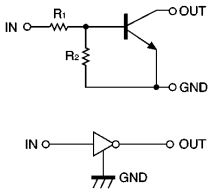
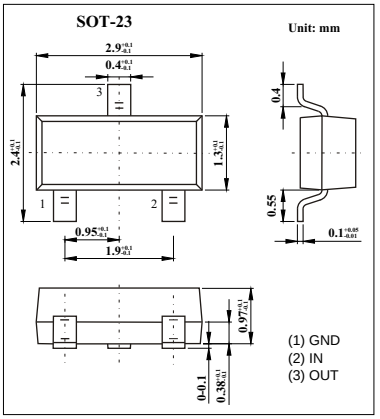
NPN Digital transistors

KTC143ZKA

■ Features

- NPN digital transistor (Built-in resistor types)
- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors
- Only the on/off conditions need to be set for operation, making device design easy.





■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Supply voltage	V_{CC}	50	V
Input voltage	V_{IN}	- 5~+30	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

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Input voltage	$V_{I(off)}$	V_{CC}=5V, I_O=100 μA			0.5	V
	$V_{I(on)}$	V_O=0.3V, I_O=5mA	1.3			V
Output voltage	$V_{O(on)}$	I_O/I_I=5mA/0.25mA		0.1	0.3	V
Input current	I_I	V_I=5V			1.8	mA
Output current	$I_{O(off)}$	V_{CC}=50V, V_I=0V			0.5	μA
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	kΩ
Transition frequency	f_T	V_{CE}=10V, I_E=-5mA, f=100MHz		250		MHz

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■ Typical Characteristics

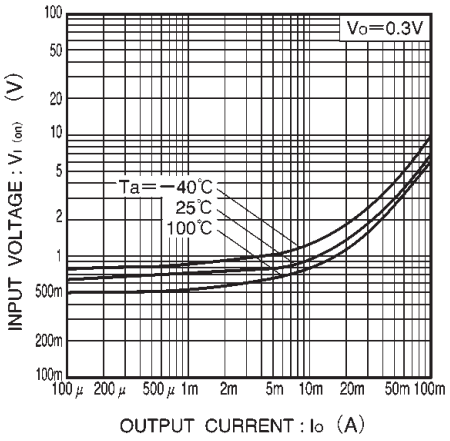

Fig.1 Input voltage vs. output current (ON characteristics)

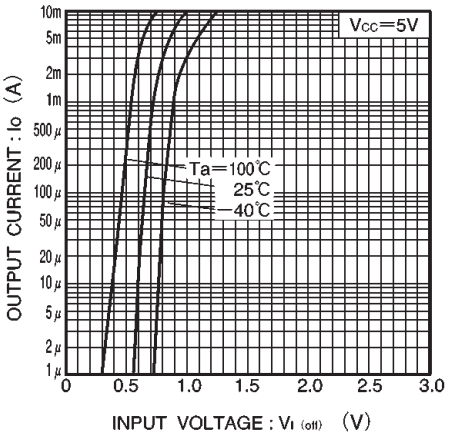

Fig.2 Output current vs. input voltage (OFF characteristics)

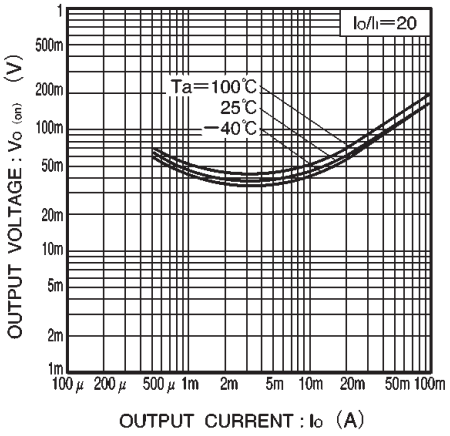

Fig.4 Output voltage vs. output current

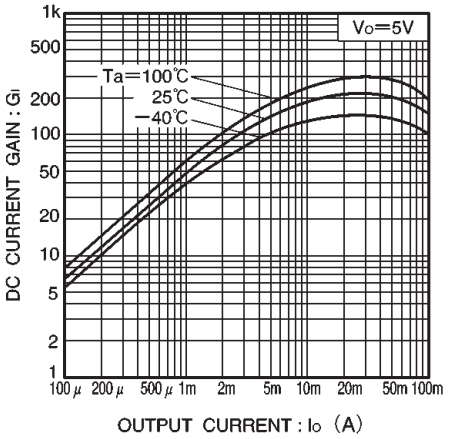

Fig.3 DC current gain vs. output current