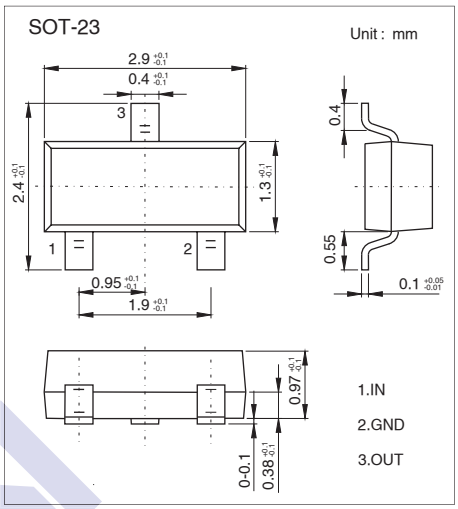
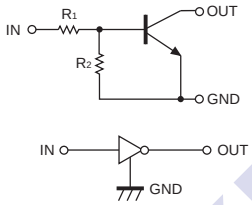
Digital Transistors

KTC102



■ Features

- Built-In Biasing Resistors,R1 = 4.7kΩ, R2 = 47kΩ
- 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: DTA143Z
- Marking:E23



■ Absolute Maximum Ratings (T_a = 25℃)

Parameter	Symbol	Rating	Unit
Supply voltage	V_{CC}	50	V
Input voltage	V_{IN}	-5 to 30	
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	Tstg	-55 to 150	

■ Electrical Characteristics (T_a = 25℃)

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=5mA	1.3			
Output voltage	$V_{O(on)}$	I_O=5mA, I_I=0.25mA		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	80			
Input resistance	R_1		3.29	4.7	6.11	kΩ
Resistance ratio	R_2/R_1		8	10	12	
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.

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■ Typical Characterisitics

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

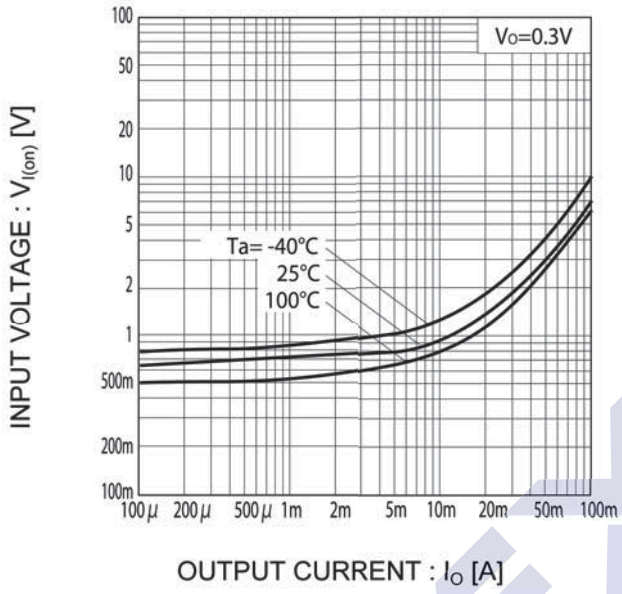

Fig.2 Output current vs. input voltage (OFF characteristics)

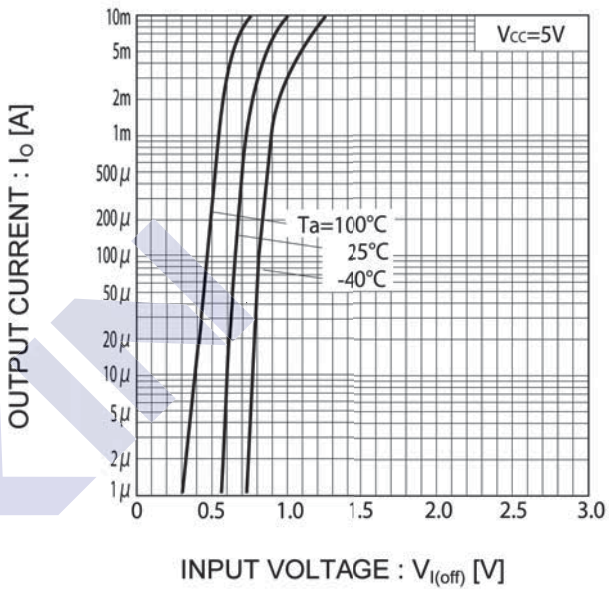

Fig.3 Output current vs. output voltage

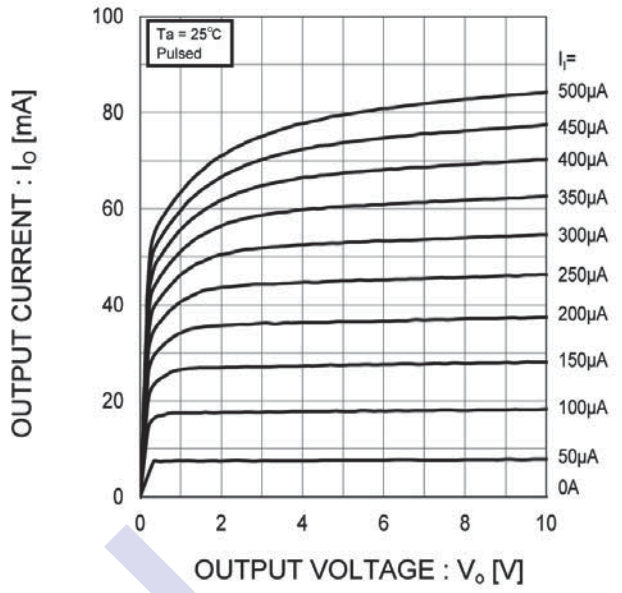

Fig.4 DC current gain vs. output current