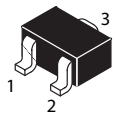
WEITRON

DTC114EUA

NPN DIGITAL TRANSISTOR

Pb Lead(Pb)-Free



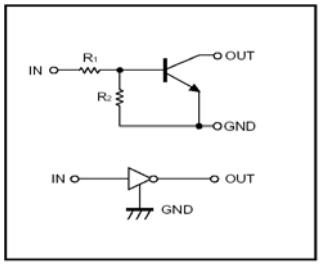
SOT-323(SC-70)

(1)GND (2)OUT (3)IN

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.

●Equivalent circuit



Absolute maximum ratings(Ta=25℃)

Parameter	Symbol	Value	Unit
Supply voltage	V_{CC}	50	V
Input voltage	V_{IN}	-10 ~ 40	V
Output current	I_O	50	mA
	$I_{C(MAX)}$	100	
Power dissipation	Pd	200	mW
Junction temperature	Tj	150	℃
Storage temperature	Tstg	-55-150	℃

Electrical characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ	Max.	Unit	Conditions
Input voltage	$V_{I(off)}$			0.5	V	V_{CC}=5V ,I_O=100 μ A
	$V_{I(on)}$	3				V_O=0.3V ,I_O=10 mA
Output voltage	$V_{O(on)}$		0.1	0.3	V	I_O/I_I=10mA/0.5mA
Input current	I_I			0.88	mA	V_I=5V
Output current	$I_{O(off)}$			0.5	μ A	V_{CC}=50V ,V_I=0
DC current gain	G_I	30				V_O=5V ,I_O=5mA
Input resistance	R_1	7	10	13	K Ω	
Resistance ratio	R_2/R_1	0.8	1	1.2		
Transition frequency	f_T		250		MHz	V_{CE}=10V ,I_E=-5mA,f=100MHz

Electrical characteristic curves

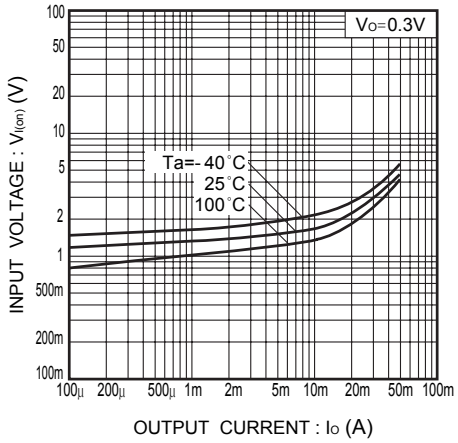


Fig.1 Input voltage vs. output current (ON characteristics)

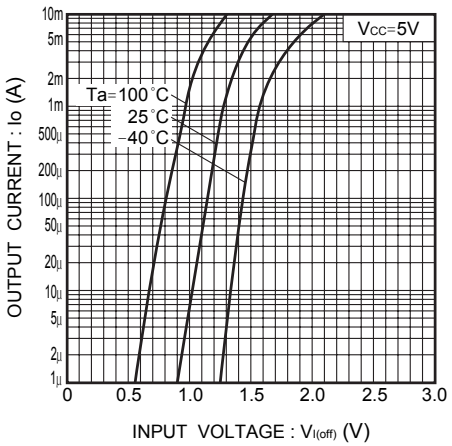


Fig.2 Output current vs. input voltage (OFF characteristics)

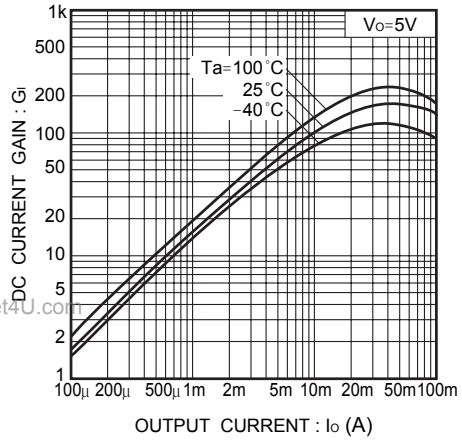


Fig.3 DC current gain vs. output current

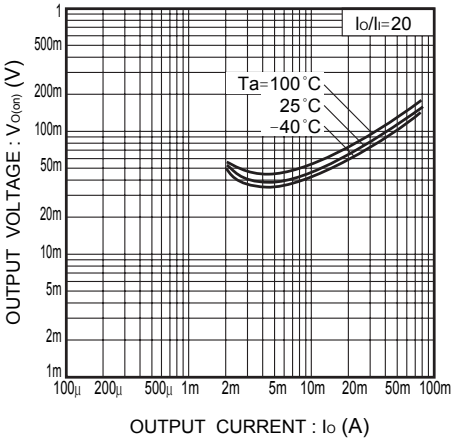
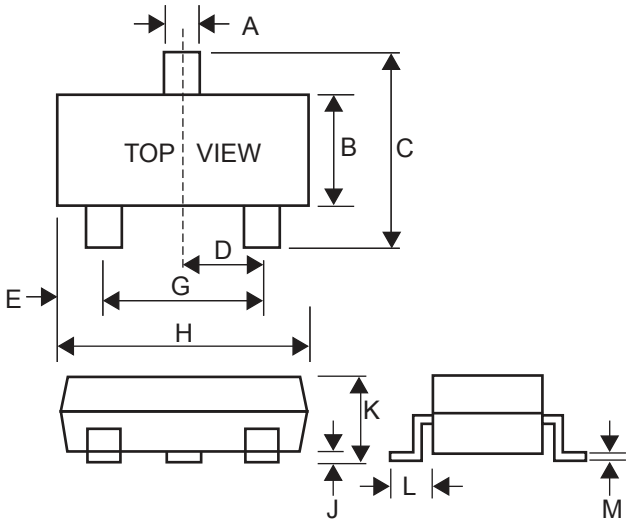


Fig.4 Output voltage vs. output current

WEITRON

SOT-323 Outline Demensions

Unit:mm



SOT-323		
Dim	**Min**	**Max**
A	0.30	0.40
B	1.15	1.35
C	2.00	2.40
D	-	0.65
E	0.30	0.40
G	1.20	1.40
H	1.80	2.20
J	0.00	0.10
K	0.80	1.00
L	0.42	0.53
M	0.10	0.25