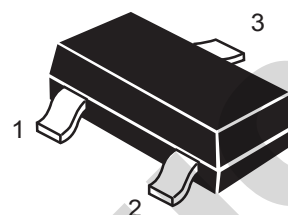


NPN digital transistor
(Built-in resistor type)

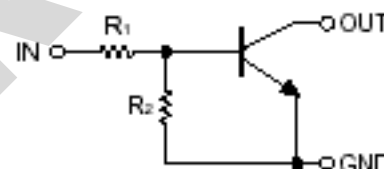
ABSOLUTE MAXIMUM RATINGS at Ta=25℃

Characteristic	Symbol	Rating	Unit
supply Voltage	V _{cc}	50	V
Input voltage	V _{IN}	-5~+12	V
Output Current	I _o	100	mA
Power dissipation	P _D	200	mW
Junction Temperature	T _j	150	℃
Storage Temperature	T _{stg}	-55-150	℃

Package:SOT-23



PIN:	1	2	3
STYLE			
NO.1	B	E	C



ELECTRICAL CHARACTERISTICS at Ta=25℃

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Input Voltage	V _{I(off)}			0.5	V	I _o =100uA V _{cc} =5V
	V _{I(on)}	1.1			V	I _o = 5mA V _o =0.3V
Output voltage	V _{O(on)}			0.3	V	I _o = 10mA I _f =0.5mA
Input current	I _I			3.6	mA	V _I = 5V
Output current	I _{O(off)}			0.5	uA	V _{cc} = 50V V _I = 0V
DC Current Gain	H _{fe}	80				V _{cc} = 5V I _o = 10mA
Input resistance	R ₁	1.54	2.2	2.86	KΩ	
Resistance ratio	R ₂ /R ₁	17	21	26		
Current Gain-Bandwidth Product	f _T		250		MHz	V _{ce} = 10V I _E = -5mA, f=100MHz

* Total Device Dissipation : FR=1X0.75X0.062in Board,Derate 25℃.

Pulse Test : Pulse Width ≤300uS,Duty cycle ≤2%

DEVICE MARKING:

DTC123J=E42

●Electrical characteristics curves

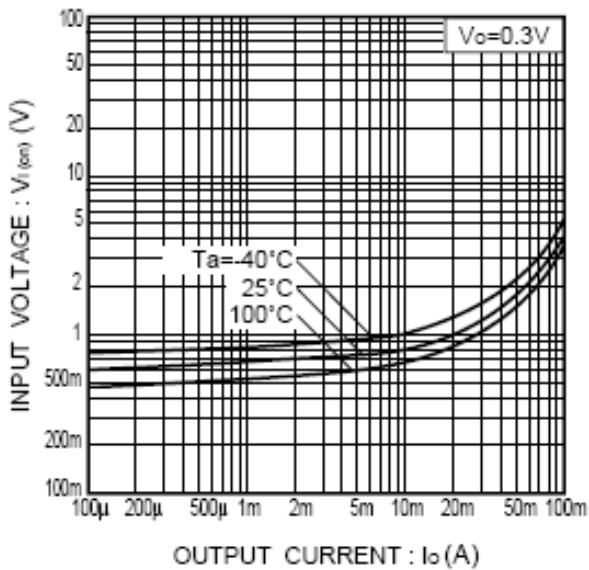


Fig.1 Input voltage vs. output current (ON characteristics)

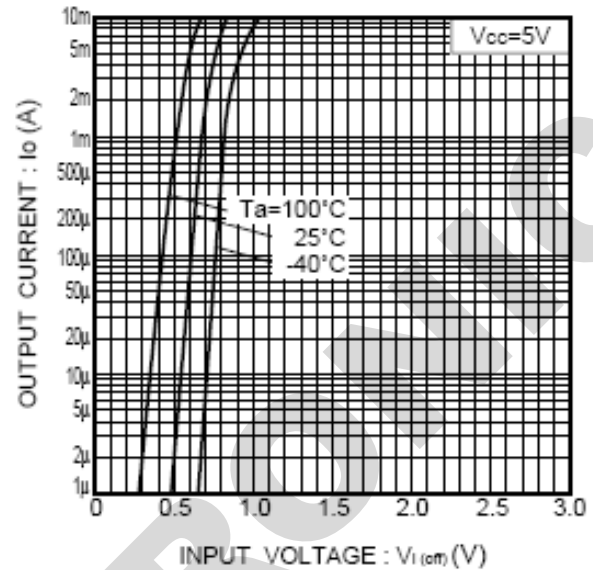


Fig.2 Output current vs. input voltage (OFF characteristics)

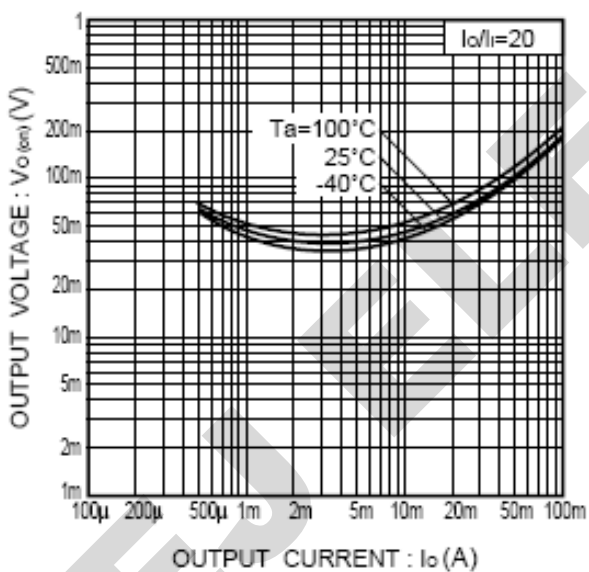


Fig.4 Output voltage vs. output current

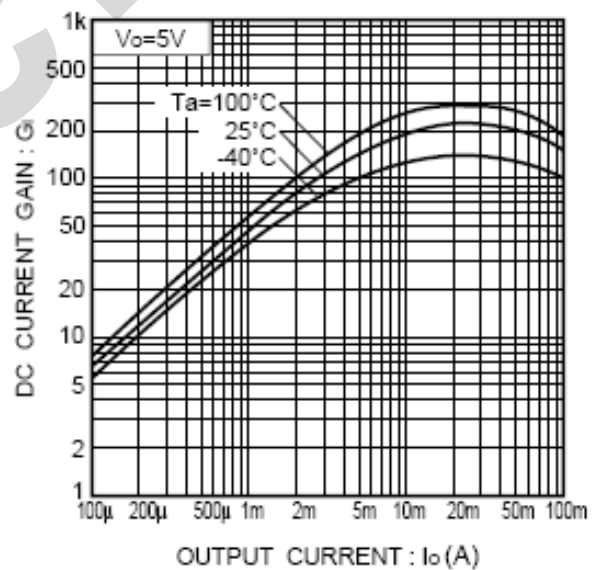
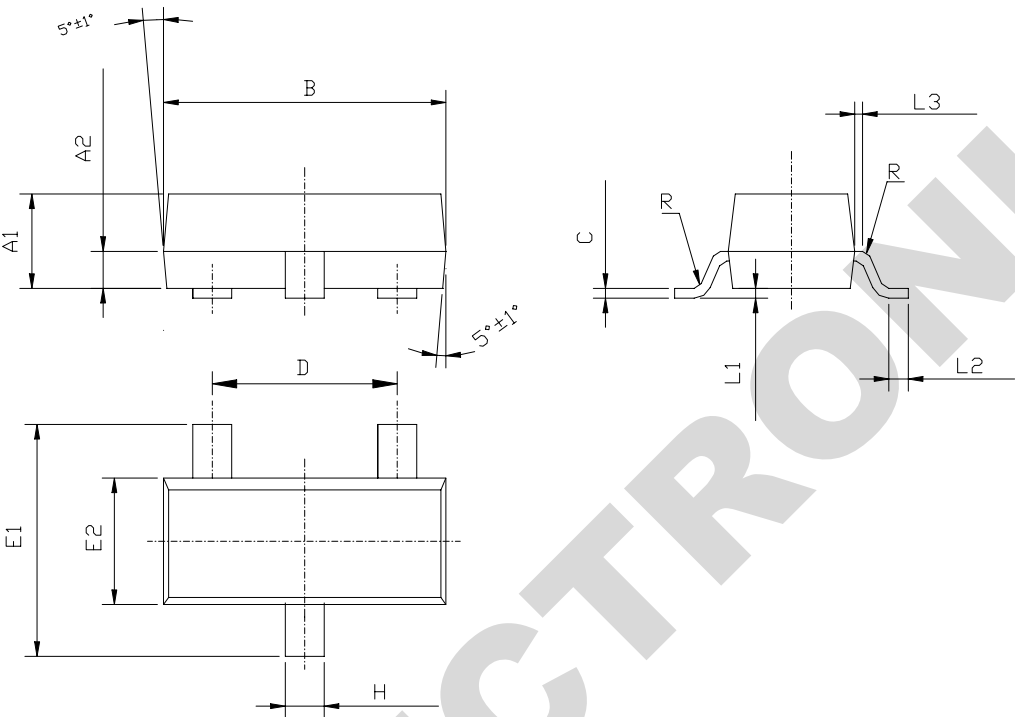
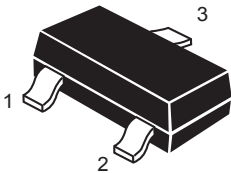


Fig.3 DC current gain vs. output current

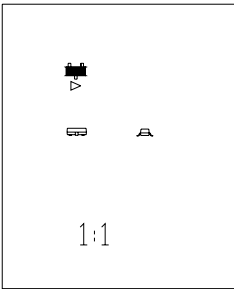
外型尺寸及内部结构图
OUTSIDE DEMENSION AND INTERNAL CONFIGURATION (SOT-23)



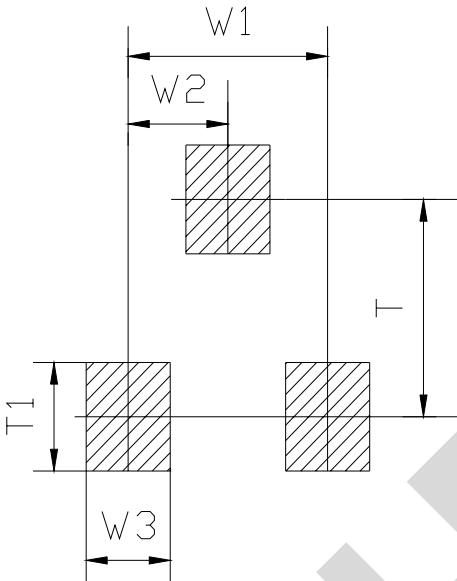
Symbol	Dimensions in Millimeters			内部结构 STYLS	管脚 PIN		
	Min	Nominal	Max		1 脚	2 脚	3 脚
A1	0.900	0.970	1.000	6	基极 BASE	发射极 EMITTER	集电极 COLLCTOR
A2	0.350	0.380	0.410				
B	2.800	2.900	3.000	8	阳极 ANODE	不连接 NO- CONNECTION	阴极 CATHODE
C	0.085	0.100	0.150				
D	1.800	1.900	2.000	9	阳极 ANODE	阳极 ANODE	阴极 CATHODE
E1	2.200	2.400	2.600				
E2	1.200	1.300	1.400	11	阳极 ANODE	阴极 CATHODE	阳极-阴极 ANODE-CATHODE
H	0.300	0.400	0.500				
L1	0.000		0.100	12	阴极 CATHODE	阴极 CATHODE	阳极 ANODE
L2	0.200						
L3	0.030	0.080	0.130	18	不连接 NO- CONNECTION	阴极 CATHODE	阳极 ANODE
R	0.080TYP						
				19	阴极 CATHODE	阳极 ANODE	阴极-阳极 CATHODE-ANODE



OUTSIDE



Scale 1:1 on letter size paper



FOOTPRINTS FOR SOLDERING

Symbol	Dimensions in Millimeters	Dimensions in Inches
	Nominal	Nominal
W1	1.900	0.0748
W2	0.950	0.0374
W3	0.800	0.0315
T	2.000	0.0787
T1	1.000	0.0394