

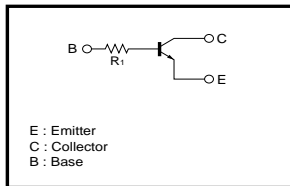
# Digital transistors (built in resistor)

## DTC115TH / DTC115TUA / DT115TKA / DTC115TSA

### ●Features

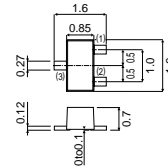
- 1) Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors.
- 2) The bias resistors consist of thin-film resistors with complete isolation to allow negative biasing of the input, and parasitic effects are almost completely eliminated.
- 3) 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)

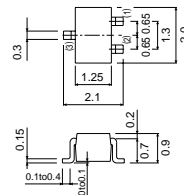
#### DTC115TH



ROHM : EMT3H  
EIAJ : SC-89

(1) Emitter  
(2) Base  
(3) Collector

#### DTC115TUA

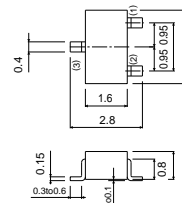


ROHM : UMT3  
EIAJ : SC-70

Each lead has same dimensions

(1) Emitter  
(2) Base  
(3) Collector

#### DTC115TKA

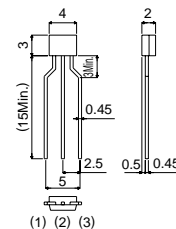


ROHM : SMT3  
EIAJ : SC-59

Each lead has same dimensions

(1) Emitter  
(2) Base  
(3) Collector

#### DTC115TSA



ROHM : SPT  
EIAJ : SC-72

Taping specifications

(1) Emitter  
(2) Collector  
(3) Base

# DTC115TH / DTC115TUA / DTC115TKA / DTC115TSA

## Transistors

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

Parameter	Symbol	Limits	Unit
Collector-base voltage	V <sub>CB0</sub>	50	V
Collector-emitter voltage	V <sub>CE0</sub>	50	V
Emitter-base voltage	V <sub>EB0</sub>	5	V
Collector current	I <sub>c</sub>	100	mA
Collector power dissipation	DTC115TH	150	mW
	DTC115TUA / DTC115TKA	200	
	DTC115TSA	300	
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55~+150	°C

### ●Packaging, marking, and packaging specifications

Part No.	DTC115TH	DTC115TUA	DTC115TKA	DTC115TSA
Package	EMT3H	UMT3	SMT3	SPT
Marking	09	09	09	-
Packaging code	T2L	T106	T146	TP
Basic ordering unit (pieces)	8000	3000	3000	5000

### ●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV <sub>CB0</sub>	50	-	-	V	I <sub>c</sub> =50μA
Collector-emitter breakdown voltage	BV <sub>CE0</sub>	50	-	-	V	I <sub>c</sub> =1mA
Emitter-base breakdown voltage	BV <sub>EB0</sub>	5	-	-	V	I <sub>e</sub> =50μA
Collector cutoff current	I <sub>cbo</sub>	-	-	0.5	μA	V <sub>CB</sub> =50V
Emitter cutoff current	I <sub>EB0</sub>	-	-	0.5	μA	V <sub>EB</sub> =4V
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	-	-	0.3	V	I <sub>c</sub> /I <sub>B</sub> =1mA/0.1mA
DC current transfer ratio	h <sub>FE</sub>	100	250	600	-	I <sub>c</sub> =1mA, V <sub>CE</sub> =5V
Input resistance	R <sub>1</sub>	70	100	130	kΩ	-
Transition frequency	f <sub>T</sub>	-	250	-	MHz	V <sub>CE</sub> =10V, I <sub>E</sub> =-5mA, f=100MHz *

\* Transition frequency of the device.

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