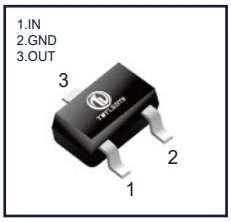
TL-DTC114YUA

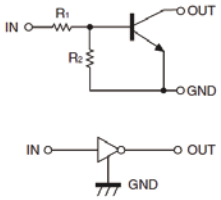
SOT-323 DIGITAL TRANSISTOR (NPN)

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



SOT-323



Equivalent Circuit

Absolute Maximum Ratings(T_A=25℃)

Symbol	Parameter	Limits	Uniat
V_{CC}	Supply Voltage	50	V
V_{IN}	Input Voltage	-6 ~ +40	V
I_O	Output Current	70	mA
I_{CM}	Peak Collector 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)

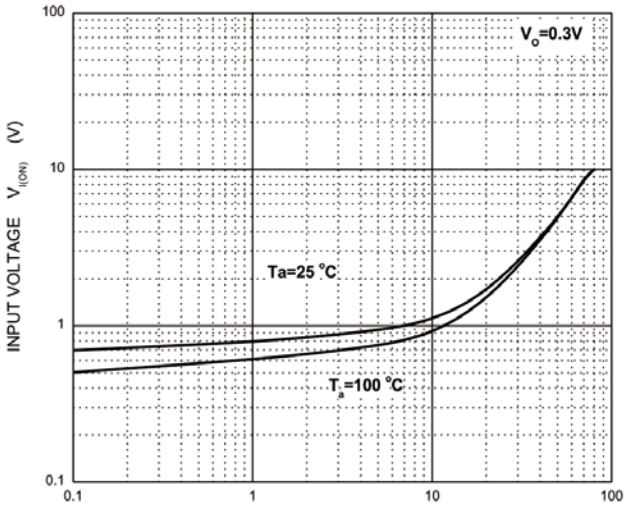
Symbol	Parameter	Test conditions	Min	Typ	Max	Unit
$V_{I(off)}$	Input voltage	V_{CC}=5V,I_O=100μA	0.3			V
$V_{I(on)}$		V_O=0.3V,I_O=1mA			1.4	V
$V_{O(on)}$	Output voltage	I_O/I_I=5mA/0.25mA			0.3	V
I_I	Input current	V_I=5V			0.88	mA
$I_{O(off)}$	Output current	V_{CC}=50V,V_I=0			0.5	μA
G_I	DC current gain	V_O=5V,I_O=5mA	68			
R_1	Input resistance		7	10	13	kΩ
R_2/R_1	Resistance ratio		3.7	4.7	5.7	
f_T	Transition frequency	V_O=10V,I_O=5mA,f=100MHz		250		MHz

Ordering information

Product ID	Marking	Naming rule	Pack	Qty(PCS)
DTC114YUA	64	DTC114YUA 产品名称 product name	SOT-323	3000

Typical Characteristics

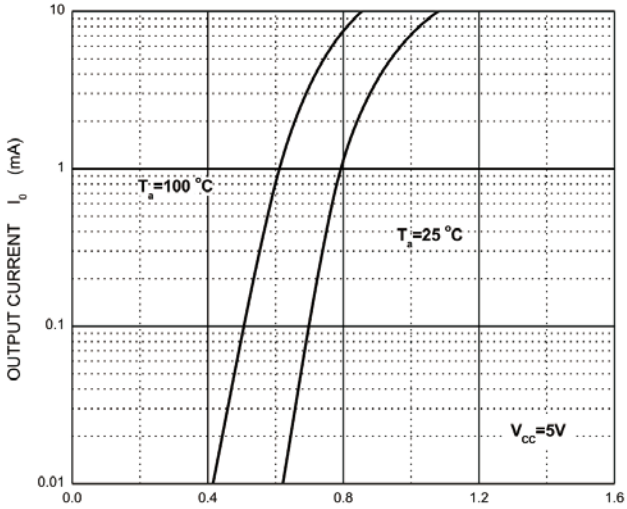
ON Characteristics



OUTPUT CURRENT Io (mA)

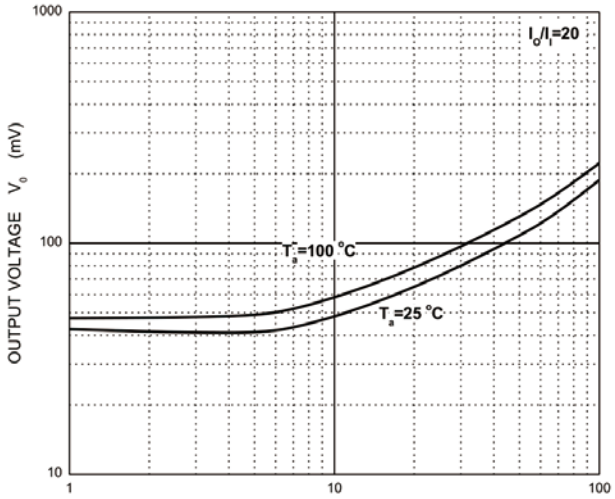
V_O — I_O

OFF Characteristics



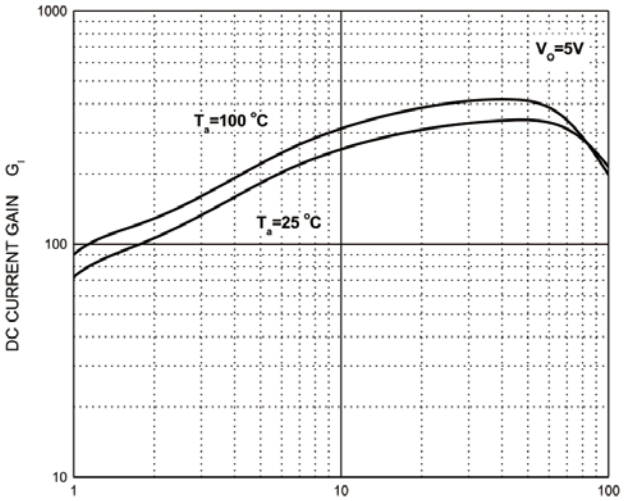
INPUT VOLTAGE $V_{I(OFF)}$ (V)

G_I — I_O



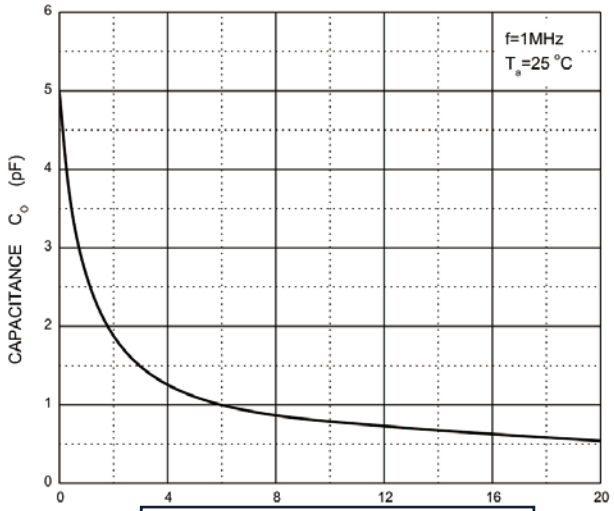
OUTPUT CURRENT Io (mA)

C_O — V_R

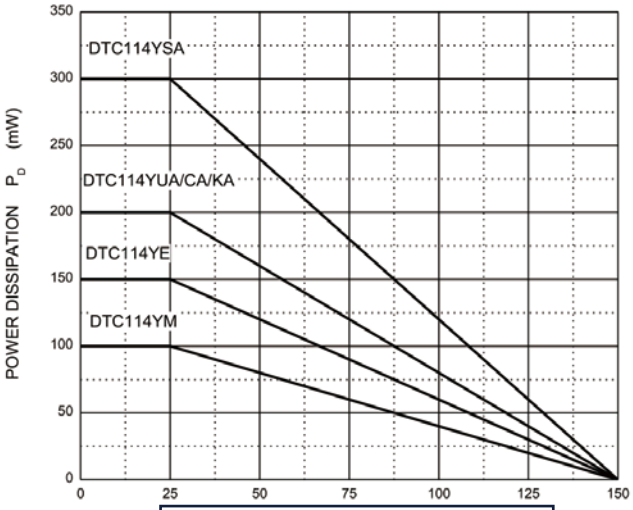


OUTPUT CURRENT Io (mA)

P_D — T_a

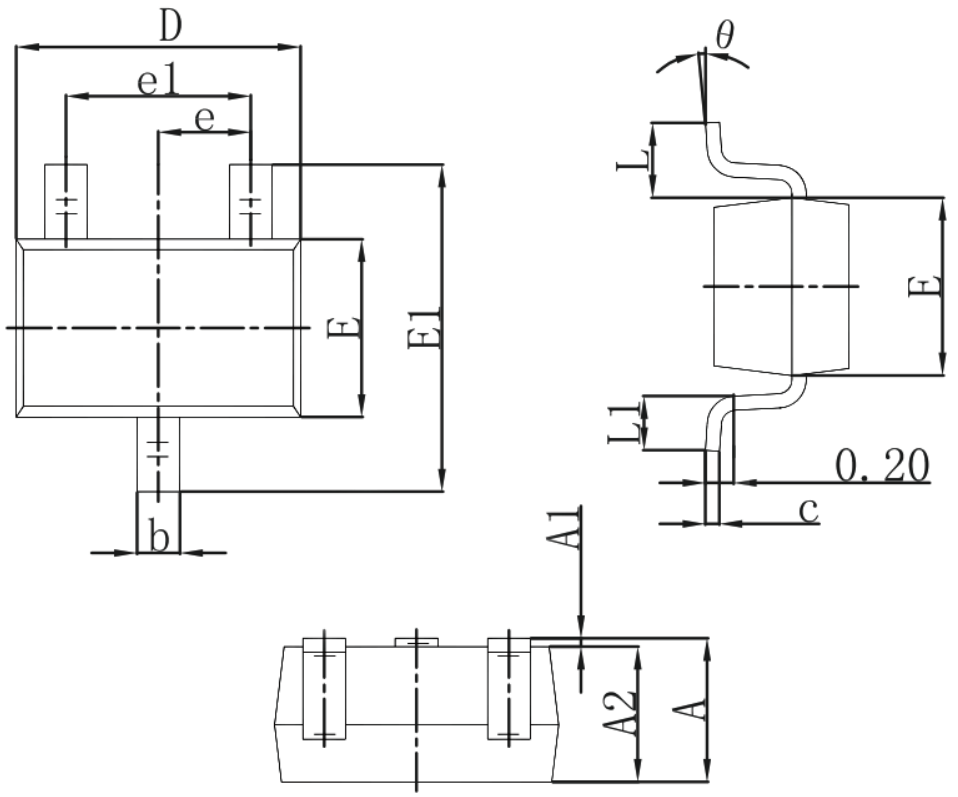


REVERSE VOLTAGE VR(V)



AMBIENTTEMPERATURE Ta(℃)

SOT-323 Package Outline Dimensions



Symbol	Dimensions in Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	1.350	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°