

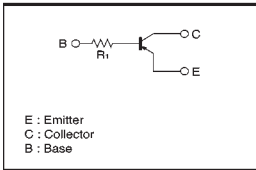
# Digital transistor (built-in resistor)

DTA125TUA / DTA125TKA / DTA125TSA

## ●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



## ●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV <sub>CB0</sub>	-50	—	—	V	I <sub>C</sub> =-50 μA
Collector-emitter breakdown voltage	BV <sub>CE0</sub>	-50	—	—	V	I <sub>C</sub> =-1mA
Emitter-base breakdown voltage	BV <sub>EB0</sub>	-5	—	—	V	I <sub>E</sub> =-50 μA
Collector cutoff current	I <sub>CB0</sub>	—	—	-0.5	μA	V <sub>CB</sub> =-50V
Emitter cutoff current	I <sub>EB0</sub>	—	—	-0.5	μA	V <sub>EB</sub> =-4V
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	—	—	-0.3	V	I <sub>C</sub> =-0.5mA, I <sub>E</sub> =-0.05mA
DC current transfer ratio	h <sub>FE</sub>	100	250	600	—	I <sub>C</sub> =-1mA, V <sub>CE</sub> =-5V
Input resistance	R <sub>I</sub>	70	100	130	kΩ	—
Transition frequency	f <sub>T</sub>	—	250	—	MHz	V <sub>CE</sub> =-10V, I <sub>E</sub> =5mA, f=100MHz *

\* Transition frequency of the device.

(94S-552-A125T)

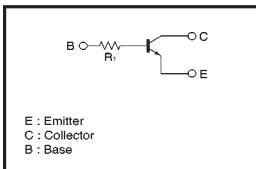
# Digital transistor (built-in resistor)

DTC125TUA / DTC125TKA / DTC125TSA

## ●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



## ●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV <sub>CB0</sub>	50	—	—	V	I <sub>C</sub> =50 μA
Collector-emitter breakdown voltage	BV <sub>CE0</sub>	50	—	—	V	I <sub>C</sub> =1mA
Emitter-base breakdown voltage	BV <sub>EB0</sub>	5	—	—	V	I <sub>E</sub> =50 μA
Collector cutoff current	I <sub>CB0</sub>	—	—	0.5	μA	V <sub>CB</sub> =50V
Emitter cutoff current	I <sub>EB0</sub>	—	—	0.5	μA	V <sub>EB</sub> =4V
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	—	—	0.3	V	I <sub>C</sub> =0.5mA, I <sub>E</sub> =0.05mA
DC current transfer ratio	h <sub>FE</sub>	100	250	600	—	I <sub>C</sub> =1mA, V <sub>CE</sub> =5V
Input resistance	R <sub>I</sub>	70	100	130	kΩ	—
Transition frequency	f <sub>T</sub>	—	250	—	MHz	V <sub>CE</sub> =10V, I <sub>E</sub> =-5mA, f=100MHz *

\* Transition frequency of the device.

(94S-674-C125T)

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

Parameter	Symbol	Limits	Unit
Collector-base voltage	V <sub>CB0</sub>	-50	V
Collector-emitter voltage	V <sub>CE0</sub>	-50	V
Emitter-base voltage	V <sub>EB0</sub>	-5	V
Collector current	I <sub>C</sub>	-100	mA
Collector power dissipation	P <sub>C</sub>	DTA125TUA / DTA125TKA	200
		DTA125TSA	300
Junction temperature	T <sub>J</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55~+150	°C

## ●Package, marking, and packaging specifications

Part No.	DTA125TUA	DTA125TKA	DTA125TSA
Package	UMT3	SMT3	SPT
Marking	9A	9A	—
Packaging code	T106	T146	TP
Basic ordering unit (pieces)	3000	3000	5000

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

Parameter	Symbol	Limits	Unit
Collector-base voltage	V <sub>CB0</sub>	50	V
Collector-emitter voltage	V <sub>CE0</sub>	50	V
Emitter-base voltage	V <sub>EB0</sub>	5	V
Collector current	I <sub>C</sub>	100	mA
Collector power dissipation	P <sub>C</sub>	DTC125TUA / DTC125TKA	200
		DTC125TSA	300
Junction temperature	T <sub>J</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55~+150	°C

## ●Package, marking, and packaging specifications

Part No.	DTC125TUA	DTC125TKA	DTC125TSA
Package	UMT3	SMT3	SPT
Marking	0A	0A	—
Packaging code	T106	T146	TP
Basic ordering unit (pieces)	3000	3000	5000