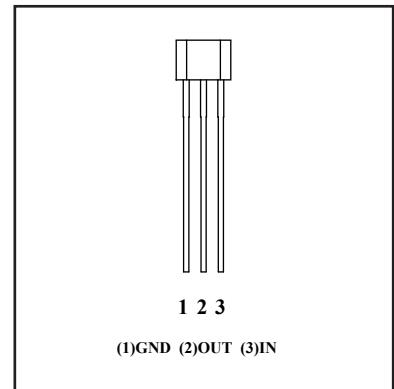


NPN DIGITAL TRANSISTOR

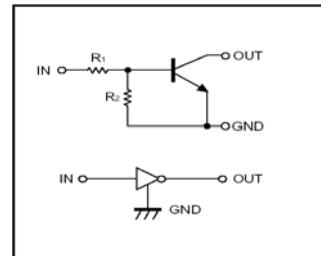
 **Lead(Pb)-Free**

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°C)

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	P _d	300		mW
Junction temperature	T _j	150		°C
Storage temperature	T _{stg}	-55-150		°C

Electrical characteristics (Ta=25°C)

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 _f =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 _I	7	10	13	K Ω	
Resistance ratio	R ₂ /R _I	0.8	1	1.2		
Transition frequency	f _T		250		MHz	V _{CE} =10V ,I _E =-5mA,f=100MHz

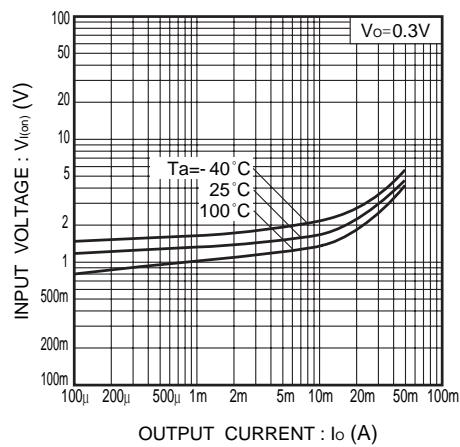
Electrical characteristic curves

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

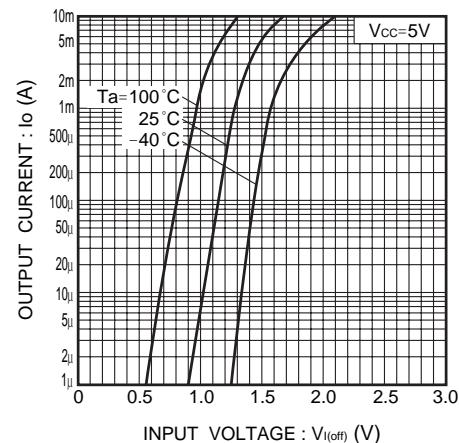


Fig.2 Output current vs. input voltage
(OFF characteristics)

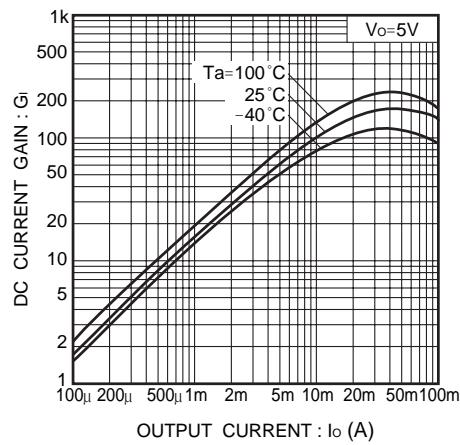


Fig.3 DC current gain vs. output current

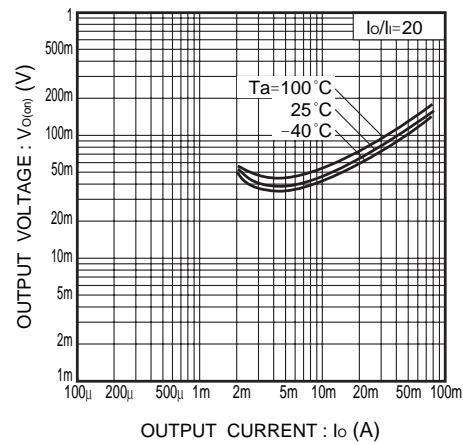
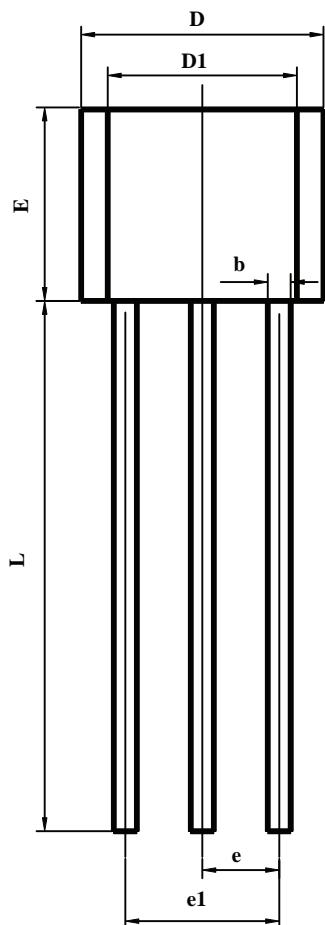


Fig.4 Output voltage vs. output current

TO-92S PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters	
	Min	Max
A	1.240	1.620
A1	0.660	0.860
b	0.380	0.550
c	0.360	0.510
D	3.850	4.150
D1	2.970	3.270
E	3.010	3.310
e	1.270TYP	
e1	2.440	2.640
L	15.10	15.50
θ	45°TYP	

