

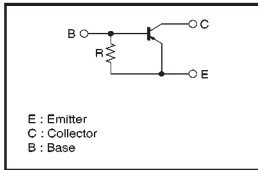
# Digital transistors (built-in resistor)

## DTA124GKA / DTA124GSA

### ●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> = -330 μA
Collector cutoff current	I <sub>cB0</sub>	—	—	-0.5	μA	V <sub>CE</sub> = -50V
Emitter cutoff current	I <sub>eB0</sub>	-140	—	-260	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>	56	—	—	—	I <sub>c</sub> = -5mA, V <sub>CE</sub> = -5V
Emitter-base resistance	R	15.4	22	28.6	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.

(94-543-A124G)

### ●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	DTA124GKA	200	mW
	DTA124GSA	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.	DTA124GKA	DTA124GSA
Package	SMT3	SPT
Marking	K15	—
Packaging code	T146	TP
Basic ordering unit (pieces)	3000	5000

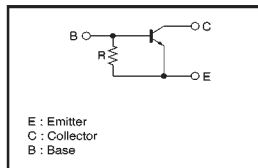
# Digital transistors (built-in resistor)

## DTC124GUA / DTC124GKA / DTC124GSA

### ●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> = 330 μA
Collector cutoff current	I <sub>cB0</sub>	—	—	0.5	μA	V <sub>CE</sub> = 50V
Emitter cutoff current	I <sub>eB0</sub>	140	—	260	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>	56	—	—	—	I <sub>c</sub> = 5mA, V <sub>CE</sub> = 5V
Emitter-base resistance	R	15.4	22	28.6	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.

### ●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	DTC124GUA/DTC124GKA	200	mW
	DTC124GSA	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.	DTC124GUA	DTC124GKA	DTC124GSA
Package	UMT3	SMT3	SPT
Marking	K25	K25	—
Packaging code	T106	T146	TP
Basic ordering unit (pieces)	3000	3000	5000

(94S-665-C124G)