

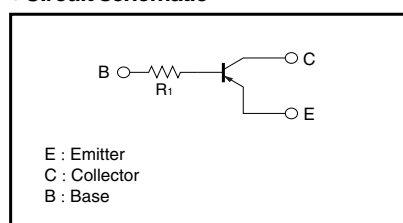
Digital transistor (built-in resistor)

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	V _{CB0}	-50	V
Collector-emitter voltage	V _{CE0}	-50	V
Emitter-base voltage	V _{EB0}	-5 to +10	V
Collector current	I _c	-100	mA
Collector Power dissipation	P _c	200	mW
Junction temperature	T _j	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

●Package, marking, and packaging specifications

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

Transistors

●External characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV _{CB0}	-50	-	-	V	I _C = -50μA
Collector-emitter breakdown voltage	BV _{CEO}	-50	-	-	V	I _C = -1mA
Emitter-base breakdown voltage	BV _{EBO}	-5	-	-	V	I _E = -50μA
Collector cutoff current	I _{CB0}	-	-	-0.5	μA	V _{CB} = -50V
Emitter cutoff current	I _{EBO}	-	-	-0.5	μA	V _{EB} = -4V
Collector-emitter saturation voltage	V _{CE(sat)}	-	-	-0.3	V	-5mA / -0.25mA
DC current transfer ratio	h _{FE}	100	250	600	-	I _C = -1mA , V _{CE} = -5V
Input resistance	R ₁	0.7	1	1.3	kΩ	-
Transition frequency	f _T	-	250	-	MHz	V _{CB} = -10V , I _E =5mA , f=100MHz *

* Transition frequency of the device.

●Electrical characteristics curves

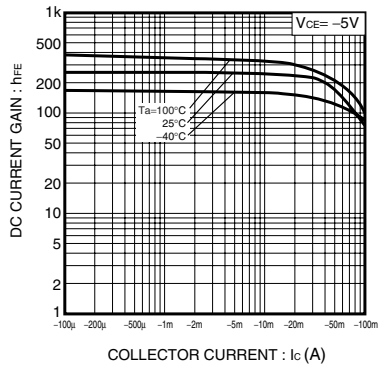


Fig.1 DC Current gain vs. Collector Current

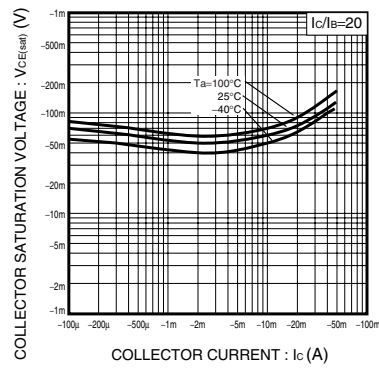


Fig.2 Collector-emitter saturation voltage vs. Collector Current

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