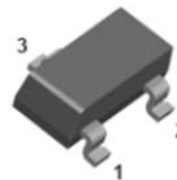
■ Features 特点

NPN With Bias Resistor Network
带偏置电阻



SOT-23

1. IN
2. GND
3. OUT



■ 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}	-5~+10	V
Output Current 输出电流	I_O	100	mA
Power dissipation 耗散功率	$P_C(T_a=25^{\circ}\text{C})$	200	mW
Thermal Resistance Junction-Ambient 热阻	$R_{\theta JA}$	625	$^{\circ}\text{C}/\text{W}$
Junction and Storage Temperature 结温和储藏温度	T_J, T_{stg}	-55to+150 $^{\circ}\text{C}$	

■ Device Marking 产品打标

DTC113ZCA=E21

■Electrical Characteristics 电特性

(TA=25°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} =5V, I _O =100μA)	V _{I(off)}	0.3	—	—	V
Input Voltage 输入电压 (V _O =0.3V, I _O =20mA)	V _{I(on)}	—	—	3	V
Output Voltage 输出电压 (I _O /I _I =10mA/0.5mA)	V _{O(on)}	—	—	0.3	V
Input Current 输入电流 (V _I =5V)	I _I	—	—	7.2	mA
Output Current 输出电流 (V _{CC} =50V, V _I =0)	I _{O(off)}	—	—	0.5	μA
DC Current Gain 直流电流增益 (V _O =5V, I _O =5mA)	G _I	33	—	—	
Input Resistor 输入电阻	R _I	0.7	1	1.3	KΩ
Resistor Ratio 电阻比率	R ₂ /R ₁	8	10	12	
Transition frequency 特征频率 (V _O =10V, I _O =5mA)	f _T	—	250	—	MHz

■ Typical Characteristic Curve 典型特性曲线

Fig.1 Input voltage vs. output current (ON characteristics)

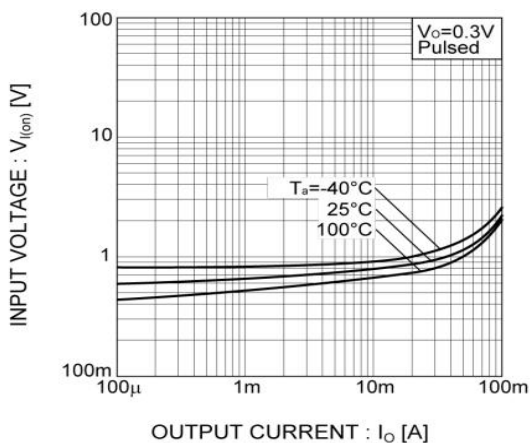


Fig.2 Output current vs. input voltage (OFF characteristics)

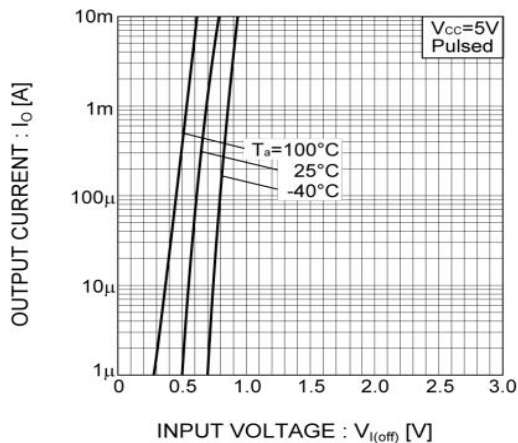


Fig.3 Output current vs. output voltage

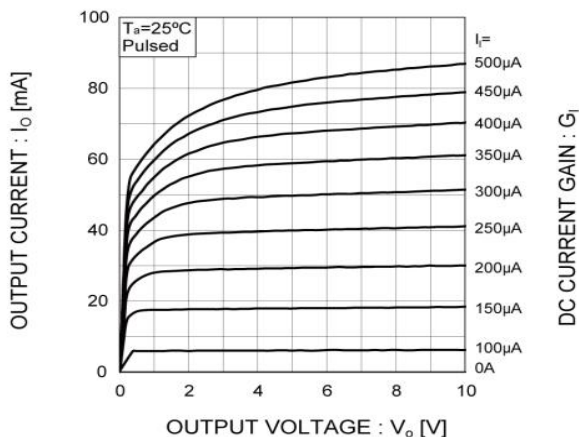


Fig.4 DC current gain vs. output current

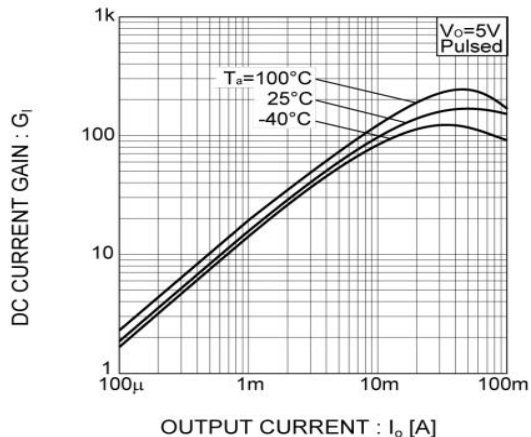
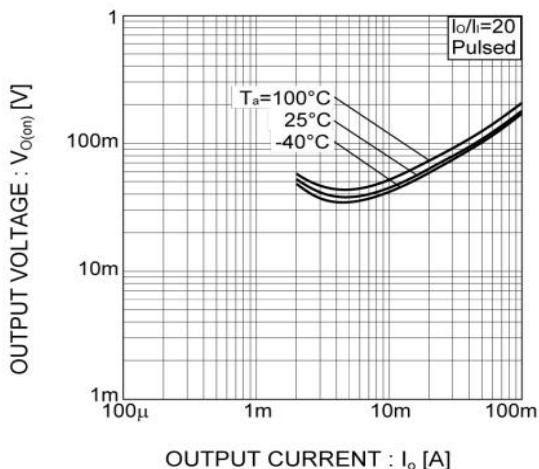
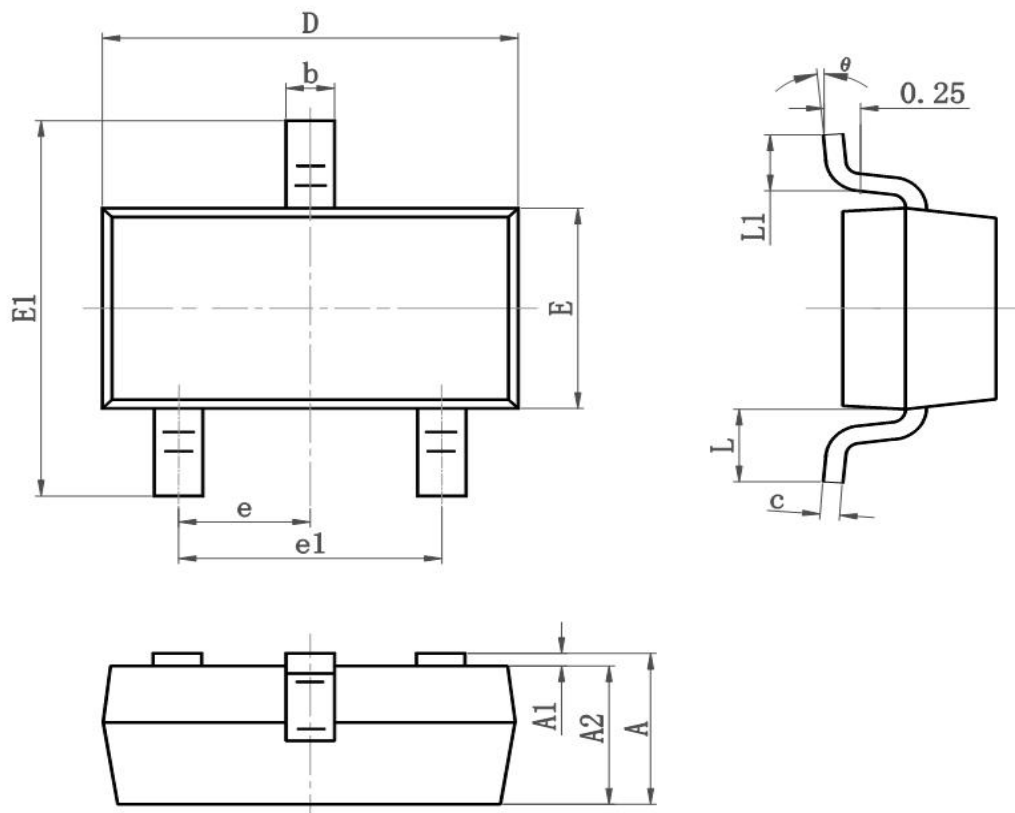


Fig.5 Output voltage vs. output current



■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°