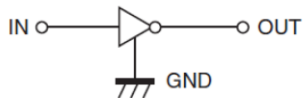
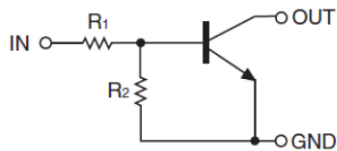


DTC113ZM Digital Transistor(NPN)

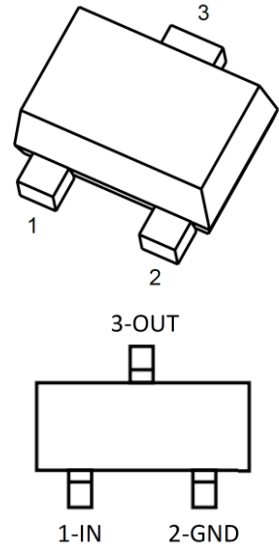
Feature

- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors
- The bias resistors consist of thin-film resistors with complete isolation to allow positive biasing of the input .They also have the advantage of almost completely eliminating parasitic effects
- Only the on/off conditions need to be set for operation, making device design easy

Schematic diagram



SOT-723



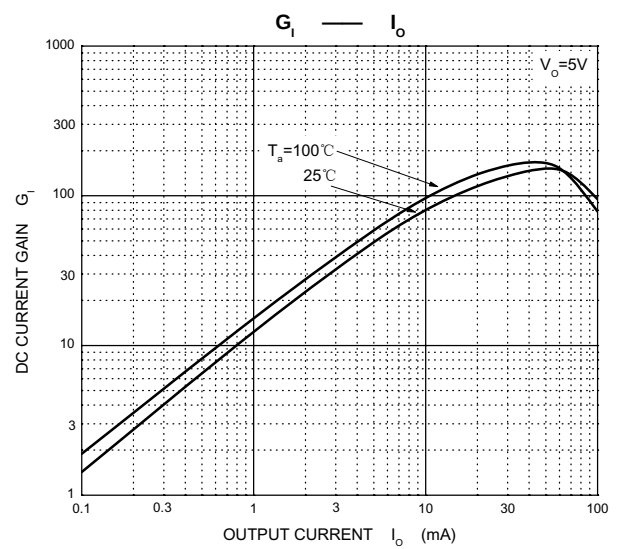
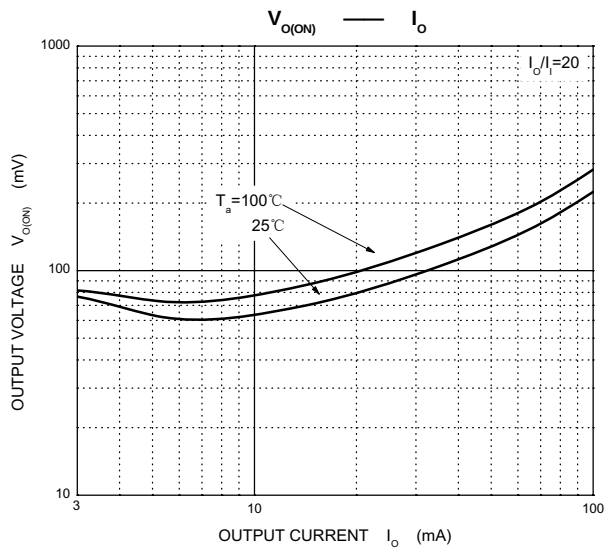
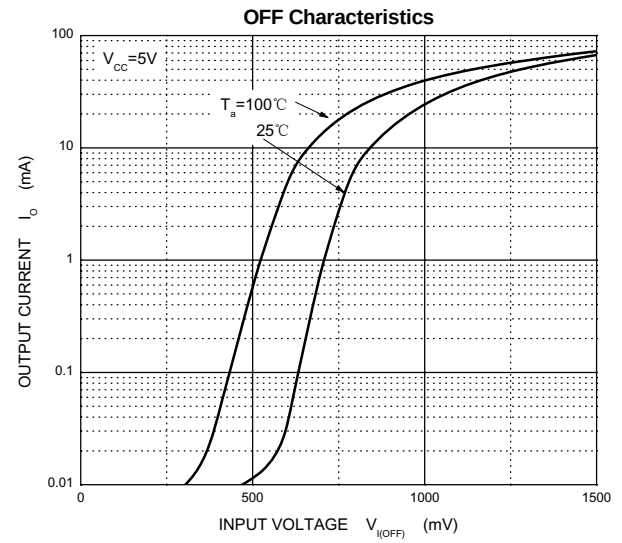
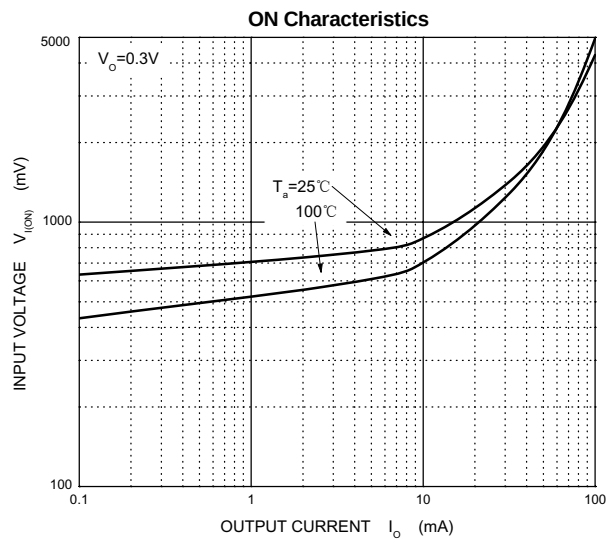
ABSOLUTE MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

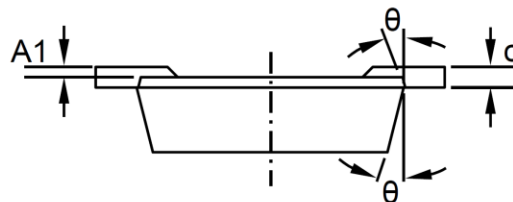
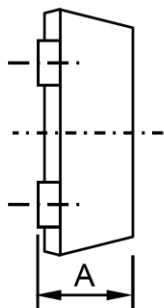
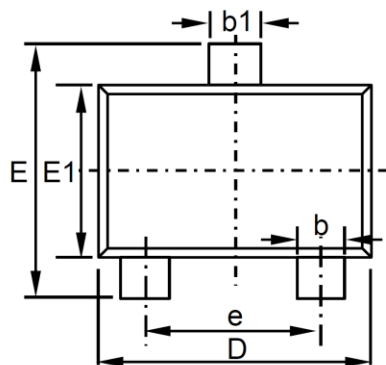
Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	50	V
Input Voltage	V_{IN}	-5~+10	V
Output Current	I_O	100	mA
Power Dissipation	P_D	150	mW
Junction Temperature	T_J	125	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-45 ~ +125	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

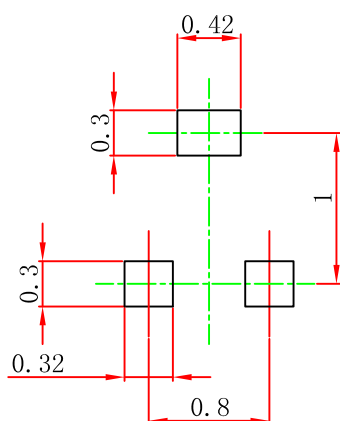
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Input voltage	$V_{I(off)}$	$V_{CC}=5V, I_O=100\mu A$	0.3			V
	$V_{I(on)}$	$V_O=0.3V, I_O=10mA$			3	V
Output voltage	$V_{O(on)}$	$I_O=10mA, I_I=0.5mA$			0.3	V
Input current	I_I	$V_I=5V$			7.2	mA
Output current	$I_{O(off)}$	$V_{CC}=50V, V_I=0V$			0.5	μA
DC current gain	G_I	$V_O=5V, I_O=5mA$	33			
Input resistance	R_1		0.7	1.0	1.3	k Ω
Resistance ratio	R_2/R_1		8	10	12	
Transition frequency	f_T	$V_O=10V, I_O=5mA, f=1MHz$		250		MHz

Typical Characteristics



SOT-723 Package Information


SOT-723 (unit: mm)		
Dim.	Min.	Max.
A	0.40	0.50
A1	0.00	0.05
b	0.15	0.27
b1	0.20	0.37
c	0.06	0.16
D	1.10	1.30
E	1.10	1.30
E1	0.70	0.90
e	0.80 TYP.	
θ	7° REF.	

SOT-723 Suggested Pad Layout


Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purpose only.