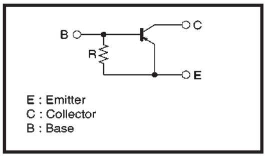
Digital transistors (built-in resistor)

DTB114GK

●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℃）

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	℃
Storage temperature	T_{stg}	−55～+150	℃

●Package, marking, and packaging specifications

Part No.	DTB114GK
Package	SMT3
Marking	L14
Packaging code	T146
Basic ordering unit (pieces)	3000

●Electrical characteristics（Ta=25℃）

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	$I_E=-720\,\mu A$
Collector cutoff current	I_{CBO}	—	—	−0.5	μA	$V_{CB}=-30V$
Emitter cutoff current	I_{EBO}	−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	—	—	—	$I_C=-100mA$, $V_{CE}=-5V$
Emitter-base resistance	R	7	10	13	kΩ	—
Transition frequency	f_T	—	200	—	MHz	$V_{CE}=-10V$, $I_E=5mA$, $f=100MHz$ ＊

＊ Transition frequency of the device.

(96-292-B114G)

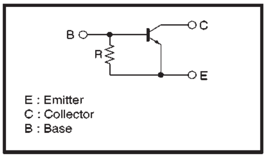
Digital transistors (built-in resistor)

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℃）

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	℃
Storage temperature	T_{stg}	−55～+150	℃

●Package, marking, and packaging specifications

Part No.	DTD114GK
Package	SMT3
Marking	L24
Packaging code	T146
Basic ordering unit (pieces)	3000

●Electrical characteristics（Ta=25℃）

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	$I_E=720\,\mu A$
Collector cutoff current	I_{CBO}	—	—	0.5	μA	$V_{CB}=50V$
Emitter cutoff current	I_{EBO}	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	—	—	—	$I_C=100mA$, $V_{CE}=5V$
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.

(96-360-D114G)