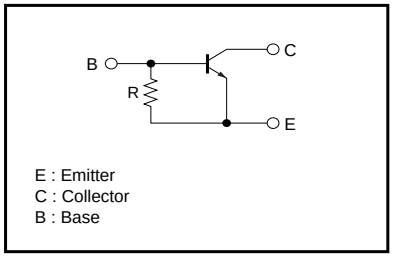
Digital transistors (built-in resistor)

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_{CBO}	50	V
Collector-emitter voltage		V_{CEO}	50	V
Emitter-base voltage		V_{EBO}	5	V
Collector current		I_C	100	mA
Collector Power dissipation	DTC144GE	Pc	150	mW
	DTC144GUA / DTC144GKA		200	
	DTC144GSA		300	
Junction temperature		Tj	150	℃
Storage temperature		Tstg	–55 to +150	℃

●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

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	50	–	–	V	I_C=50μA
Collector-emitter breakdown voltage	BV_{CEO}	50	–	–	V	I_C=1mA
Emitter-base breakdown voltage	BV_{EBO}	5	–	–	V	I_E=160μA
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	kΩ	–
Transition frequency	f_T	–	250	–	MHz	V_{CE}=10V , I_E= –5mA , f=100MHz ＊

＊ Transition frequency of the device.

●**Electrical characteristics curves**

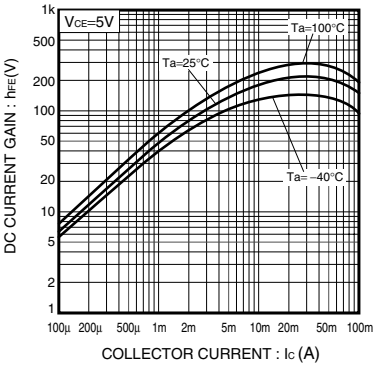


Fig.1 DC current gain vs. Collector current

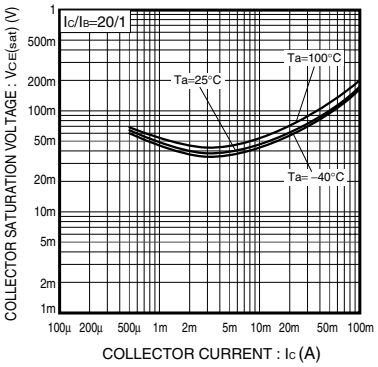


Fig.2 Collector-Emitter saturation voltage vs. Collector current

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