

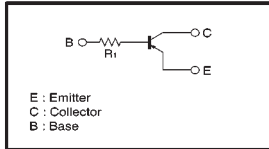
Digital transistor (built in resistor)

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~+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~+150	°C

●Package, marking, and packaging specifications

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

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV _{CB0}	-50	—	—	V	I _c =-50 μA
Collector-emitter breakdown voltage	BV _{CE0}	-50	—	—	V	I _c =-1mA
Emitter-base breakdown voltage	BV _{EB0}	-5	—	—	V	I _E =-50 μA
Collector cutoff current	I _{CB0}	—	—	-0.5	μA	V _{CB} =-50V
Emitter cutoff current	I _{EB0}	—	—	-0.5	μA	V _{EB} =-4V
Collector-emitter saturation voltage	V _{CE(sat)}	—	—	-0.3	V	I _c /I _E =-10mA/-1mA
DC current transfer ratio	h _{FE}	100	250	600	—	I _c =-1mA, V _{CE} =-5V
Input resistance	R _i	0.7	1	1.3	kΩ	—
Transition frequency	f _r	—	250	—	MHz	V _{CB} =-10V, I _E =5mA, f=100MHz

* Transition frequency of the device.

(SPEC-A113T)

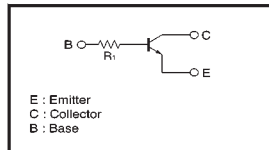
Digital transistor (built-in resistor)

DTC123TKA

●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 negative 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	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~+150	°C

●Package, marking, and packaging specifications

Part No.	DTC123TKA
Package	SMT3
Marking	02
Packaging code	T146
Basic ordering unit (pieces)	3000

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV _{CB0}	50	—	—	V	I _c =50 μA
Collector-emitter breakdown voltage	BV _{CE0}	50	—	—	V	I _c =1mA
Emitter-base breakdown voltage	BV _{EB0}	5	—	—	V	I _E =50 μA
Collector cutoff current	I _{CB0}	—	—	0.5	μA	V _{CB} =50V
Emitter cutoff current	I _{EB0}	—	—	0.5	μA	V _{EB} =4V
Collector-emitter saturation voltage	V _{CE(sat)}	—	—	0.3	V	I _c /I _E =5mA/0.25mA
DC current transfer ratio	h _{FE}	100	250	600	—	I _c =1mA, V _{CE} =5V
Input resistance	R _i	1.54	2.2	2.86	kΩ	—
Transition frequency	f _r	—	250	—	MHz	V _{CB} =10V, I _E =-5mA, f=100MHz

* Transition frequency of the device.

(SPEC-C123T)