# Digital transistor (built-in resistor) DTA113TKA

#### Features

- 1) Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors.
- 2) The bias resistors consist of thin-film 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.

#### ●Circuit schematic

# ● Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	Vcво	-50	V
Collector-emitter voltage	VCEO	-50	V
Emitter-base voltage	VEBO	−5 to +10	V
Collector current	Ic	-100	mA
Collector Power dissipation	Pc	200	mW
Junction temperature	Tj	150	°C
Storage temperature	Tstg	−55 to +150	°C

## Package, marking, and packaging specifications

Part No.	DTA113TKA		
Package	SMT3		
Marking	91		
Packaging code	T146		
Basic ordering unit (pieces)	3000		

# ●External characteristics (Ta=25°C)

Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions
Collector-base breakdown voltage	ВУсво	-50	_	_	V	Ic= -50μA
Collector-emitter breakdown voltage	BVceo	-50	_	_	V	Ic=-1mA
Emitter-base breakdown voltage	ВУево	-5	_	-	V	I <sub>E</sub> = -50μA
Collector cutoff current	Ісво	-	_	-0.5	μΑ	V <sub>CB</sub> = -50V
Emitter cutoff current	ІЕВО	_	_	-0.5	μΑ	V <sub>EB</sub> = -4V
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	-	_	-0.3	V	−5mA / −0.25mA
DC current transfer ratio	hfe	100	250	600	_	Ic=-1mA , Vc==-5V
Input resistance	R <sub>1</sub>	0.7	1	1.3	kΩ	-
Transition frequency	f⊤	_	250	_	MHz	V <sub>CB</sub> = -10V , I <sub>E</sub> =5mA , f=100MHz *

<sup>\*</sup> Transition frequency of the device.

## •Electrical characteristics curves

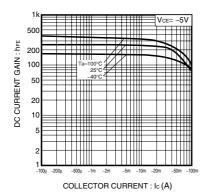


Fig.1 DC Current gain vs. Collector Current

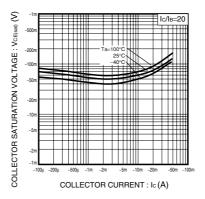


Fig.2 Collector-emitter saturation voltage vs. Collector Current

Rev.A

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