

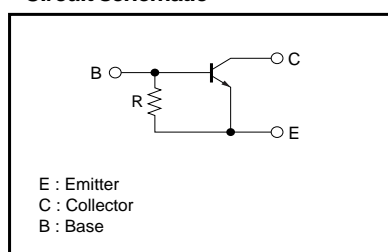
Digital transistors (built-in resistor)

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



●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	DTC144GE	150	mW
	DTC144GUA / DTC144GKA	200	
	DTC144GSA	300	
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

●Package, marking, and packaging specifications

Part No.	DTC144GE	DTA144GUA	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

DTC144GE / DTA144GUA / DTC144GKA / DTC144GSA

Transistors

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	50	—	—	V	$I_C=50\mu A$
Collector-emitter breakdown voltage	BV_{CEO}	50	—	—	V	$I_C=1mA$
Emitter-base breakdown voltage	BV_{EBO}	5	—	—	V	$I_E=160\mu A$
Collector cutoff current	I_{CBO}	—	—	0.5	μA	$V_{CB}=50V$
Emitter cutoff current	I_{EBO}	65	—	130	μA	$V_{EB}=4V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	0.3	V	$I_C=10mA, I_B=0.5mA$
DC current transfer ratio	h_{FE}	68	—	—	—	$I_C=5mA, V_{CE}=5V$
Emitter-base resistance	R	32.9	47	61.1	$k\Omega$	—
Transition frequency	f_T	—	250	—	MHz	$V_{CE}=10V, I_E=-5mA, f=100MHz$ *

* Transition frequency of the device.

●Electrical characteristics curves

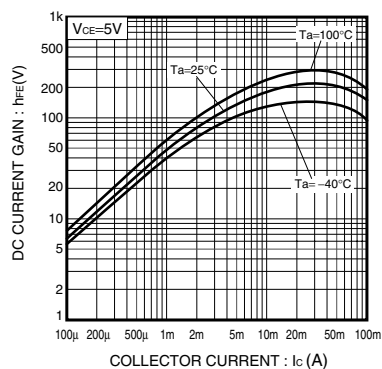


Fig.1 DC current gain
vs. Collector current

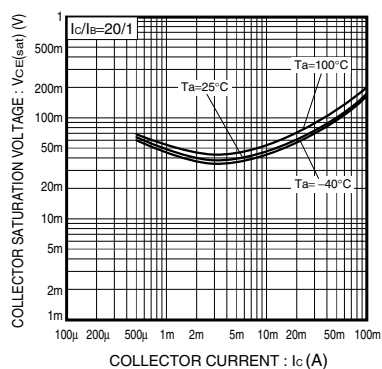


Fig.2 Collector-Emitter saturation voltage
vs. Collector current

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