

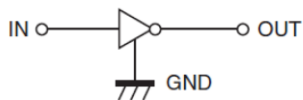
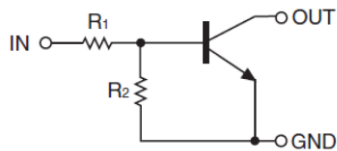


DTC143ZUA Digital Transistor(NPN)

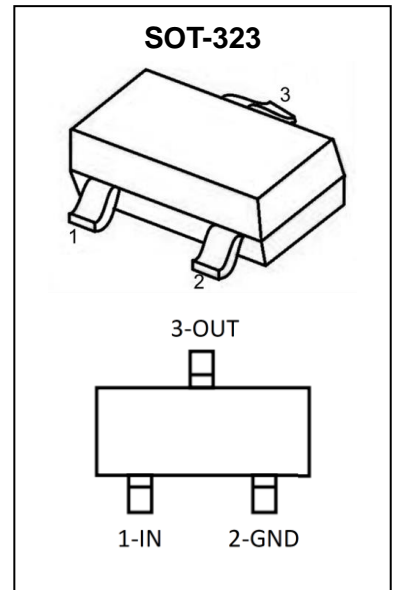
Feature

- 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



Marking: E23



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

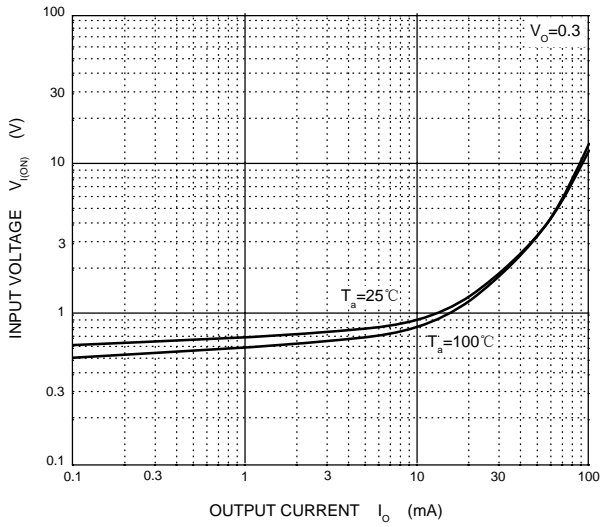
Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	50	V
Input Voltage	V_{IN}	-5~+30	V
Output Current	I_o	100	mA
Power Dissipation	P_D	200	mW
Junction Temperature	T_J	125	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-45 ~ +125	$^{\circ}\text{C}$

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

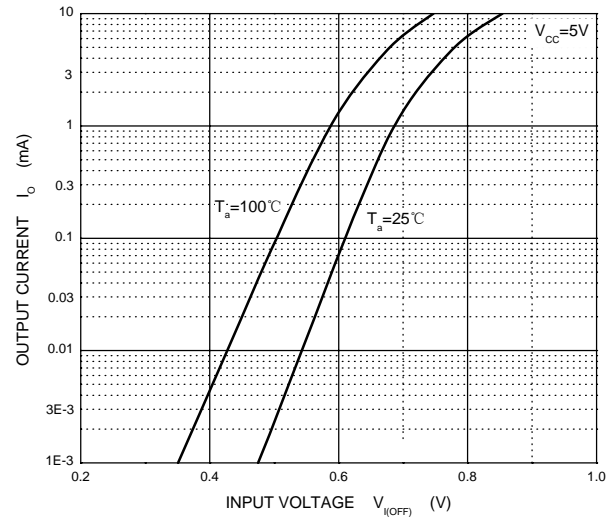
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Input voltage	$V_{I(off)}$	$V_{CC}=5V, I_o=100\mu A$	0.5			V
	$V_{I(on)}$	$V_o=0.3V, I_o=5mA$			1.3	V
Output voltage	$V_{O(on)}$	$I_o=10mA, I_i=0.5mA$		0.1	0.3	V
Input current	I_i	$V_i=5V$			1.8	mA
Output current	$I_{O(off)}$	$V_{CC}=50V, V_i=0V$			0.5	μA
DC current gain	G_i	$V_o=5V, I_o=10mA$	80			
Input resistance	R_1		3.29	4.7	6.11	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

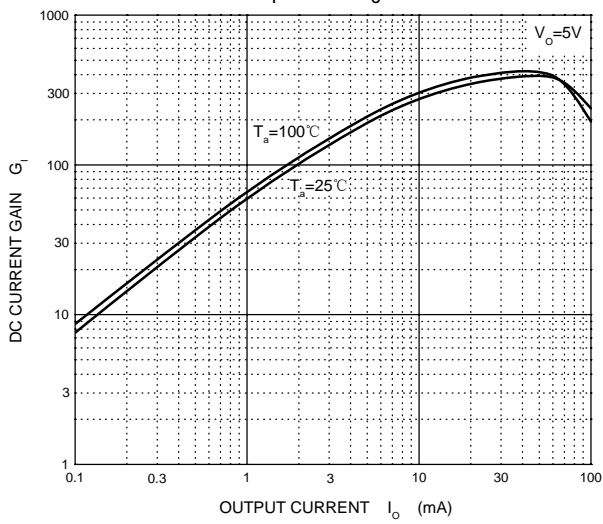
ON Characteristics



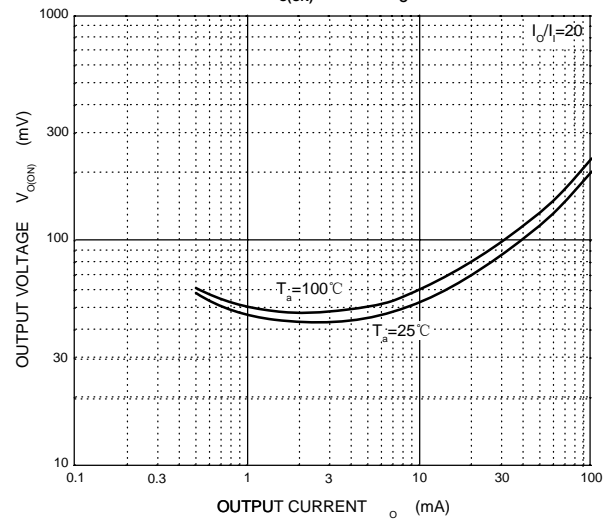
OFF Characteristics



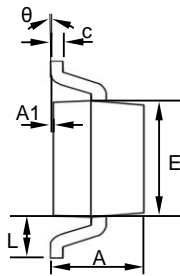
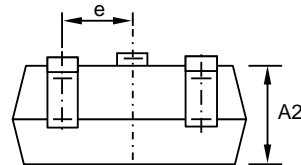
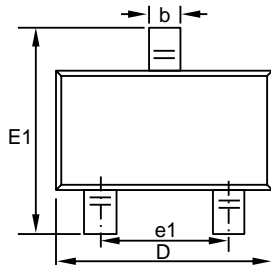
G_I — I_O



$V_{O(ON)}$ — I_O

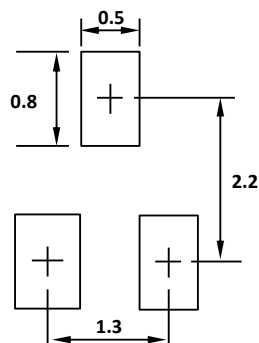


SOT-323 Package Information



SOT-323 (unit: mm)		
Dim.	Min.	Max.
A	0.80	1.10
A1	0.00	0.10
A2	0.80	1.10
b	0.20	0.40
c	0.08	0.15
D	2.00	2.20
E	1.15	1.35
E1	2.05	2.45
e	0.65 TYP.	
e1	1.20	1.40
L	0.525 REF.	
θ	0°	8°

SOT-323 Suggested Pad Layout



Notes:

This recommended layout is for reference purposes only.

If there is enough place in PCB. It can be mounted with copper along the dotted line in order to optimize thermal design.