Digital Transistors
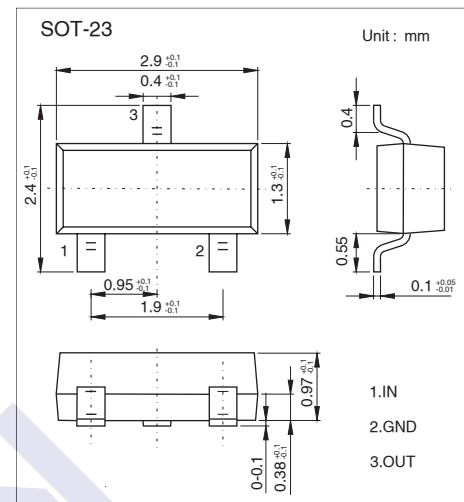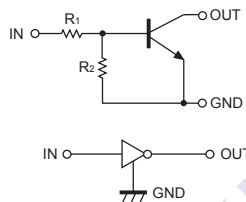
KTC106

■ Features

● Built-In Biasing Resistors,R1 = 4.7kΩ, R2 = 10kΩ

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

● Only the on/off conditions need to be set for operation, making the circuit design easy.

● Complementary PNP Types: KTA206 series

● Marking:43

SOT-23   Unit : mm

1.IN
2.GND
3.OUT

■ Absolute Maximum Ratings (Ta = 25℃)

Parameter	Symbol	Rating	Unit
Supply voltage	V_{CC}	50	V
Input voltage	V_{IN}	-7 to 20	
Output current	I_O	100	mA
Collector current (Note 1)	$I_{C(Max.)}$	100	
Power dissipation (Note 2)	P_D	200	mW
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-55 to 150	

■ Electrical Characteristics (Ta = 25℃)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input voltage	$V_{I(off)}$	V_{CC}=5V, I_O=100μA			0.3	V
	$V_{I(on)}$	V_O=0.3V, I_O=20mA	2.5			
Output voltage	$V_{O(on)}$	I_O=10mA, I_I=0.5mA		100	300	mV
Input current	I_I	V_I=5V			1.8	mA
Output current	$I_{O(off)}$	V_{CC}=50V, V_I=0V			500	nA
DC current gain	G_I	V_O=5V, I_O=10mA	30			
Input resistance	R_1		3.29	4.7	6.11	kΩ
Resistance ratio	R_2/R_1		1.7	2.1	2.6	
Transition frequency (Note 1)	f_T	V_{CE}=10V, I_E= −5mA, f=100MHz		250		MHz

Note 1: Characteristics of built-in transistor

Note 2: Each terminal mounted on a reference land.

Digital Transistors

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■ Typical Characterisitics

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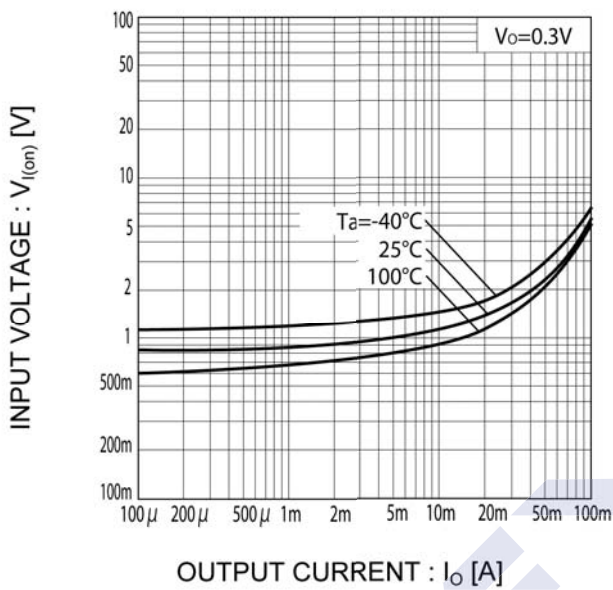

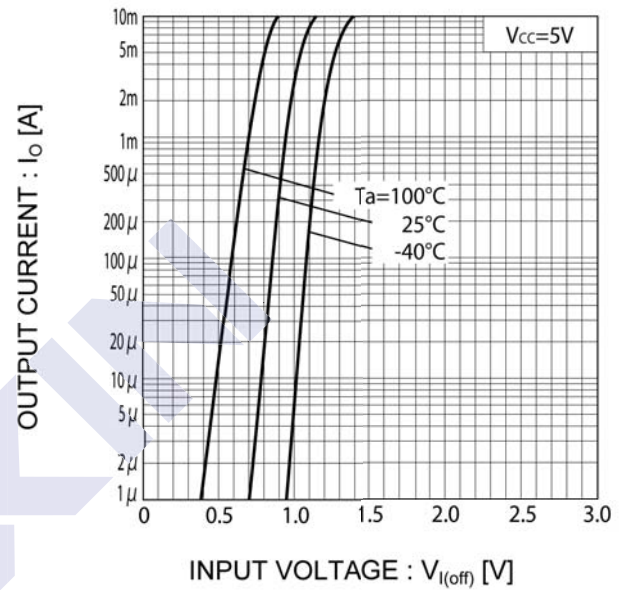### Fig.2 Output current vs. input voltage (OFF characteristics)
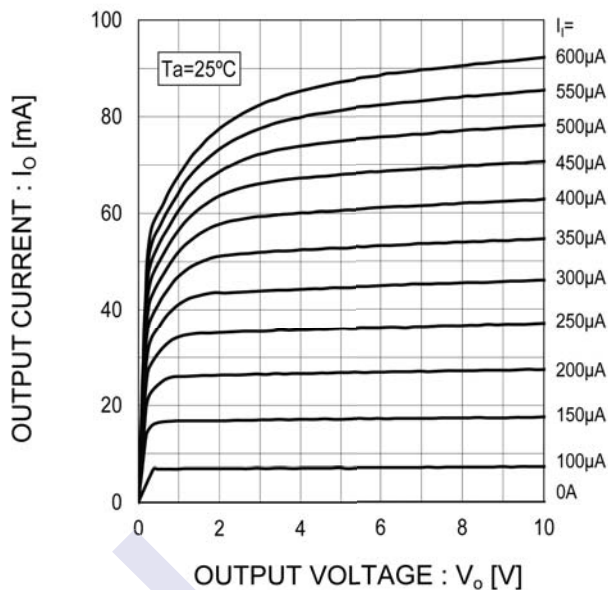

Fig.3 Output current vs. output voltage

Fig.4 DC current gain vs. output current