

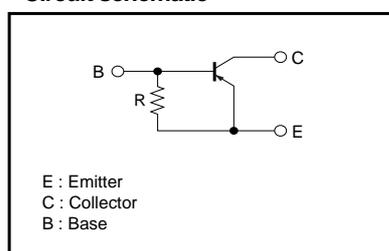
# Digital transistors (built-in resistor)

## 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



### ●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 to +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

Transistors

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV <sub>CBO</sub>	-50	-	-	V	I <sub>C</sub> = -50μA
Collector-emitter breakdown voltage	BV <sub>CEO</sub>	-50	-	-	V	I <sub>C</sub> = -1mA
Emitter-base breakdown voltage	BV <sub>EBO</sub>	-5	-	-	V	I <sub>E</sub> = -160μA
Collector cutoff current	I <sub>CBO</sub>	-	-	-0.5	μA	V <sub>CB</sub> = -50V
Emitter cutoff current	I <sub>EBO</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>B</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.

●Electrical characteristics curves

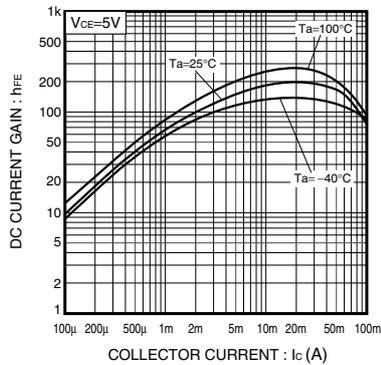


Fig.1 DC current gain vs. Collector current

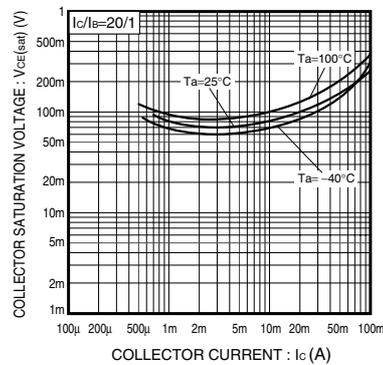


Fig.2 Collector-Emitter saturation voltage vs. Collector current

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