

# -100mA/-50V Digital transistors(with built-in resistors)

## DTA044TM / DTA044TEB / DTA044TUB

### ●Features

- 1) Built-in input resistor enables the direct control of base terminal by input voltage without external resistor.  
(See Inner 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 the device design easy.

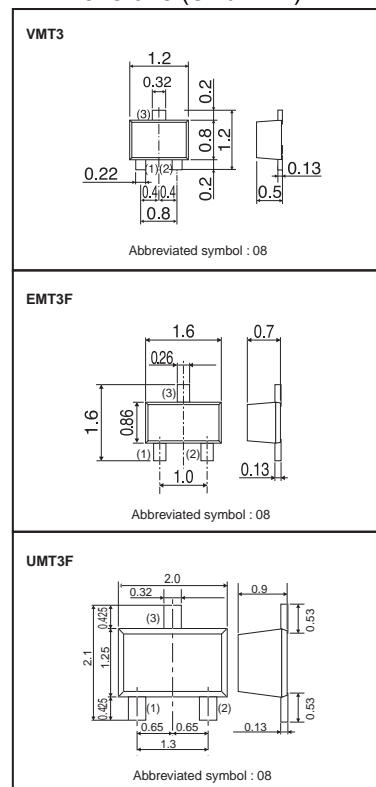
### ●Structure

PNP epitaxial planar silicon transistor  
(Resistor built-in type)

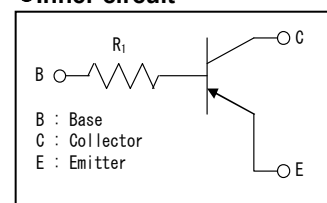
### ●Applications

Inverter, Interface, Driver

### ●Dimensions (Unit : mm)



### ●Inner circuit



$R_1=47k\Omega$

### ●Packaging specifications

Type	Package	VMT3	EMT3F	UMT3F
	Packaging Type	Taping	Taping	Taping
	Code	T2L	TL	TL
	Basic ordering unit (pieces)	8000	3000	3000
DTA044TM		○	-	-
DTA044TEB		-	○	-
DTA044TUB		-	-	○

### ●Absolute maximum (Ta=25°C)

Parameter	Symbol	Limits(DTA044T□)			Unit
		M	EB	UB	
Collector-base voltage	$V_{CBO}$	-50			V
Collector-emitter voltage	$V_{CEO}$	-50			V
Emitter-base voltage	$V_{EBO}$	-5			mV
Collector current	$I_{C(max)}$	-60			mA
Power dissipation *1	$P_D$	150		200	mW *
Junction temperature	$T_j$	150			°C
Range of storage temperature	$T_{stg}$	-55 to +150			°C

\*1 Each terminal mounted on a recommended land

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test 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	$I_{CBO}$	-	-	-500	nA	$V_{CB}=-50V$
Emitter cutoff current	$I_{EBO}$	-	-	-500	nA	$V_{EB}=-4V$
DC current transfer ratio	$h_{FE}$	-	-0.07	-0.15	V	$I_C=-5mA / I_B=-0.5mA$
Collector-emitter saturation voltage	$V_{CE(sat)}$	100	-	600	-	$V_{CE}=-10V / I_C=-5mA$
Transition frequency	$f_r$	-	250	-	MHz	$V_{CE}=-10V / I_E=5mA$ $f=100MHz$
Output capacitance	$C_{ob}$	32.9	47	61.1	kΩ	

●Electrical characteristics curves

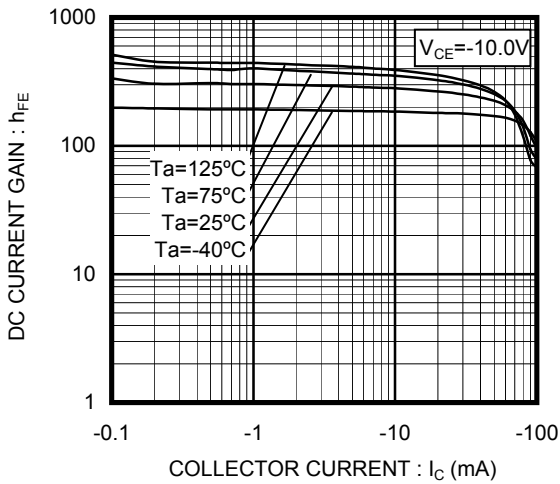


Fig.1 DC Current Gain vs. Collector Current

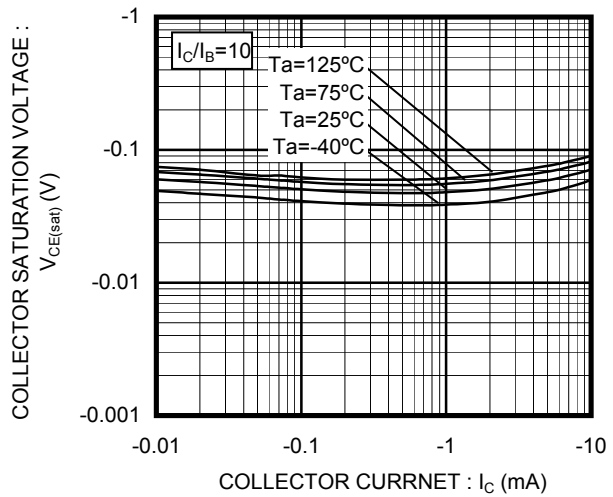


Fig.2 Collector Saturation Voltage vs. Collector Current

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