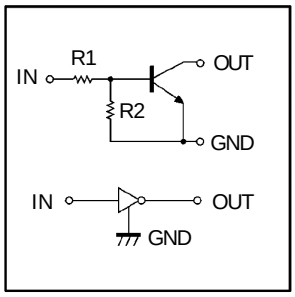
Digital transistors (built-in resistors)

DTC115EKA

- **Features**

1)Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors.
2) The bias resistors consist of thinfilm resistors with complete isolation to allow positive biasing of the input,and parasitic effects are almost completely eliminated.
3) Only the on/off conditions need to be set for operation, making device design easy.
4) Higher mounting densities can be achieved.



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● Absolute maximum ratings(T_a=25 °C)

Parameter	symbol	Limits	unit
Supply voltage	V_{cc}	50	V
Input voltage	V_{IN}	–40 ~ +10	V
Output current	I_O	20	mA
	$I_{C(Max.)}$	100	
Power dissipation	P_d	200	mW
Junction temperature	T_j	150	℃
Storage temperature	T_{stg}	–55~+150	℃

● Elecrical characteristics(T_a=25°C)

Parameter	symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	$V_{I(off)}$	—	—	0.5	V	V_{CC}=5V, I_O=100μA
	$V_{I(on)}$	3	—	—		V_O= 0.3V, I_O=1mA
Output Voltage	$V_{O(on)}$	—	0.1	0.3	V	I_O/ I_I= 5mA/0.25mA
Input current	I_I	—	—	0.15	mA	V_I= 5V
Output current	$I_{O(off)}$	—	—	0.5	μA	V_{CC}=50V, V_I= 0 V
DC current gain	G_I	82	—	—	—	V_O= 5V, I_O= 5mA
Input resistance	R_1	70	100	130	KΩ	—
Resistance ratio	R_2 / R_1	0.8	1	1.2	—	—
Transition frequency	f_T	—	250	—	MHz	V_{CE}=10V, I_E=– 5 mA, f =100MHz*

*Transition frequency of the device

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