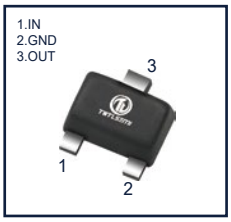
TL-DTC114EM

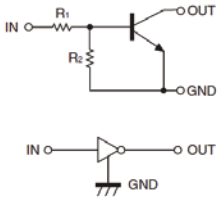
SOT-723 DIGITAL TRANSISTOR (NPN)

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-723



Equivalent Circuit

Absolute Maximum Ratings(T_A=25℃)

Symbol	Parameter	Limits	Uniat
V_{CC}	Supply Voltage	50	V
V_{IN}	Input Voltage	-10 ~ +40	V
I_O	Output Current	50	mA
I_{CM}	Peak Collector Current	100	mA
P_D	Power Dissipation	100	mW
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55 ~ +150	℃

Electrical Characteristics (T_A=25℃ unless otherwise specified)

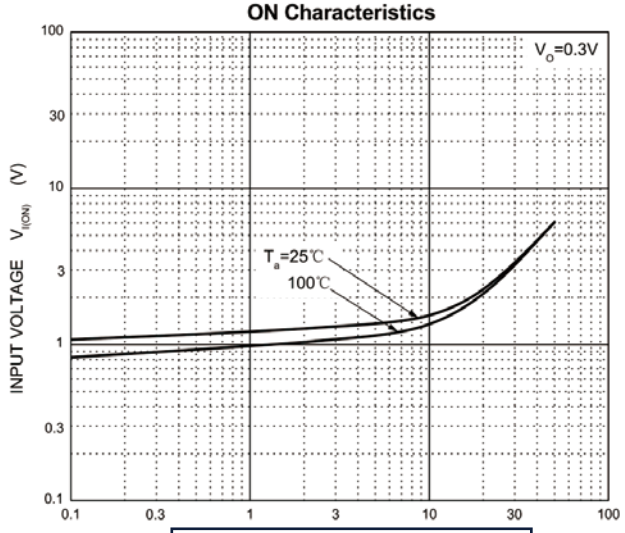
Symbol	Parameter	Test conditions	Min	Typ	Max	Unit
$V_{I(off)}$	Input voltage	V_{CC}=5V,I_O=100μA	0.5			V
$V_{I(on)}$		V_O=0.3V,I_O=10mA			3	V
$V_{O(on)}$	Output voltage	I_O/I_I=10mA/0.5mA			0.3	V
I_I	Input current	V_I=5V			0.88	mA
$I_{O(off)}$	Output current	V_{CC}=50V,V_I=0			0.5	μA
G_I	DC current gain	V_O=5V,I_O=5mA	33			
R_1	Input resistance		7	10	13	kΩ
R_2/R_1	Resistance ratio		0.8	1	1.2	
f_T	Transition frequency	V_O=10V,I_O=5mA,f=100MHz		250		MHz

Ordering information

Product ID	Marking	Naming rule	Pack	Qty(PCS)
DTC114EM	24	DTC114EM 产品名称 product name	SOT-723	8000

Typical Characteristics

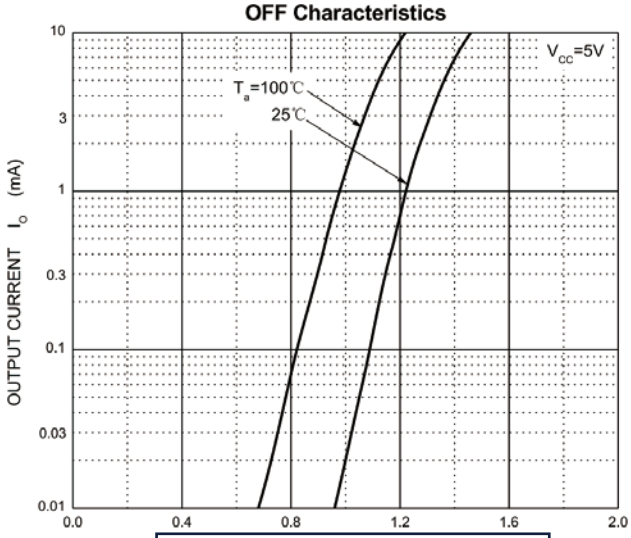
ON Characteristics



OUTPUT CURRENT Io (mA)

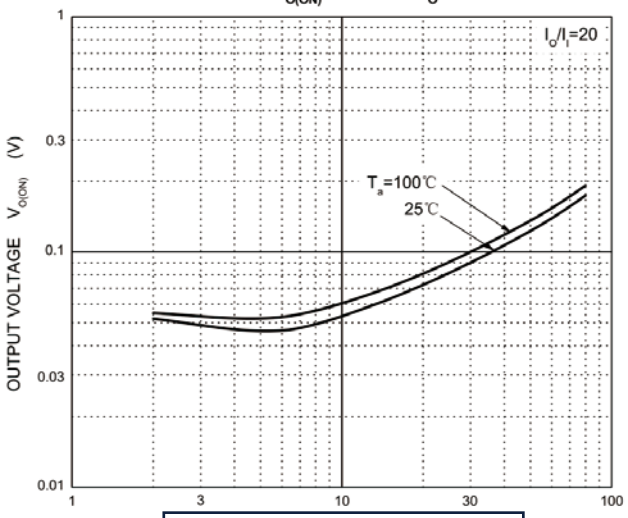
$V_{O(ON)}$ — I_O

OFF Characteristics

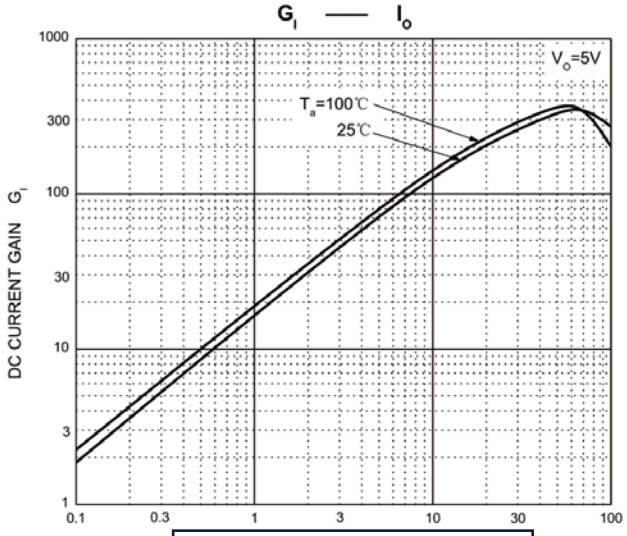


INPUT VOLTAGE $V_{I(OFF)}$ (V)

G_I — I_O

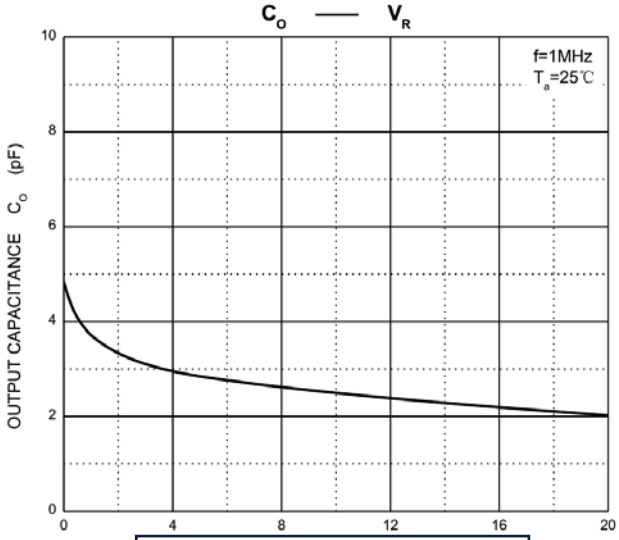


OUTPUT CURRENT Io (mA)



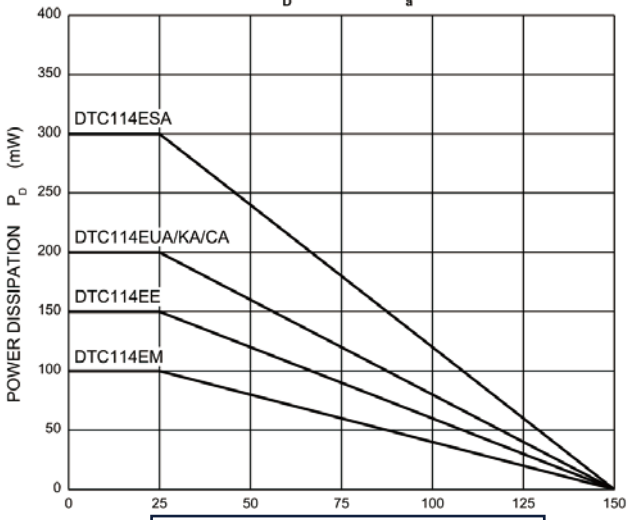
OUTPUT CURRENT Io (mA)

C_O — V_R



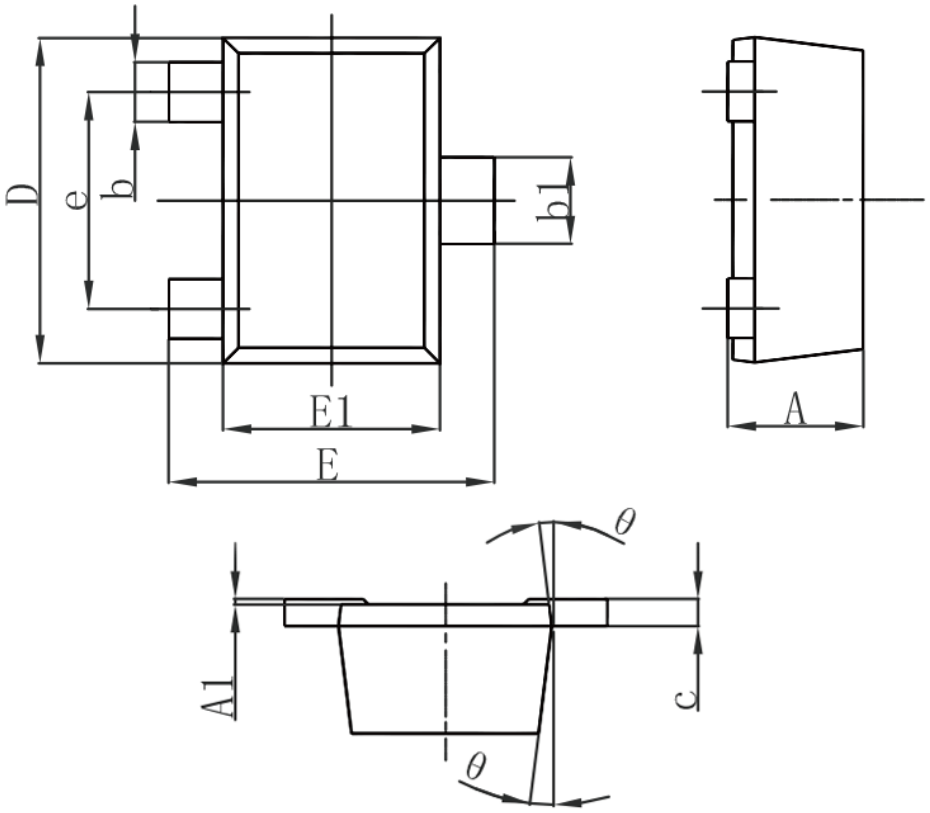
REVERSE VOLTAGE VR(V)

P_D — T_a



AMBIENTTEMPERATURE Ta(℃)

SOT-723 Package Outline Dimensions



Symbol	Dimensions in Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A		0.500		0.020
A1	0.000	0.050	0.000	0.002
b	0.170	0.270	0.007	0.011
b1	0.270	0.370	0.011	0.015
c		0.150		0.006
D	1.150	1.250	0.045	0.045
E	1.150	1.250	0.045	0.049
E1	0.750	0.850	0.030	0.033
e	0.800TYP.		0.031TYP.	
θ	7° REF.		7° REF.	