

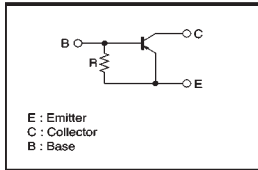
# Digital transistors (built-in resistor)

## DTA144GUA / DTA144GKA

### ●Features

- 1) The built-in bias resistors consist of thin-film resistors with complete isolation to allow positive biasing of the input, and parasitic effects are almost completely eliminated.
- 2) Only the on / off conditions need to be set for operation, making device design easy.
- 3) 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> =-160 μA
Collector cutoff current	I <sub>CB0</sub>	—	—	-0.5	μA	V <sub>CB</sub> =-50V
Emitter cutoff current	I <sub>EB0</sub>	-65	—	-130	μA	V <sub>EB</sub> =-4V
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	—	—	-0.3	V	I <sub>C</sub> =-10mA, I <sub>E</sub> =-0.5mA
DC current transfer ratio	h <sub>FE</sub>	68	—	—	—	I <sub>C</sub> =-5mA, V <sub>CE</sub> =-5V
Emitter-base resistance	R	32.9	47	61.1	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-570-A144G)

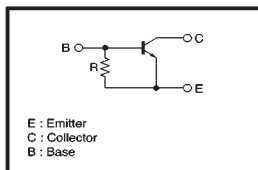
# Digital transistors (built-in resistor)

## DTC144GE / DTC144GUA / DTC144GKA / DTC144GSA

### ●Features

- 1) The built-in bias resistors consist of thin-film resistors with complete isolation to allow negative biasing of the input, and parasitic effects are almost completely eliminated.
- 2) Only the on / off conditions need to be set for operation, making device design easy.
- 3) 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> =160 μA
Collector cutoff current	I <sub>CB0</sub>	—	—	0.5	μA	V <sub>CB</sub> =50V
Emitter cutoff current	I <sub>EB0</sub>	65	—	130	μA	V <sub>EB</sub> =4V
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	—	—	0.3	V	I <sub>C</sub> =10mA, I <sub>E</sub> =0.5mA
DC current transfer ratio	h <sub>FE</sub>	68	—	—	—	I <sub>C</sub> =5mA, V <sub>CE</sub> =5V
Emitter-base resistance	R	32.9	47	61.1	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-692-C144G)

### ●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>	200	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.	DTA144GUA	DTA144GKA
Package	UMT3	SMT3
Marking	K16	K16
Packaging code	T106	T146
Basic ordering unit (pieces)	3000	3000

### ●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	DTC144GE	150	mW
	DTC144GUA / DTC144GKA	200	
	DTC144GSA	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.	DTC144GE	DTC144GUA	DTC144GKA	DTC144GSA
Package	EMT3	UMT3	SMT3	SPT
Marking	K26	K26	K26	—
Packaging code	TL	T106	T146	TP
Basic ordering unit (pieces)	3000	3000	3000	5000