

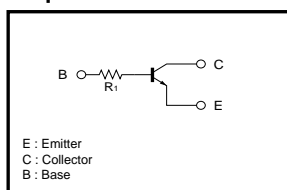
Digital transistors (built in resistor)

DTC115TM / DTC115TE / DTC115TUA / DTC115TKA / DTC115TSA

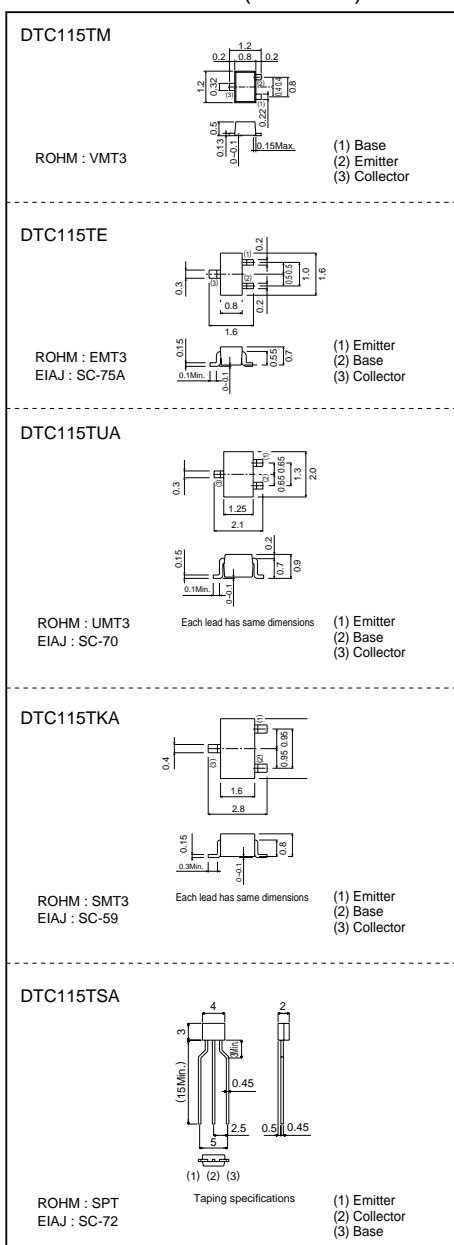
●Features

- 1) Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors.
- 2) The bias resistors consist of thin-film resistors with complete isolation to allow negative biasing of the input, and parasitic effects are almost completely eliminated.
- 3) Only the on / off conditions need to be set for operation, making device design easy.
- 4) Higher mounting densities can be achieved.

●Equivalent circuit



●External dimensions (Units : mm)



DTC115TM / DTC115TE / DTC115TUA / DTC115TKA / DTC115TSA

Transistors

●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	DTC115TM / DTC115TE	150	mW
	DTC115TUA / DTC115TKA	200	
	DTC115TSA	300	
Junction temperature	T _j	150	°C
Storage temperature	T _{stg}	-55~+150	°C

●Packaging, marking, and packaging specifications

Part No.	DTC115TM	DTC115TE	DTC115TUA	DTC115TKA	DTC115TSA
Package	VMT3	EMT3	UMT3	SMT3	SPT
Marking	09	09	09	09	-
Packaging code	T2L	TL	T106	T146	TP
Basic ordering unit (pieces)	8000	3000	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 =50μA
Collector cutoff current	I _{cb0}	-	-	0.5	μA	V _{CB} =50V
Emitter cutoff current	I _{EB0}	-	-	0.5	μA	V _{EB} =4V
Collector-emitter saturation voltage	V _{CE(sat)}	-	-	0.3	V	I _c /I _B =1mA/0.1mA
DC current transfer ratio	h _{FE}	100	250	600	-	I _c =1mA, V _{CE} =5V
Input resistance	R _i	70	100	130	kΩ	-
Transition frequency	f _r	-	250	-	MHz	V _{CE} =10V, I _E =-5mA, f=100MHz

* Transition frequency of the device.

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