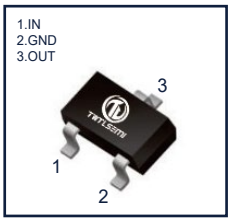
TL-DTC123YCA

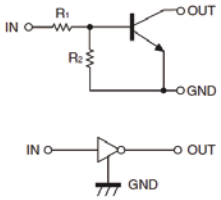
SOT-23 DIGITAL TRANSISTOR (NPN)

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℃)

Symbol	Parameter	Limits	Uniat
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	℃

Electrical Characteristics (T_A=25℃ unless otherwise specified)

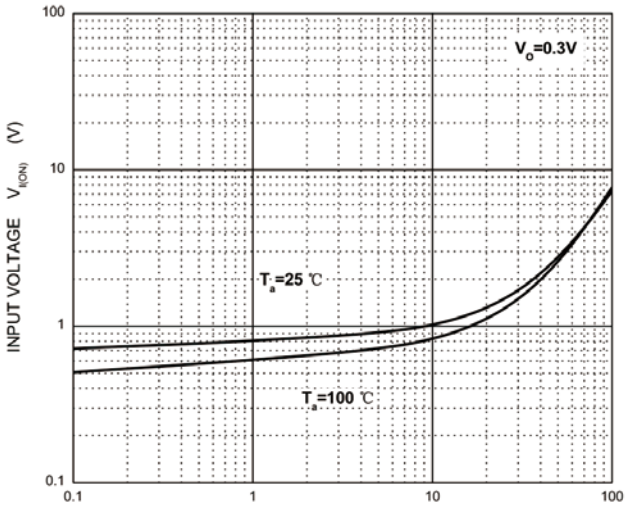
Symbol	Parameter	Test conditions	Min	Typ	Max	Unit
$V_{I(off)}$	Input voltage	V_{CC}=5V,I_O=100μA	0.3			V
$V_{I(on)}$		V_O=0.3V,I_O=20mA			3	V
$V_{O(on)}$	Output voltage	I_O/I_I=10mA/0.5mA		0.1	0.3	V
I_I	Input current	V_I=5V			3.8	mA
$I_{O(off)}$	Output current	V_{CC}=50V,V_I=0			0.5	μA
G_I	DC current gain	V_O=5V,I_O=10mA	33			
R_1	Input resistance		1.54	2.2	2.86	kΩ
R_2/R_1	Resistance ratio		3.6	4.5	5.5	
f_T	Transition frequency	V_O=10V,I_O=5mA,f=100MHz		250		MHz

Ordering information

Product ID	Marking	Naming rule	Pack	Qty(PCS)
DTC123YCA	62	DTC123YCA 产品名称 product name	SOT23	3000

Typical Characteristics

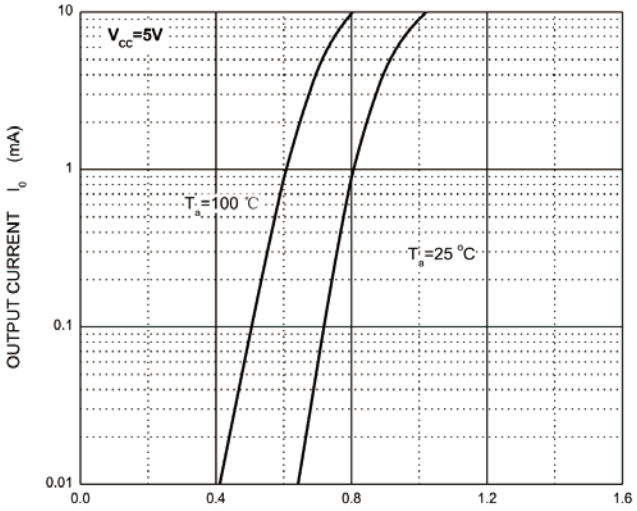
ON Characteristics



OUTPUT CURRENT Io (mA)

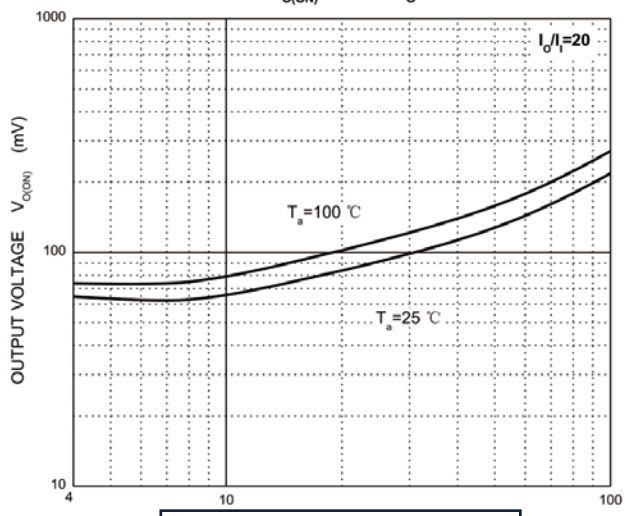
$V_{O(ON)}$ — I_O

OFF Characteristics



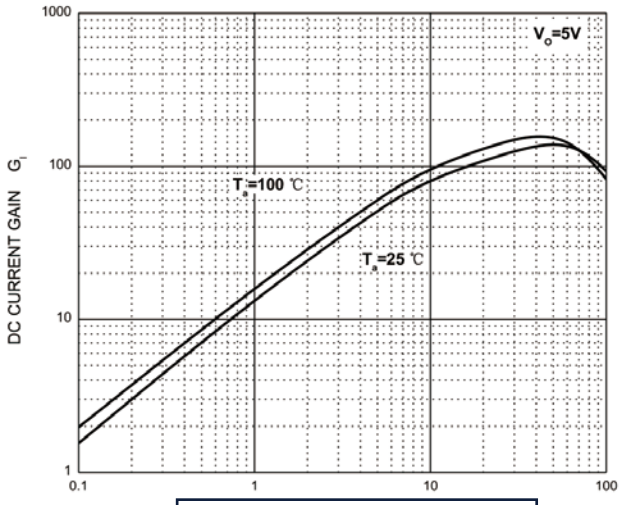
INPUT VOLTAGE $V_{I(OFF)}$ (V)

G_I — I_O



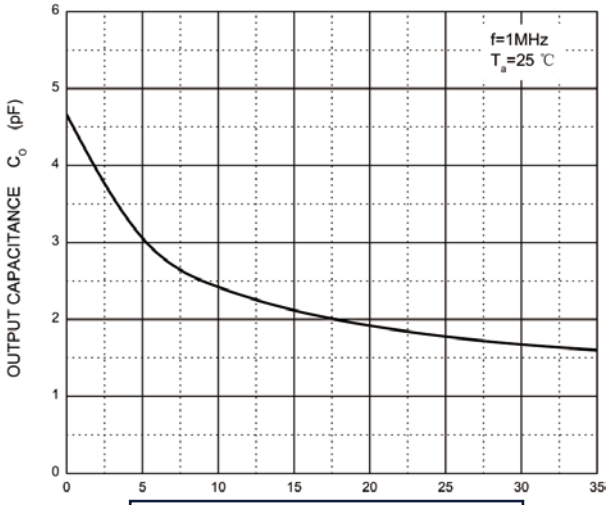
OUTPUT CURRENT Io (mA)

C_O — V_R

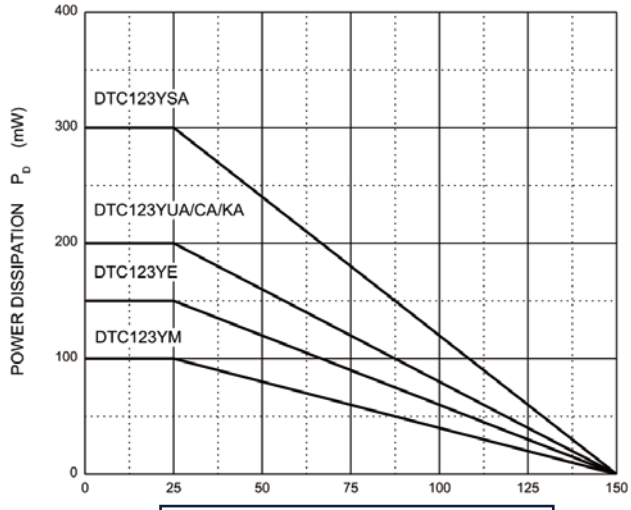


OUTPUT CURRENT Io (mA)

P_D — T_a

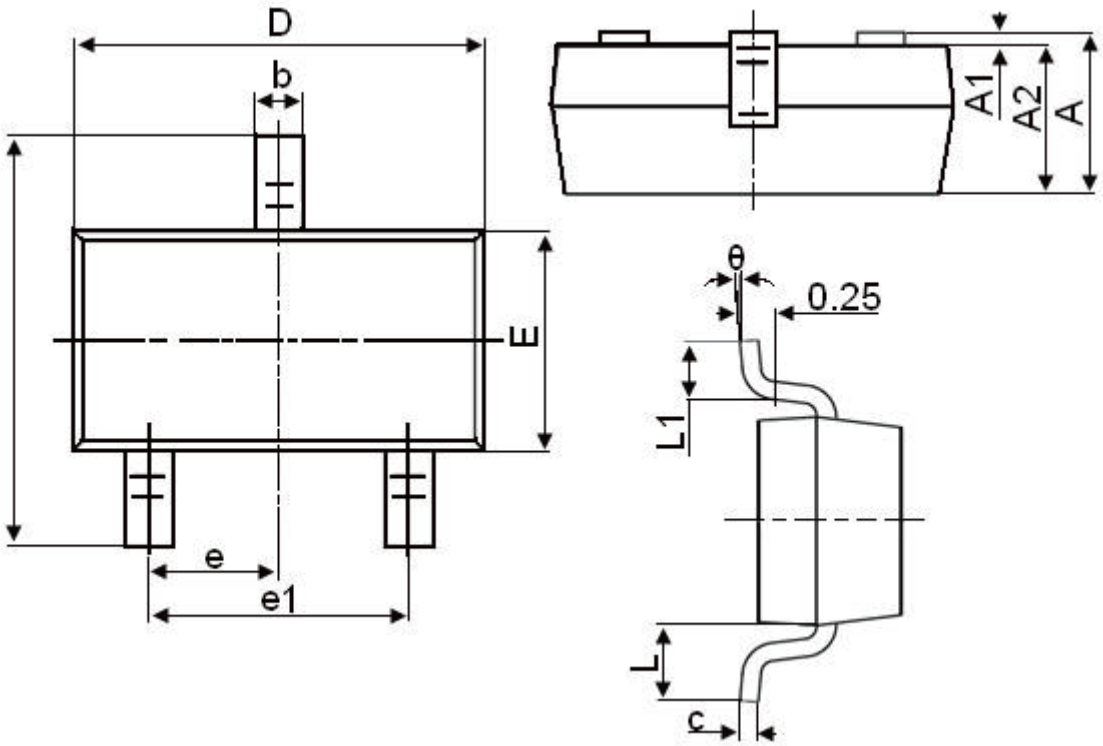


REVERSE VOLTAGE VR(V)



AMBIENTTEMPERATURE Ta(℃)

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°