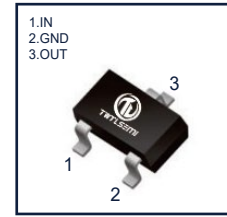


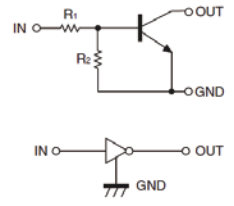


Features

- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors(see equivalent circuit)
- The bias resistors consist of thin-film resistors with complete isolation to allow negative 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



SOT23



Equivalent Circuit

Absolute Maximum Ratings($T_A=25^{\circ}\text{C}$)

Symbol	Parameter	Limits	Unit
V_{CC}	Supply Voltage	50	V
V_{IN}	Input Voltage	-5 ~ +12	V
I_O	Output Current	100	mA
P_D	Power Dissipation	200	mW
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55 ~ +150	$^{\circ}\text{C}$

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Parameter	Test conditions	Min	Typ	Max	Unit
$V_{I(off)}$	Input voltage	$V_{CC}=5V, I_O=100\mu A$	0.5			V
$V_{I(on)}$		$V_O=0.3V, I_O=5mA$			1.1	V
$V_{O(on)}$	Output voltage	$I_O/I_H=5mA/0.25mA$		0.1	0.3	V
I_I	Input current	$V_I=5V$			3.6	mA
$I_{O(off)}$	Output current	$V_{CC}=50V, V_I=0$			0.5	μA
G_I	DC current gain	$V_O=5V, I_O=10mA$	80			
R_1	Input resistance		1.54	2.2	2.86	k Ω
R_2/R_1	Resistance ratio		17	21	26	
f_T	Transition frequency	$V_O=10V, I_O=5mA, f=100MHz$		250		MHz

Ordering information

Product ID	Marking	Naming rule	Pack	Qty(PCS)
DTC123JCA	E42	DTC123JCA ↓ 产品名称 product name	SOT23	3000



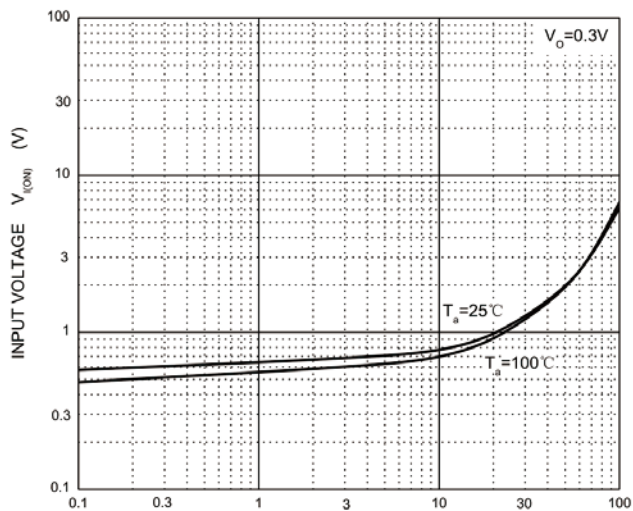
TWTLSEMI

TL-DTC123JCA

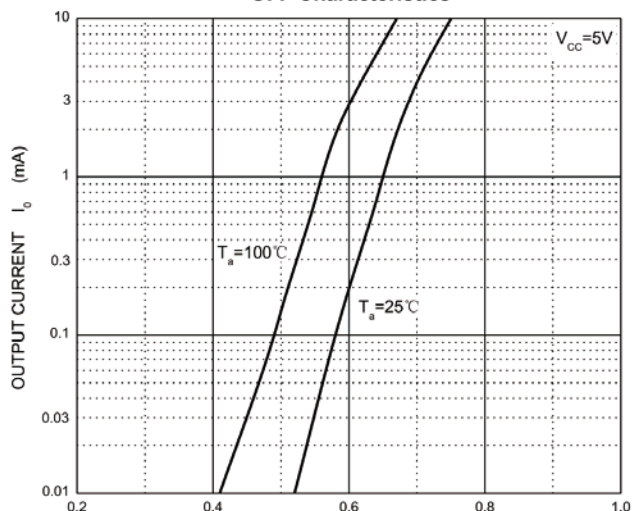
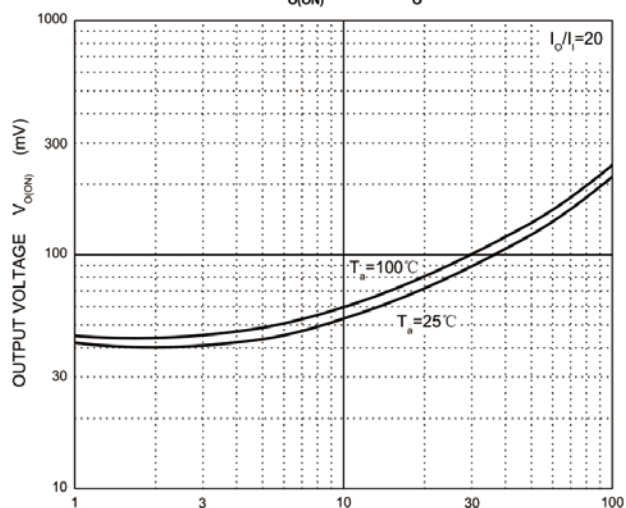
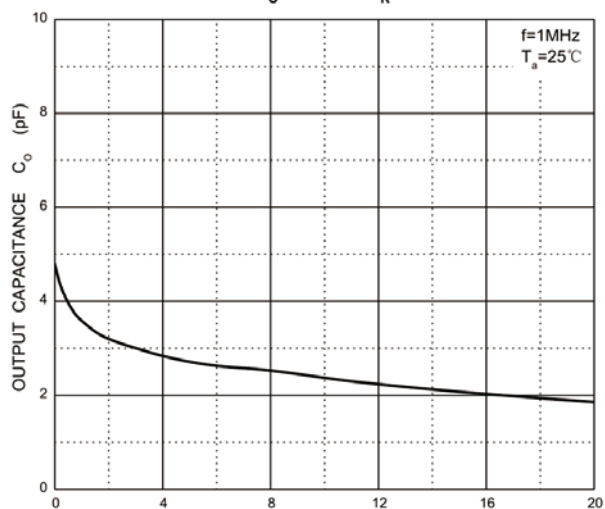
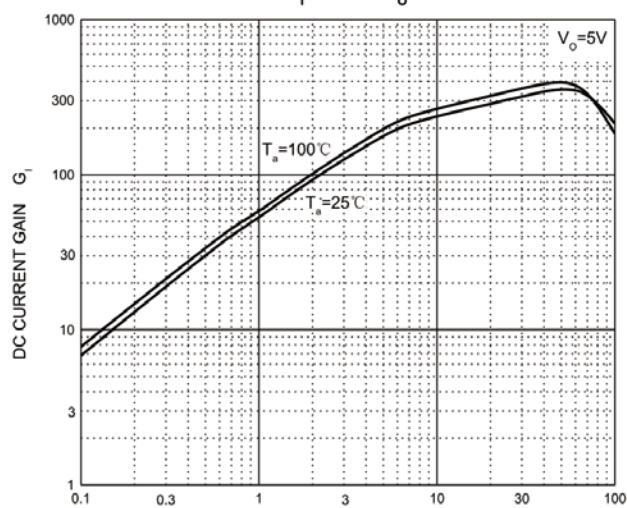
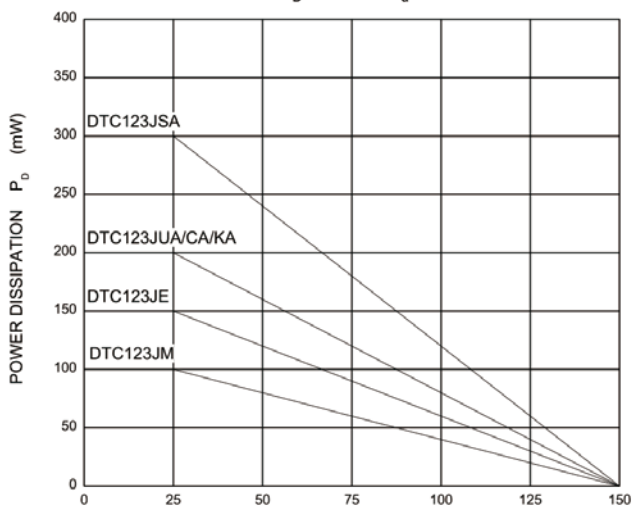
SOT-23 DIGITAL TRANSISTOR (NPN)

Typical Characteristics

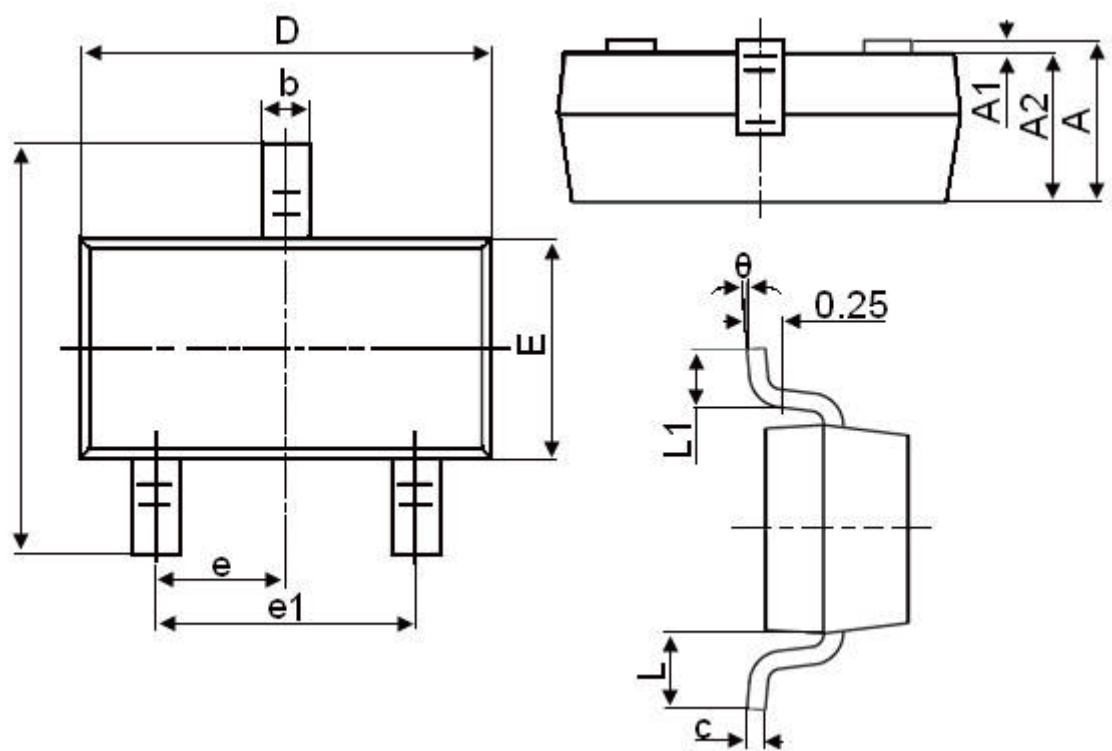
ON Characteristics

OUTPUT CURRENT I_O (mA) $V_{O(ON)}$ — I_O

OFF Characteristics

INPUT VOLTAGE $V_{I(OFF)}$ (V) G_I — I_O OUTPUT CURRENT I_O (mA) C_O — V_R REVERSE VOLTAGE V_R (V)OUTPUT CURRENT I_O (mA) P_D — T_a AMBIENT TEMPERATURE T_a ($^\circ C$)

SOT23 Package Outline Dimensions



Symbol	Dimensions in Millimeters	
	mm	
	Min	Max
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
θ	0°	8°