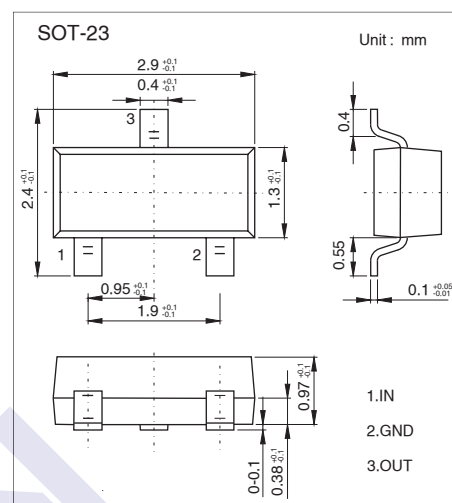
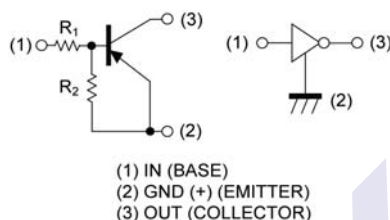


## Digital Transistors

## KTA205

## ■ Features

- Built-In Biasing Resistors,  $R_1 = 2.2k\Omega$ ,  $R_2 = 47k\Omega$
- 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: KTC105
- Marking: E32

■ Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Rating	Unit
Supply voltage	$V_{CC}$	-50	V
Input voltage	$V_{IN}$	-12 to 5	
Output current	$I_O$	-100	mA
Collector current (Note 1)	$I_{C(\text{Max.})}$	-100	
Power dissipation (Note 2)	$P_D$	200	mW
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to 150	

■ Electrical Characteristics ( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input voltage	$V_{I(\text{off})}$	$V_{CC} = -5V$ , $I_O = -100\mu\text{A}$			-0.5	V
	$V_{I(\text{on})}$	$V_O = -0.3V$ , $I_O = -2\text{mA}$	-1.1			
Output voltage	$V_{O(\text{on})}$	$I_O = -5\text{mA}$ , $I_I = -0.25\text{mA}$		-100	-300	mV
Input current	$I_I$	$V_I = -5V$			-3.6	mA
Output current	$I_{O(\text{off})}$	$V_{CC} = -50V$ , $V_I = 0V$			-500	nA
DC current gain	$G_I$	$V_O = -5V$ , $I_O = -10\text{mA}$	80			
Input resistance	$R_1$		1.54	2.2	2.86	$k\Omega$
Resistance ratio	$R_2/R_1$		17	21	26	
Transition frequency (Note 1)	$f_T$	$V_{CE} = -10V$ , $I_E = 5\text{mA}$ , $f = 100\text{MHz}$		250		MHz

Note 1: Characteristics of built-in transistor

Note 2: Each terminal mounted on a reference land.

### Digital Transistors

### KTA205

■ Typical Characteristics

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

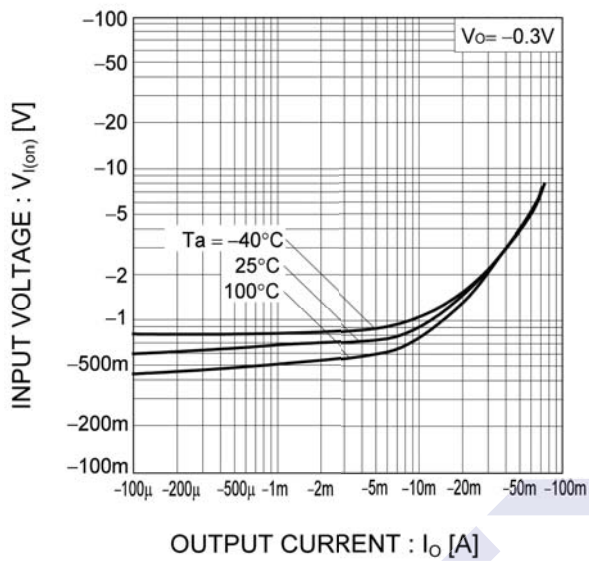


Fig.2 Output current vs. input voltage (OFF characteristics)

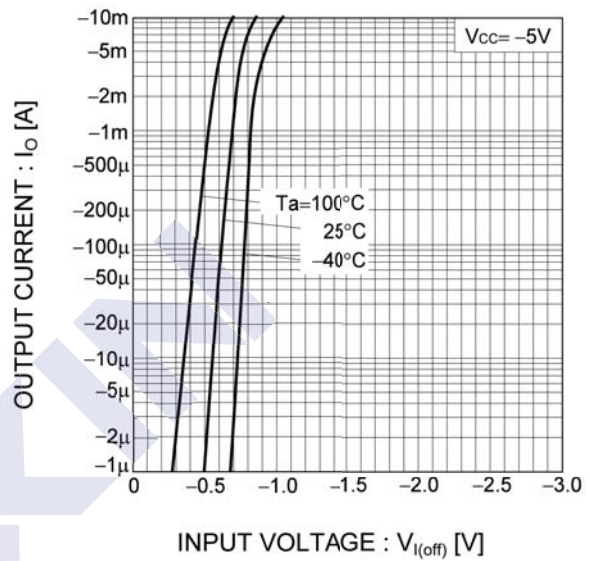


Fig.3 Output current vs. output voltage

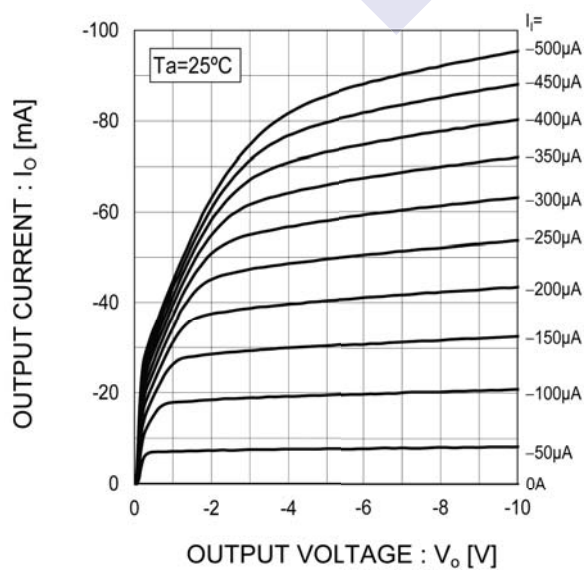


Fig.4 DC current gain vs. output current

