

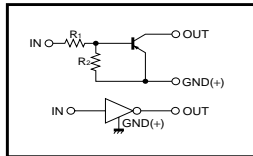
# Digital transistor (built-in resistors)

## DTA144VUA / DTA144VKA / DTA144VSA

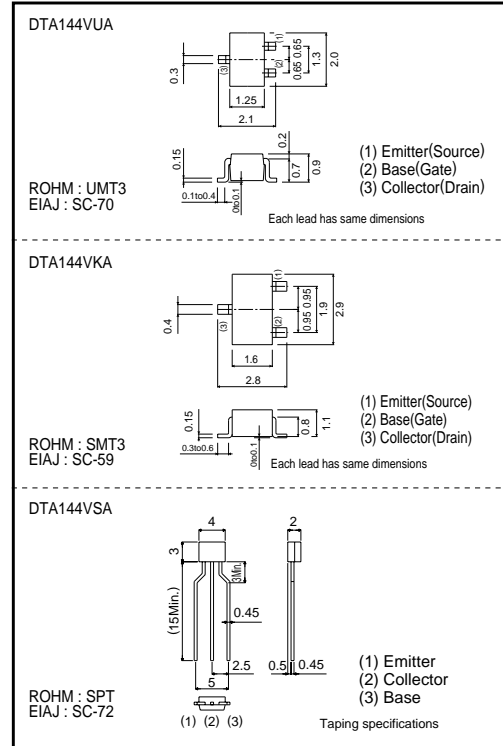
### ●Features

- 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 (Units : mm)



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

Parameter	Symbol	Limits	Unit
Supply voltage	V <sub>CC</sub>	-50	V
Input voltage	V <sub>I</sub>	-40~+15	V
Output current	I <sub>O</sub>	-30	mA
	I <sub>C(Max.)</sub>	-10	
Power dissipation	DTA144VUA / DTA144VKA DTA144VSA	P <sub>d</sub>	200
			300
Junction temperature	T <sub>J</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55~+150	°C

### ●Packaging, marking and packaging specifications

Type	DTA144VUA	DTA144VKA	DTA144VSA
Package	UMT3	SMT3	SPT
Marking	156	E56	-
Packaging code	T106	T146	TP
Basic ordering unit (pieces)	3000	3000	5000

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	V <sub>I(off)</sub>	-	-	-1	V	V <sub>CC</sub> =-5V, I <sub>O</sub> =-100μA V <sub>O</sub> =-0.3V, I <sub>B</sub> =-2mA
	V <sub>I(on)</sub>	-6	-	-		
Output voltage	V <sub>O(on)</sub>	-	-0.1	-0.3	V	I <sub>O</sub> =-10mA, I <sub>B</sub> =-0.5mA
Input current	I <sub>I</sub>	-	-	-0.16	mA	V <sub>I</sub> =5V
Output current	I <sub>O(off)</sub>	-	-	-0.5	μA	V <sub>CC</sub> =-50V, V <sub>I</sub> =0V
DC current gain	G <sub>I</sub>	33	-	-	-	I <sub>O</sub> =-5mA, V <sub>O</sub> =-5V
Input resistance	R <sub>I</sub>	32.9	47	61.1	kΩ	-
Resistance ratio	R <sub>2</sub> /R <sub>1</sub>	0.17	0.21	0.26	-	-
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.