

-100mA / -50V Digital transistors

(with built-in resistors)

DTA114TM / DTA114TE / DTA114TUA / DTA114TKA

Applications

Inverter, Interface, Driver

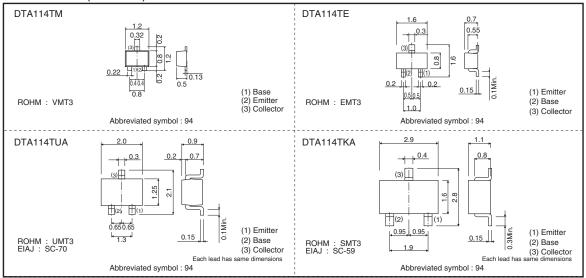
Features

- 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 the device design easy.

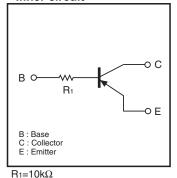
Structure

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

• Dimensions (Unit : mm)



●Inner circuit



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Packaging specifications

	Package		EMT3	UMT3	SMT3
	Package type	Taping	Taping	Taping	Taping
	Code	T2L	TL	T106	T146
Part No.	Basic ordering unit (pieces)	8000	3000	3000	3000
DTA114TM		0	-		-
DTA114TE		_	0	-	_
DTA114TUA		-	-	0	-
DTA114TKA	1	-	-	-	0

● Absolute maximum ratings (Ta=25°C)

Parameter	Symbol		Unit			
		DTA114TM	DTA114TE	DTA114TUA	DTA114TKA	Offic
Collector-base voltage	Vсво	-50				V
Collector-emitter voltage	VCEO	-50				V
Emitter-base voltage	VEBO	-5				V
Collector current	Ic	-100			mA	
Collector power dissipation	Pc	150 200		00	mW	
Junction temperature	Tj	150			°C	
Storage temperature	Tstg	-55 to +150			°C	

• Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions
Collector-base breakdown voltage	ВУсво	-50	-	-	V	Ic=-50μA
Collector-emitter breakdown voltage	BVceo	-50	-	-	V	Ic=-1mA
Emitter-base breakdown voltage	ВУево	-5	-	-	V	Iε=-50μA
Collector cutoff current	Ісво	-	-	-0.5	μΑ	Vcb=-50V
Emitter cutoff current	ІЕВО	-	-	-0.5	μΑ	V _{EB} =-4V
Collector-emitter saturation voltage	VCE(sat)	-	-	-0.3	V	Ic/Iв=-10mA/-1mA
DC current transfer ratio	hFE	100	250	600	-	Vce=-5V, Ic=-1mA
Input resistance	R ₁	7	10	13	kΩ	_
Transition frequency	f⊤ *	-	250	-	MHz	Vce=-10V, Ie=5mA, f=100MHz

^{*} Characteristics of built-in transistor

• Electrical characteristic curves

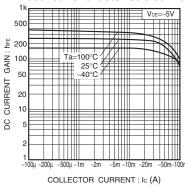


Fig.1 DC current gain vs. collector current

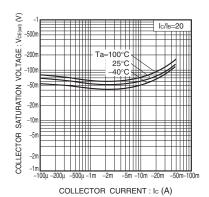


Fig.2 Collector-emitter saturation voltage vs. collector current

Notes

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