

-100mA / -50V Digital transistors (with built-in resistor)

DTA114GUA / DTA114GKA

● **Applications**

Inverter, Interface, Driver

● **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 the device design easy.
- 3) Higher mounting densities can be achieved.

● **Structure**

PNP epitaxial planar silicon transistor
(Resistor built-in type)

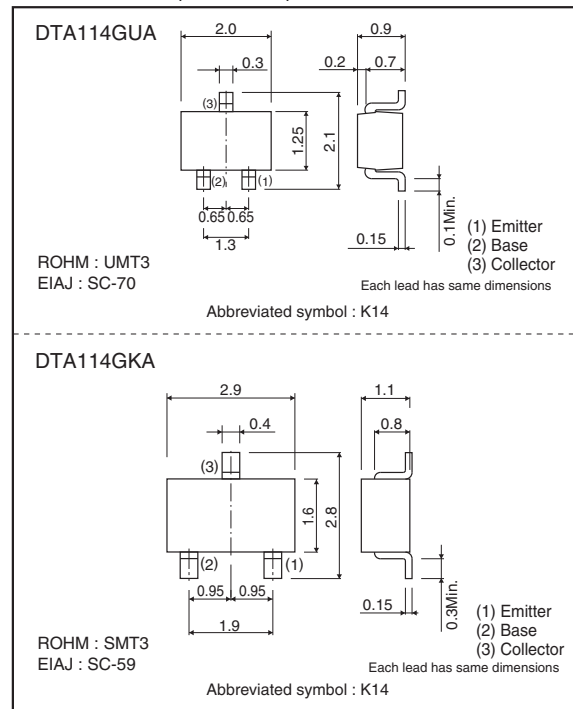
● **Packaging specifications**

Part No.	Package	UMT3	SMT3
	Basic ordering unit (pieces)		3000
	Package	UMT3	SMT3
	Packaging type	Taping	Taping
	Code	T106	T146
DTA114GUA		○	—
DTA114GKA		—	○

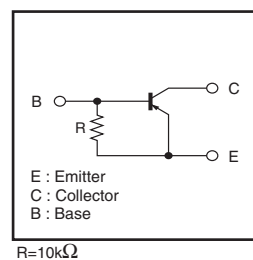
● **Absolute maximum ratings (Ta=25°C)**

Parameter	Symbol	Limits	Unit
Collector-base voltage	V _{CB0}	-50	V
Collector-emitter voltage	V _{CEO}	-50	V
Emitter-base voltage	V _{EB0}	-5	V
Collector current	I _c	-100	mA
Collector Power dissipation	P _c	200	mW
Junction temperature	T _j	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

● **Dimensions (Unit : mm)**



● **Inner circuit**



● Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV _{CB0}	-50	-	-	V	I _C = -50μA
Collector-emitter breakdown voltage	BV _{CE0}	-50	-	-	V	I _C = -1mA
Emitter-base breakdown voltage	BV _{EB0}	-5	-	-	V	I _E = -720μA
Collector cutoff current	I _{CB0}	-	-	-0.5	μA	V _{CB} = -50V
Emitter cutoff current	I _{EB0}	-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 _i	7	10	13	kΩ	-
Transition frequency	f _T *	-	250	-	MHz	V _{CE} = -10V, I _E =50mA, f=100MHz

* Characteristics of built-in transistor

● Electrical characteristic curves

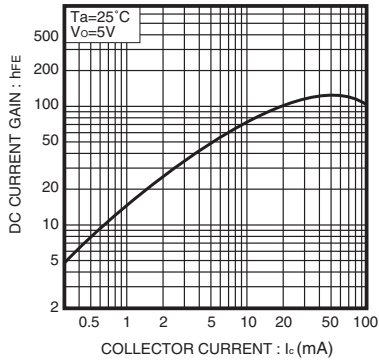


Fig.1 DC Current gain vs. Collector Current

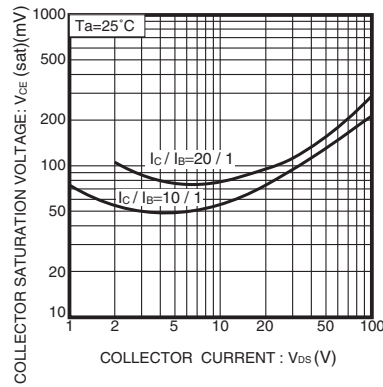


Fig.2 Collector-emitter saturation voltage vs. Collector Current

Notes

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