

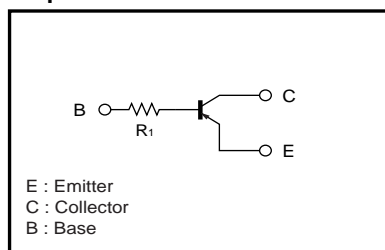
## Digital transistors (built-in resistor)

**DTA115TM / DTA115TE / DTA115TUA /  
DTA115TKA / DTA115TSA**

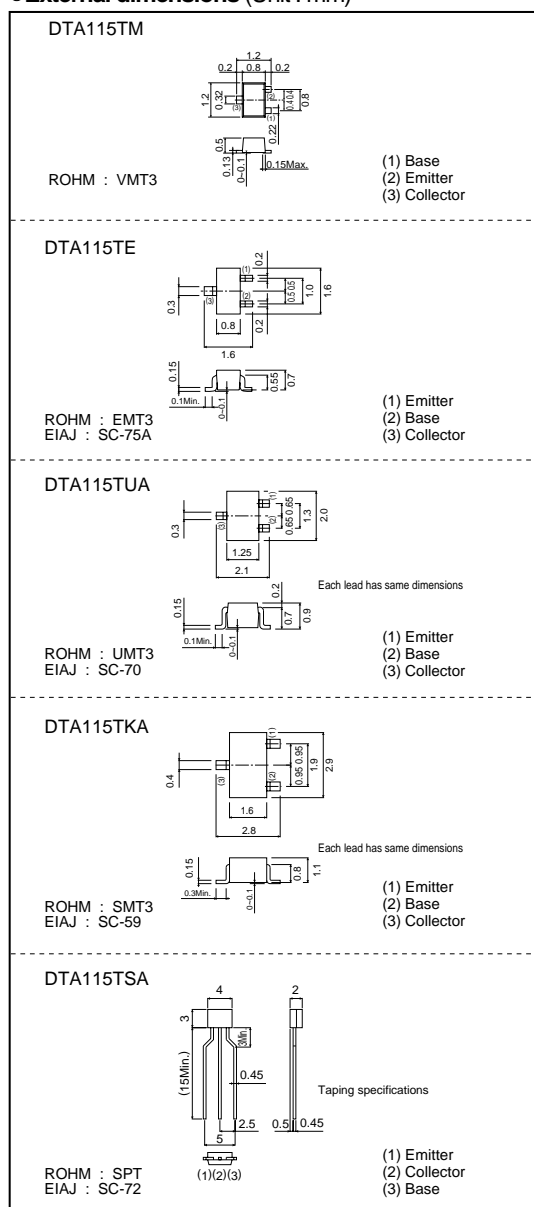
## ●Features

- 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.

●Equivalent circuit



●External dimensions (Unit : mm)



# DTA115TM / DTA115TE / DTA115TUA / DTA115TKA / DTA115TSA

## Transistors

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

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	DTA115TM / DTA115TE	150	mW
	DTA115TUA / DTA115TKA	200	
	DTA115TSA	300	
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

### ●Package, marking, and packaging specifications

Part No.	DTA115TM	DTA115TE	DTA115TUA	DTA115TKA	DTA115TSA
Package	VMT3	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	$BV_{CBO}$	-50	-	-	V	$I_C = -50\mu A$
Collector-emitter breakdown voltage	$BV_{CEO}$	-50	-	-	V	$I_C = -1mA$
Emitter-base breakdown voltage	$BV_{EBO}$	-5	-	-	V	$I_E = -50\mu A$
Collector cutoff current	$I_{CBO}$	-	-	-0.5	$\mu A$	$V_{CB} = -50V$
Emitter cutoff current	$I_{EBO}$	-	-	-0.5	$\mu A$	$V_{EB} = -4V$
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	$R_1$	70	100	130	k $\Omega$	-
Transition frequency	$f_T$	-	250	-	MHz	$V_{CE} = -10V, I_E = 5mA, f = 100MHz$ *

\*Transition frequency of the device.

### ●Electrical characteristics curves

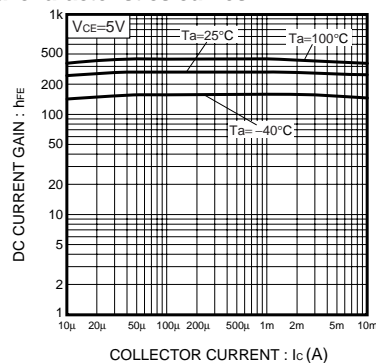


Fig.1 DC current gain  
vs. Collector current

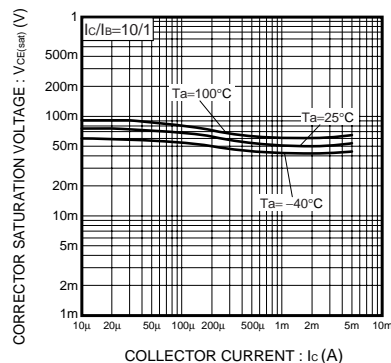


Fig.2 Collector-Emitter saturation voltage  
vs. Collector current

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