

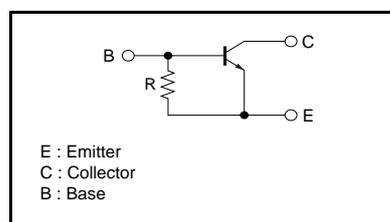
Digital transistor (built-in resistor)

DTD114GK

●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	500	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.	DTD114GK
Package	SMT3
Marking	L24
Packaging code	T146
Basic ordering unit (pieces)	3000

Transistors

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV _{CB0}	50	–	–	V	I _C =50μA
Collector-emitter breakdown voltage	BV _{CE0}	50	–	–	V	I _C =1mA
Emitter-base breakdown voltage	BV _{EB0}	5	–	–	V	I _E =720μA
Collector cutoff current	I _{CB0}	–	–	0.5	μA	V _{CB} =50V
Emitter cutoff current	I _{EB0}	300	–	580	μA	V _{EB} =4V
Collector-emitter saturation voltage	V _{CE(sat)}	–	–	0.3	V	I _C /I _B =50mA/2.5mA
DC current transfer ratio	h _{FE}	56	–	–	–	I _C =50mA , V _{CE} =5V
Emitter-base resistance	R	7	10	13	kΩ	–
Transition frequency	f _T	–	200	–	MHz	V _{CE} =10V , I _E = –50mA , f=100MHz *

* Transition frequency of the device.

●Electrical characteristics curves

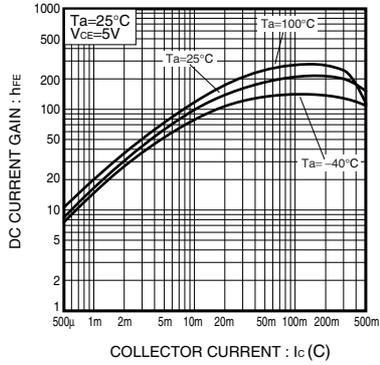


Fig.1 DC current transfer ratio vs. Collector current

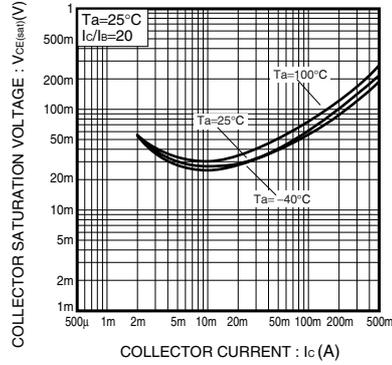


Fig.2 Collector-Emitter saturation voltage vs. Collector current

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