

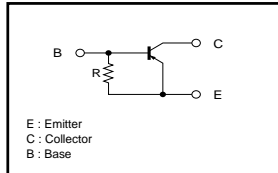
# Digital transistors (built-in resistor)

## 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.

### ●Equivalent circuit



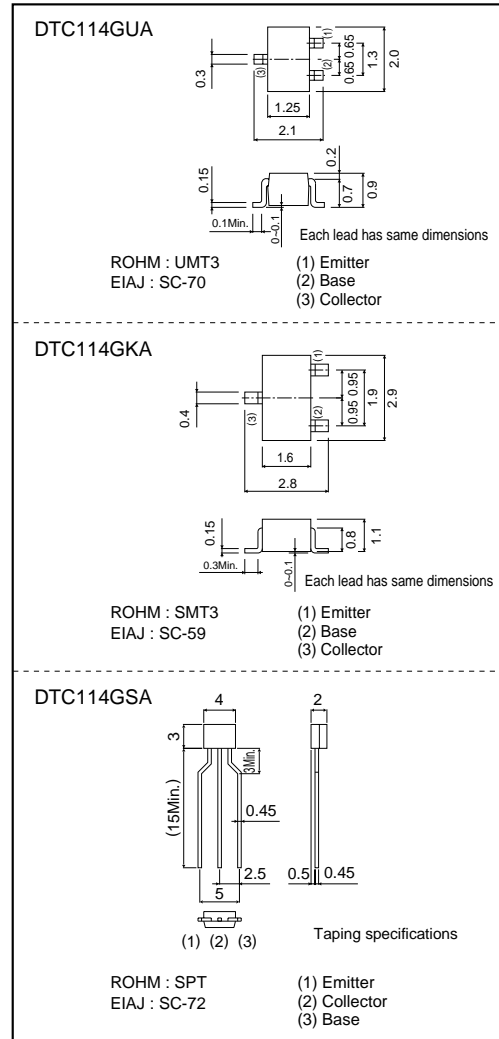
### ●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V <sub>CB0</sub>	50	V
Collector-emitter voltage	V <sub>CE0</sub>	50	V
Emitter-base voltage	V <sub>EB0</sub>	5	V
Collector current	I <sub>c</sub>	100	mA
Collector Power dissipation	P <sub>c</sub>	DTC114GUA / DTC114GKA	200
		DTC114GSA	300
Junction temperature	T <sub>J</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55→150	°C

### ●Package, marking, and packaging specifications

Type	DTC114GUA	DTC114GKA	DTC114GSA
Package	UMT3	SMT3	SPT
Marking	K24	K24	-
Packaging code	T106	T146	TP
Basic ordering unit (pieces)	3000	3000	5000

### ●External dimensions (Units : mm)



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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	V <sub>CB0</sub>	50	-	-	V	I <sub>c</sub> =50μA
Collector-emitter breakdown voltage	V <sub>CE0</sub>	50	-	-	V	I <sub>c</sub> =1mA
Emitter-base breakdown voltage	V <sub>EB0</sub>	5	-	-	V	I <sub>E</sub> =720μA
Collector cutoff current	I <sub>cbo</sub>	-	-	0.5	μA	V <sub>CB</sub> =50V
Emitter cutoff current	I <sub>EBO</sub>	300	-	580	μA	V <sub>EB</sub> =4V
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	-	-	0.3	V	I <sub>c</sub> =10mA, I <sub>E</sub> =0.5mA
DC current transfer ratio	h <sub>FE</sub>	30	-	-	-	I <sub>c</sub> =5mA, V <sub>CE</sub> =5V
Emitter-base resistance	R	7	10	13	kΩ	-
Transition frequency	f <sub>T</sub>	-	250	-	MHz	V <sub>CE</sub> =10V, I <sub>E</sub> =-5mA, f=100MHz

\* Transition frequency of the device.