

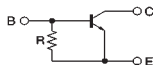
Digital transistors (built-in resistor)

DTC114GUA / DTC114GKA / DTC114GSA

●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



E : Emitter
C : Collector
B : Base

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	50	—	—	V	$I_C=50\text{ }\mu\text{A}$
Collector-emitter breakdown voltage	BV_{CEO}	50	—	—	V	$I_C=1\text{mA}$
Emitter-base breakdown voltage	BV_{EBO}	5	—	—	V	$I_E=720\text{ }\mu\text{A}$
Collector cutoff current	I_{CBO}	—	—	0.5	μA	$V_{CB}=50\text{V}$
Emitter cutoff current	I_{EBO}	300	—	580	μA	$V_{EB}=4\text{V}$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	0.3	V	$I_C=10\text{mA}$, $I_B=0.5\text{mA}$
DC current transfer ratio	h_{FE}	30	—	—	—	$I_C=5\text{mA}$, $V_{CE}=5\text{V}$
Emitter-base resistance	R	7	10	13	k Ω	—
Transition frequency	f_T	—	250	—	MHz	$V_{CE}=10\text{V}$, $I_E=-5\text{mA}$, $f=100\text{MHz}$ *

●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	DTC114GUA / DTC114GKA	P_C	200	mW
	DTC114GSA		300	
Junction temperature		T_J	150	°C
Storage temperature		T_{stg}	-55~+150	°C

●Package, marking, and packaging specifications

Part No.	DTC114GUA	DTC114GKA	DTC114GSA
Package	UMT3	SMT3	SPT
Marking	K24	K24	—
Packaging code	T106	T146	TP
Basic ordering unit (pieces)	3000	3000	5000