Digital transistors (built in resistor)
DTA144TE / DTA144TUA / DTA144TKA / DTA144TCA / DTA144TSA
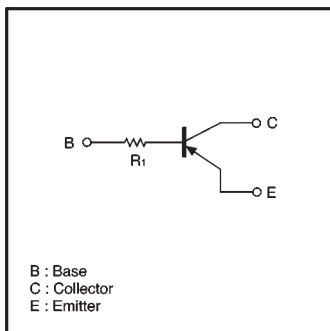
●Features

1) Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors (see equivalent circuit).

2) The bias resistors consist of thin-film resistors with complete isolation to allow positive biasing of the input. They also have the advantage of almost completely eliminating parasitic effects.

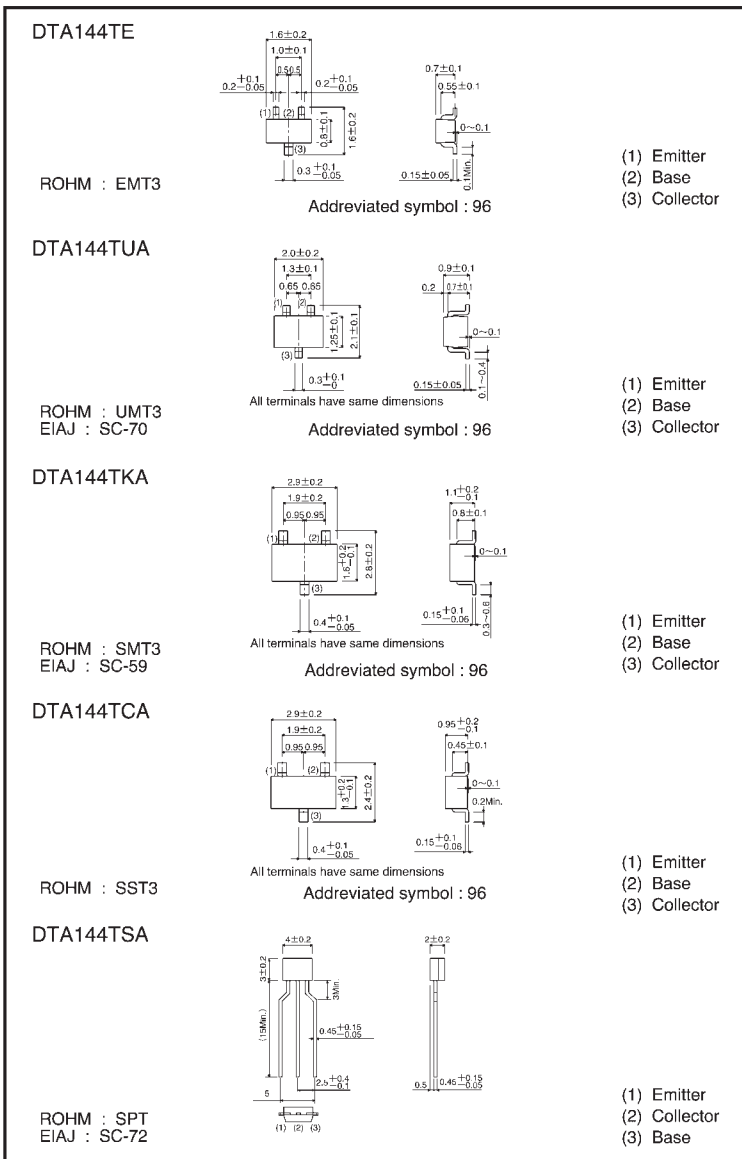3) Only the on/off conditions need to be set for operation, making device design easy.

●Structure

PNP digital transistor
(Built-in resistor type)

●Equivalent circuit

B : Base
C : Collector
E : Emitter

●External dimensions (Units: mm)

DTA144TE

ROHM : EMT3

Addreviated symbol : 96

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

DTA144TUA

ROHM : UMT3
EIAJ : SC-70

All terminals have same dimensions

Addreviated symbol : 96

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

DTA144TKA

ROHM : SMT3
EIAJ : SC-59

All terminals have same dimensions

Addreviated symbol : 96

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

DTA144TCA

ROHM : SST3

All terminals have same dimensions

Addreviated symbol : 96

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

DTA144TSA

ROHM : SPT
EIAJ : SC-72

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

(96-283-A144T)

●Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits(DTA144T□)					Unit
		E	UA	KA	CA	SA	
Collector-base voltage	V$_{CBO}$	−50					V
Collector-emitter voltage	V$_{CEO}$	−50					V
Emitter-base voltage	V$_{EBO}$	−5					
Collector current	I$_C$	−100					mA
Collector power dissipation	P$_C$	150	200		300	300	mW
Junction temperature	T$_j$	150					°C
Storage temperature	T$_{stg}$	−55～+150					°C

●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV$_{CBO}$	−50	—	—	V	I$_C$=−50μA
Collector-emitter breakdown voltage	BV$_{CEO}$	−50	—	—	V	I$_C$=−1mA
Emitter-base breakdown voltage	BV$_{EBO}$	−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$_B$=−5mA/−0.5mA
DC current transfer ratio	h$_{FE}$	100	250	600	—	V$_{CE}$=−5V, I$_C$=−1mA
Input resistance	R$_1$	32.9	47	61.1	kΩ	—
Transition frequency	f$_T$	—	250	—	MHz	V$_{CE}$=−10V, I$_E$=5mA, f=100MHz ✻

✻ Transition frequency of the device

●Packaging specifications

Part No.	Package	EMT3	UMT3	SMT3	SST3	SPT
	Packaging type	Taping	Taping	Taping	Taping	Taping
	Code	TL	T106	T146	T116	TP
	Basic ordering unit (pieces)	3000	3000	3000	3000	5000
DTA144TE		○	—	—	—	—
DTA144TUA		—	○	—	—	—
DTA144TKA		—	—	○	—	—
DTA144TCA		—	—	—	○	—
DTA144TSA		—	—	—	—	○

ROHM
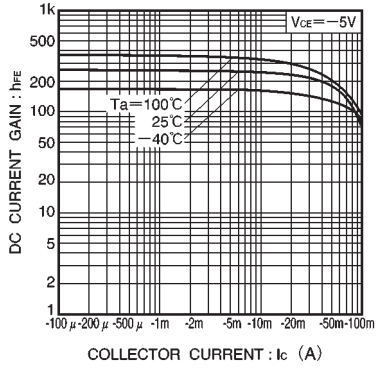
●Electrical characteristic curves
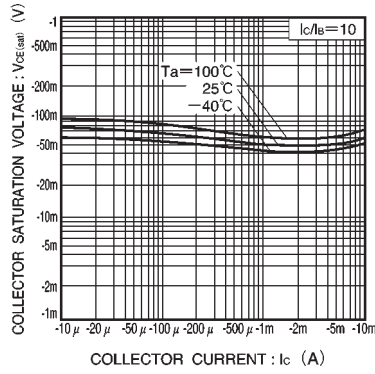

Fig.1   DC current gain vs.collector current

Fig.2   Collector-emitter saturation voltage vs.collector current