

# 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.

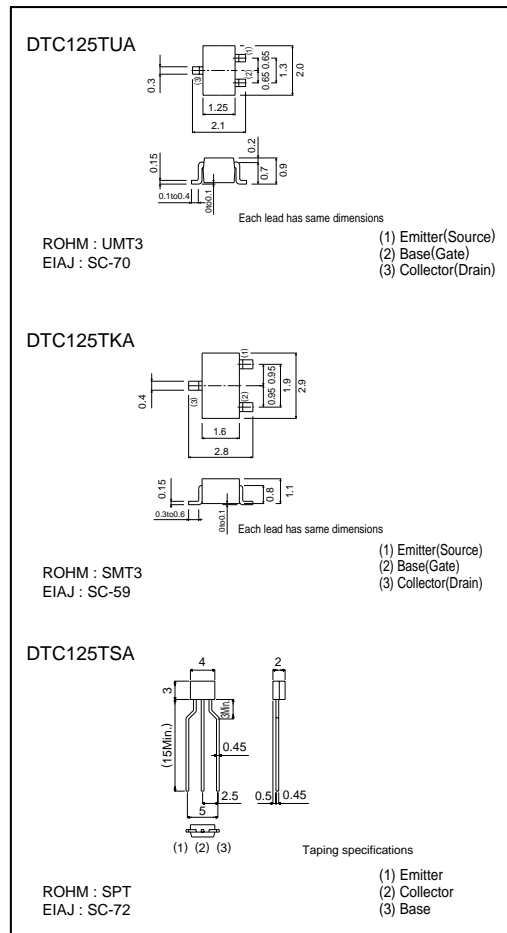
### ●Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V <sub>CE0</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>	200 300	mW
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

### ●External dimensions (Units : mm)



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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV <sub>CE0</sub>	50	-	-	V	I <sub>c</sub> = 50μA
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> = 50μA
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>B</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>1</sub>	140	200	260	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.

### ●Circuit schematic

