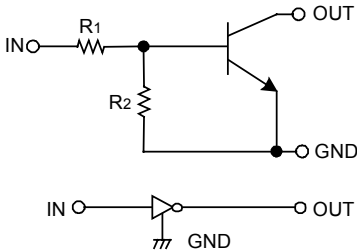


NPN DIGITAL TRANSISTOR (BUILT-IN RESISTORS)

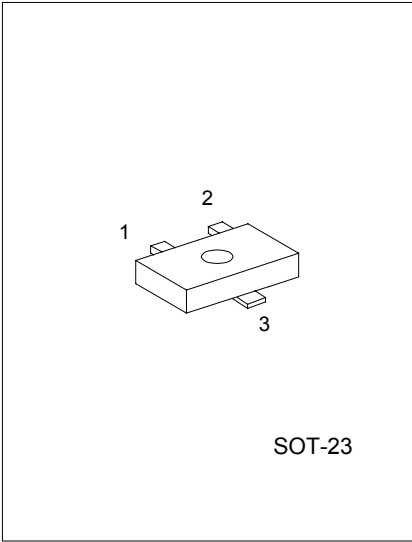
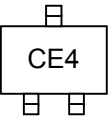
FEATURES

- *Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors (see the equivalent circuit).
- *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.

EQUIVALENT CIRCUIT



MARKING



1: GND 2: IN 3: OUT

ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATING	UNIT
Supply Voltage	V _{CC}	50	V
Input Voltage	V _{IN}	-10~+12	V
Output Current	I _o	100	mA
	I _{c(Max)}	100	
Power Dissipation	P _d	200	mW
Junction Temperature	T _j	150	°C
Storage Temperature	T _{stg}	-55~+150	°C

ELECTRICAL CHARACTERISTICS(Ta=25°C,unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	V _{i(off)}	V _{CC} =5V , I _o =100μA			0.5	V
	V _{i(on)}	V _o =0.3V , I _o =2mA	3			V
Output Voltage	V _{o(on)}	I _o /I _i =10mA/0.5mA			0.3	V
Input Current	I _i	V _i =5V			0.18	mA
Output Current	I _{o(off)}	V _{CC} =50V, V _i =0V			0.5	μ A
DC Current Gain	G _I	V _o =5V, I _o =5mA	68			

UTCDC144E

NPN DIGITAL TRANSISTOR

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Resistance	R ₁		32.9	47	61.1	k Ω
Resistance Ratio	R ₂ /R ₁		0.8	1	1.2	
Transition Frequency	f _T	V _{CE} =10V, I _E = -5mA f=100MHz *		250		MHz

*Transition frequency of the device.

TYPICAL CHARACTERISTIC CURVES

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

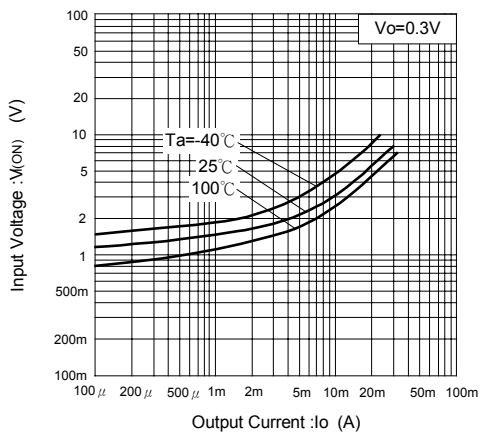


Fig.2 Output current vs Input voltage
(OFF characteristics)

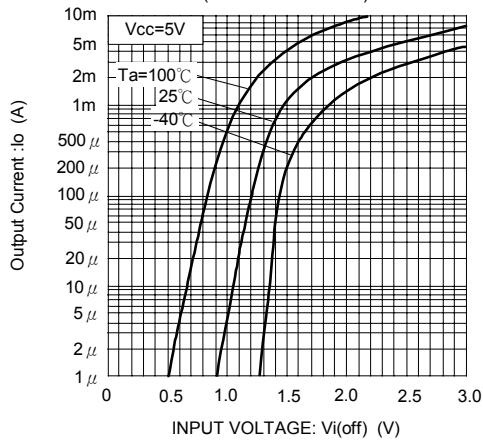


Fig.3 DC current gain vs. output current

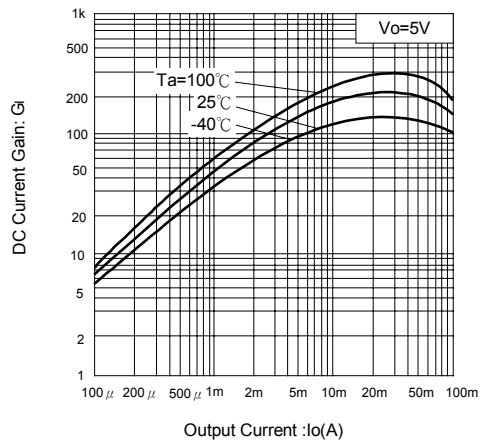


Fig.4 Output voltage vs output current

