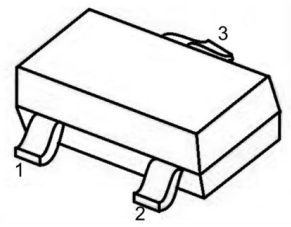
DTC144EE

Digital Transistor

DTC144EE Digital Transistor(NPN)

SOT-523

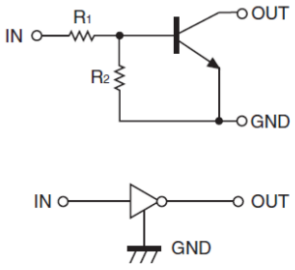


1.IN 2.GND 3.OUT

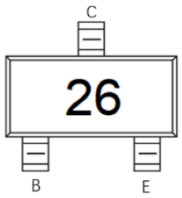
Feature

- 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:



ABSOLUTE MAXIMUM RATINGS (T_A=25℃ unless otherwise noted)

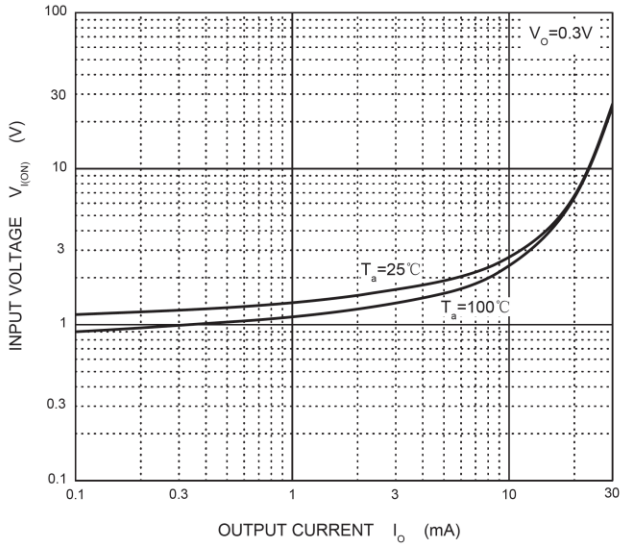
Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	50	V
Input Voltage	V_{IN}	-10~+40	V
Output Current	I_O	100	mA
Power Dissipation	P_D	150	mW
Junction Temperature	T_J	125	℃
Storage Temperature Range	T_{STG}	-45 ~ +125	℃

ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise noted)

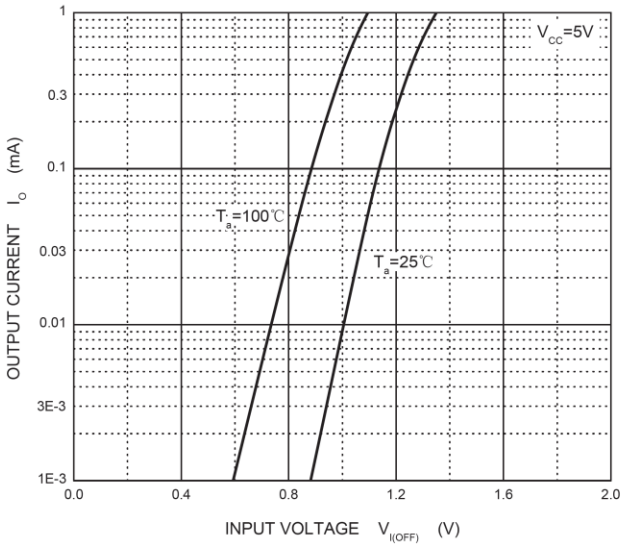
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Input voltage	$V_{I(off)}$	V_{CC}=5V , I_O=100μA	0.3			V
	$V_{I(on)}$	V_O=0.3V , I_O=2mA			2.5	V
Output voltage	$V_{O(on)}$	I_O=10mA ,I_I=0.5mA			0.3	V
Output current	$I_{O(off)}$	V_{CC}=50V , V_I=0V			0.5	μA
DC current gain	G_I	V_O=5V ,I_O =5mA	68			
Input resistance	R_1		32.9	47	61.1	kΩ
Resistance ratio	R_2/ R_1		0.8	1	1.2	
Transition frequency	f_T	V_O=10V,I_O=5mA,f=1MHz		250		MHz

Typical Characteristics

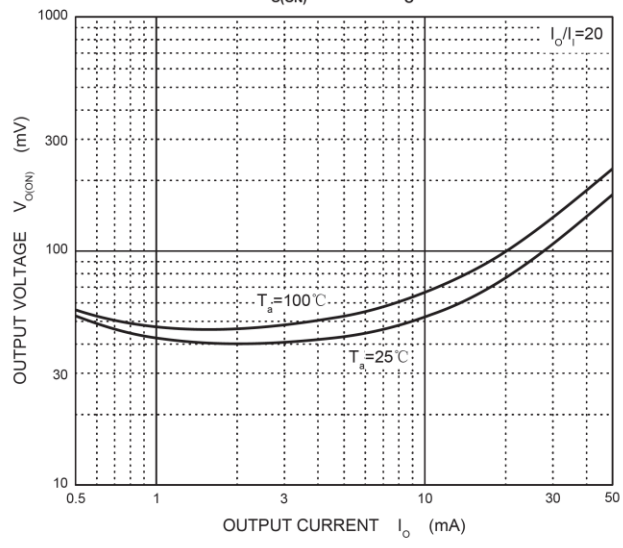
ON Characteristics



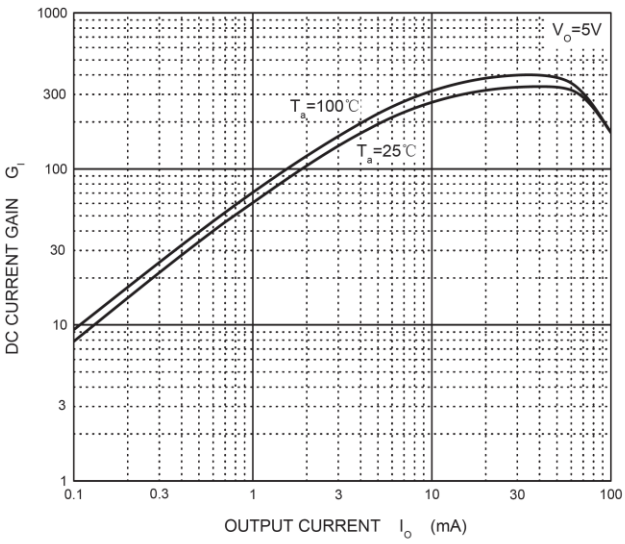
OFF Characteristics



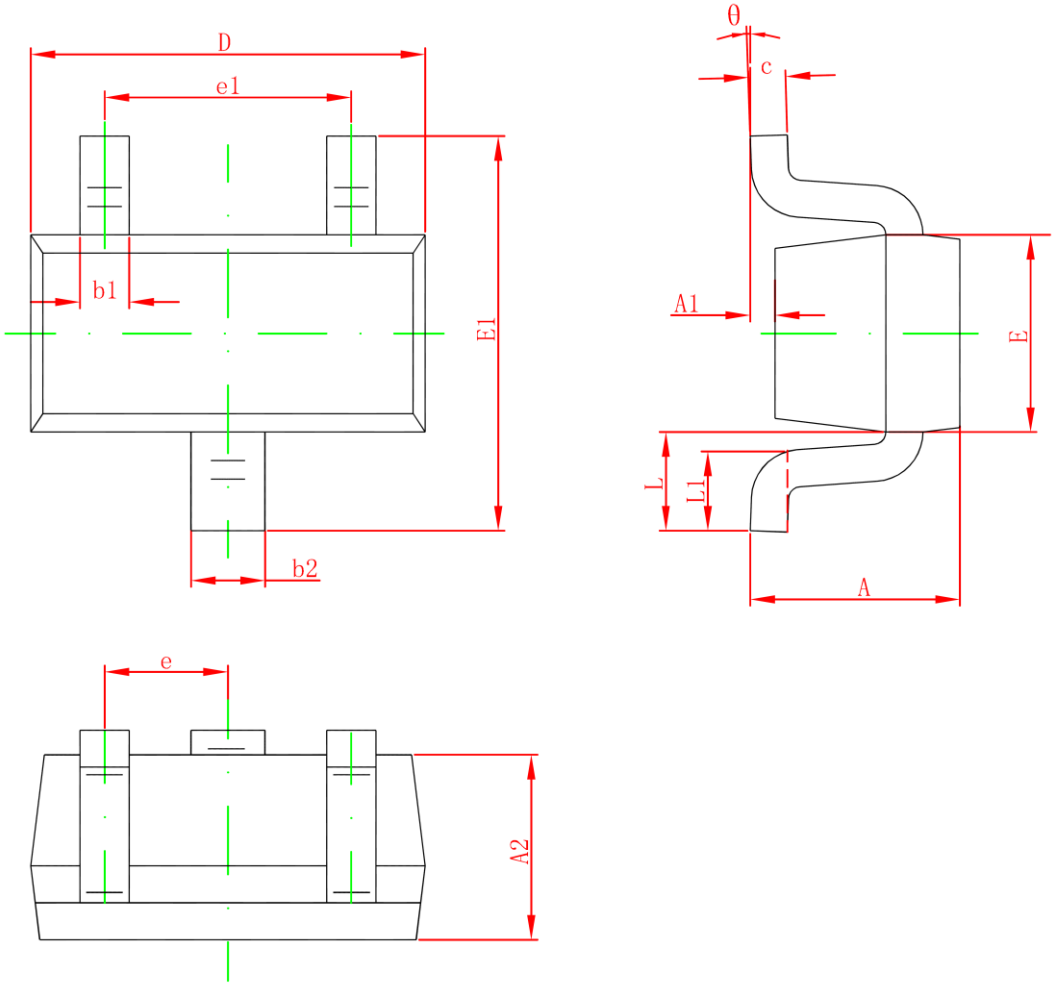
$V_{O(ON)}$ — I_O



G_I — I_O



SOT-523 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.350	0.010	0.014
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
E	0.700	0.900	0.028	0.035
E1	1.450	1.750	0.057	0.069
e1	0.900	1.100	0.035	0.043
e	0.500TYP		0.020TYP	
L	0.400REF		0.016REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°