

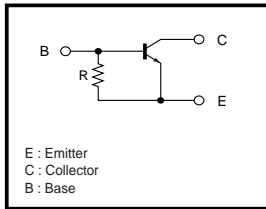
Digital transistors (built-in resistor)

DTC115GUA / DTC115GKA / DTC115GSA

●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.

●Equivalent circuit



●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V _{CB0}	50	V
Collector-emitter voltage	V _{CE0}	50	V
Emitter-base voltage	V _{EB0}	5	V
Collector current	I _C	100	mA
Collector power dissipation	P _c	200	mW
		300	mW
Junction temperature	T _j	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

●Package, marking, and packaging specifications

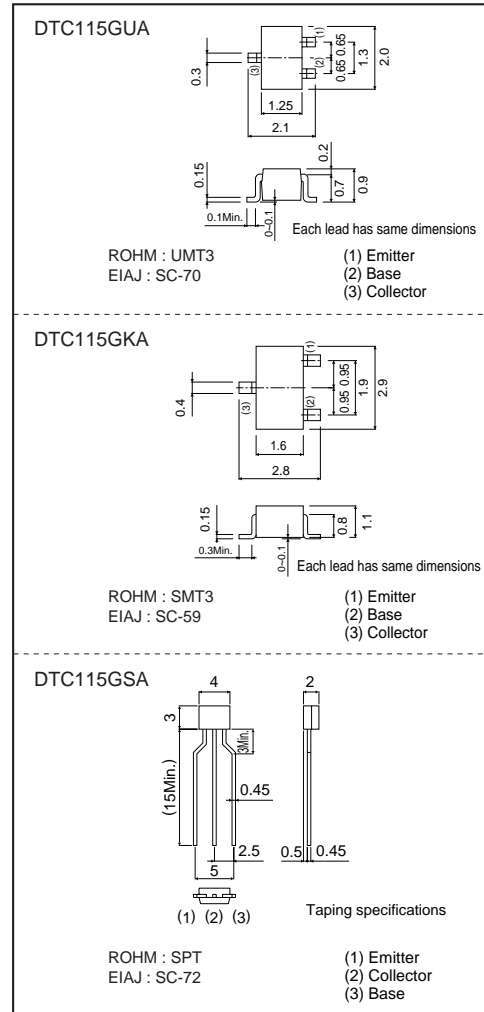
Type	DTC115GUA	DTC115GKA	DTC115GSA
Package	UMT3	SMT3	SPT
Marking	K29	K29	-
Packaging code	T106	T146	TP
Basic ordering unit (pieces)	3000	3000	5000

●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 =72μA
Collector cutoff current	I _{CB0}	-	-	0.5	μA	V _{CB} =50V
Emitter cutoff current	I _{EB0}	30	-	58	μA	V _{EB} =4V
Collector-emitter saturation voltage	V _{CE(sat)}	-	-	0.3	V	I _C =5mA, I _B =0.25mA
DC current transfer ratio	h _{FE}	82	-	-	-	I _C =5mA, V _{CE} =5V
Emitter-base resistance	R	70	100	130	kΩ	-
Transition frequency	f _r	-	250	-	MHz	V _{CE} =10V, I _E =-5mA, f=100MHz

* Transition frequency of the device.

●External dimensions (Unit : mm)



Transistors

●Electrical characteristics curves

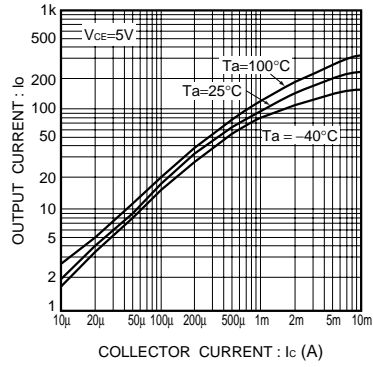


Fig.1 DC current transfer ratio vs. collector current characteristics

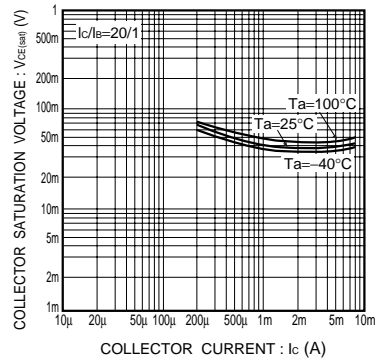


Fig.2 Collector-emitter saturation voltage vs. collector current characteristics

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