

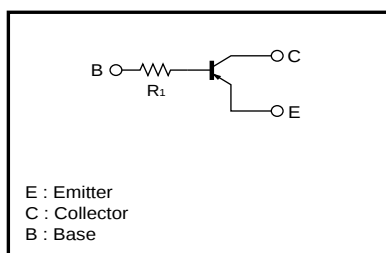
Digital transistors (built-in resistor)

DTA115TH / DTA115TE / DTA115TUA / DTA115TKA / DTA115TSA

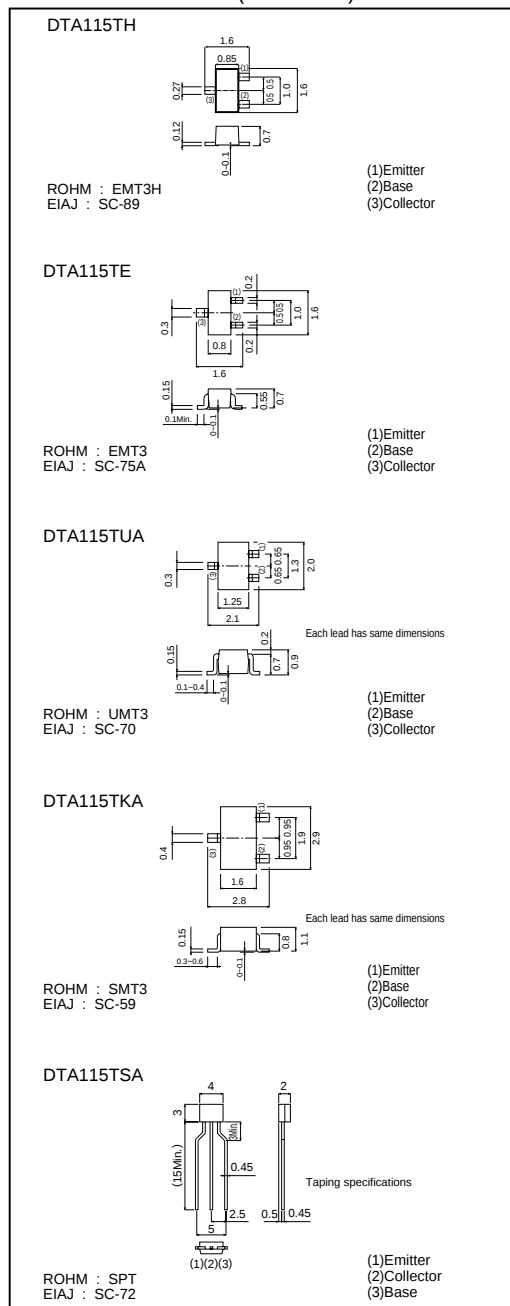
●Features

- 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 positive 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.

●Circuit schematic



●External dimensions (Units : mm)



DTA115TH / DTA115TE / DTA115TUA / DTA115TKA / DTA115TSA

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	DTA115TH / DTA115TE	150	mW
	DTA115TUA / DTA115TKA	200	
	DTA115TSA	300	
Junction temperature	T _j	150	°C
Storage temperature	T _{stg}	−55 ~ +150	°C

●Package, marking, and packaging specifications

Part No.	DTA115TH	DTA115TE	DTA115TUA	DTA115TKA	DTA115TSA
Package	EMT3H	EMT3	UMT3	SMT3	SPT
Marking	99	99	99	99	—
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 _{cBO}	—	—	−0.5	μA	V _{CB} = −50V
Emitter cutoff current	I _{EBO}	—	—	−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 _T	—	250	—	MHz	V _{CE} = −10V, I _E = 5mA, f = 100MHz *

*Transition frequency of the device.