

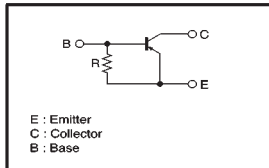
# Digital transistors (built-in resistor)

DTA114GE / DTA114GUA / DTA114GKA / DTA114GSA

## ●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



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

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	$\mu A$	$V_{CB} = -50V$
Emitter cutoff current	$I_{EBO}$	-300	—	-580	$\mu A$	$V_{EB} = -4V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	-0.3	V	$I_C = -10mA, I_E = -0.5mA$
DC current transfer ratio	$h_{FE}$	30	—	—	—	$I_C = -5mA, V_{CE} = -5V$
Emitter-base resistance	R	7	10	13	k $\Omega$	—
Transition frequency	f <sub>r</sub>	—	250	—	MHz	$V_{CE} = -10V, I_E = 5mA, f = 100MHz$ *

\* Transition frequency of the device.

(94S-510-A114G)

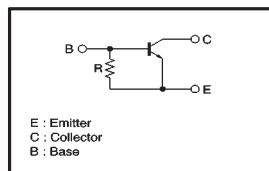
# Digital transistors (built-in resistor)

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



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

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	$\mu A$	$V_{CB} = 50V$
Emitter cutoff current	$I_{EBO}$	300	—	580	$\mu A$	$V_{EB} = 4V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	0.3	V	$I_C = 10mA, I_E = 0.5mA$
DC current transfer ratio	$h_{FE}$	30	—	—	—	$I_C = 5mA, V_{CE} = 5V$
Emitter-base resistance	R	7	10	13	k $\Omega$	—
Transition frequency	f <sub>r</sub>	—	250	—	MHz	$V_{CE} = 10V, I_E = -5mA, f = 100MHz$ *

\* Transition frequency of the device.

(94S-629-C114G)

## ●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	DTA114GE	150	mW
	DTA114GUA / DTA114GKA	200	
	DTA114GSA	300	
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55~+150	°C

## ●Package, marking, and packaging specifications

Part No.	DTA114GE	DTA114GUA	DTA114GKA	DTA114GSA
Package	EMT3	UMT3	SMT3	SPT
Marking	K14	K14	K14	—
Packaging code	TL	T106	T146	TP
Basic ordering unit (pieces)	3000	3000	3000	5000

## ●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	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