

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

DTA114TEB

●Applications

Inverter, Interface, Driver

●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 negative 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 silicon epitaxial planar transistor type
(Resistor built-in)

●Packaging specifications

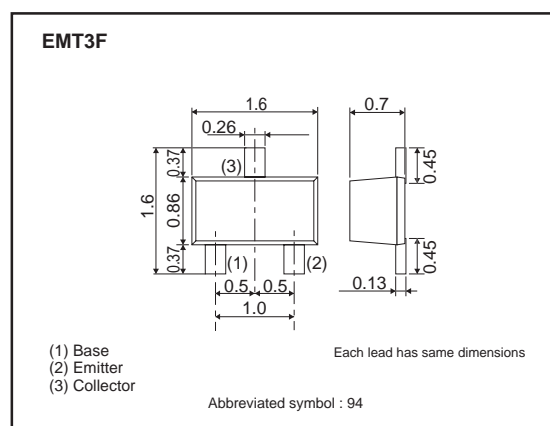
	Package	EMT3F
	Packaging type	Taping
	Code	TL
Part No.	Basic ordering unit (pieces)	3000
DTA114TEB		○

●Absolute maximum ratings (Ta=25°C)

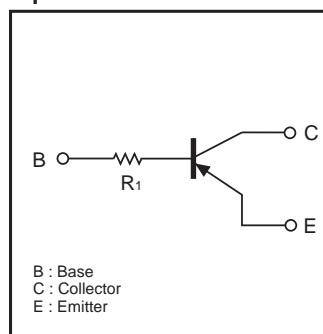
Parameter	Symbol	Limits	Unit
Collector-Base voltage	V _{CB0}	-50	V
Collector-Emitter voltage	V _{CE0}	-50	V
Emitter-Base voltage	V _{EB0}	-5	V
Collector current	I _c	-100	mA
Power dissipation	P _D *1	150	mW
Junction temperature	T _j	150	°C
Range of Storage temperature	T _{stg}	-55 to +150	°C

*1 Each terminal mounted on a recommended land

●Dimensions (Unit : mm)



●Equivalent circuit



R₁=10kΩ

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-emitter breakdown voltage	BVCE0	-50	-	-	V	Ic=-1mA
Collector-base breakdown voltage	BVCB0	-50	-	-	V	Ic=-50μA
Emitter-base breakdown voltage	BVEB0	-5	-	-	V	Ie=-50μA
Collector cutoff current	ICB0	-	-	-500	nA	VcB=-50V
Emitter cutoff current	IEB0	-	-	-500	nA	VEB=-4V
Collector-emitter saturation voltage	VCE(sat)	-	-	-0.3	V	Ic/Ib=-10mA/-1mA
DC current transfer ratio	hFE	100	250	600	-	VCE=-5V, Ic=-1mA
Transition frequency	fr *	-	250	-	MHz	VCE=-10V, Ie=5mA, f=100MHz
Input resistance	R1	7	10	13	kΩ	-

* Characteristics of built-in transistor

●Electrical characteristic curves

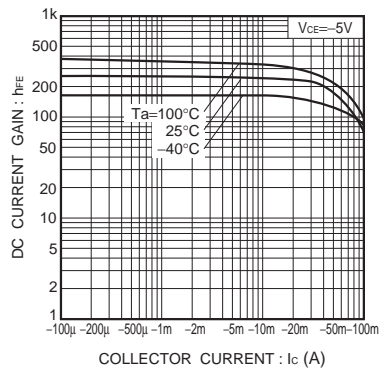


Fig.1 DC current gain vs. collector current

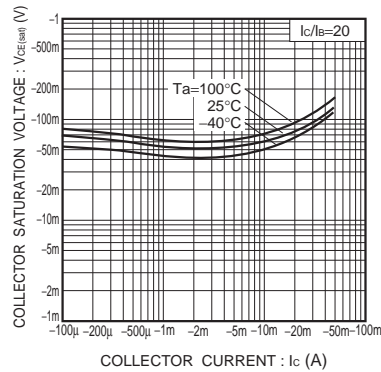


Fig.2 Collector-emitter saturation voltage vs. collector current

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