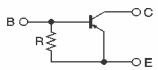
Digital transistors (built-in resistor)

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



E : Emitter
C : Collector
B : Base

●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	−100	mA
Collector Power dissipation	DTA114GE	Pc	150	mW
	DTA114GUA / DTA114GKA		200	
	DTA114GSA		300	
Junction temperature		Tj	150	℃
Storage temperature		Tstg	−55～+150	℃

●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

●Electrical characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	−50	—	—	V	I_C=−50 μA
Collector-emitter breakdown voltage	BV_{CEO}	−50	—	—	V	I_C=−1mA
Emitter-base breakdown voltage	BV_{EBO}	−5	—	—	V	I_E=−720 μA
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=−10mA , I_B=−0.5mA
DC current transfer ratio	h_{FE}	30	—	—	—	I_C=−5mA , V_{CE}=−5V
Emitter-base resistance	R	7	10	13	kΩ	—
Transition frequency	f_T	—	250	—	MHz	V_{CE}=−10V , I_E=5mA , f=100MHz ＊

＊ Transition frequency of the device.

(94S-510-A114G)

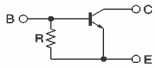
Digital transistors (built-in resistor)

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



E : Emitter
C : Collector
B : Base

●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	100	mA
Collector Power dissipation	DTC114GUA / DTC114GKA	Pc	200	mW
	DTC114GSA		300	
Junction temperature		Tj	150	℃
Storage temperature		Tstg	−55～+150	℃

●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

●Electrical characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	50	—	—	V	I_C=50 μA
Collector-emitter breakdown voltage	BV_{CEO}	50	—	—	V	I_C=1mA
Emitter-base breakdown voltage	BV_{EBO}	5	—	—	V	I_E=720 μA
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=10mA , I_B=0.5mA
DC current transfer ratio	h_{FE}	30	—	—	—	I_C=5mA , V_{CE}=5V
Emitter-base resistance	R	7	10	13	kΩ	—
Transition frequency	f_T	—	250	—	MHz	V_{CE}=10V , I_E=−5mA , f=100MHz ＊

＊ Transition frequency of the device.

(94S-629-C114G)