

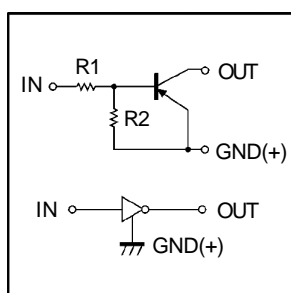
# Digital transistors (built-in resistors)

• **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.

**DTA115EKA**

• **Circuit schematic**



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● **Absolute maximum ratings**( $T_a=25^\circ\text{C}$ )

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	DTA115EE	$P_d$	150	mW
	DTA115EUA/DTA115EKA		200	
	DTA115ESA		300	
Junction temperature		$T_j$	150	$^\circ\text{C}$
Storage temperature		$T_{stg}$	-55~+150	$^\circ\text{C}$

● **Electrical characteristics**( $T_a=25^\circ\text{C}$ )

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

\*Transition frequency of the device

This datasheet has been downloaded from:

[www.DatasheetCatalog.com](http://www.DatasheetCatalog.com)

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