

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

DTA114EUB

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 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

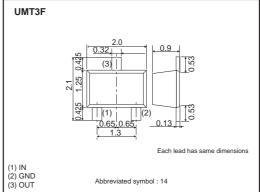
	Package	UMT3F
	Packaging type	Taping
	Code	TL
Part No.	Basic ordering unit (pieces)	3000
DTA114EUB		0

•Absolute maximum ratings (Ta=25°C)

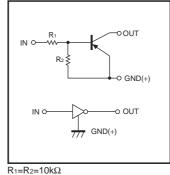
Parameter	Symbol	Limits	Unit
Supply voltage	Vcc	-50	V
Input voltage	Vin	-40 to +10	V
Collector current	lc(max)*1	-100	mA
Output current	lo	-50	mA
Power dissipation	PD*2	200	mW
Junction temperature	Tj	150	°C
Range of storage temperature	Tstg	-55 to +150	°C

*1 Characteristics of built-in transistor *2 Each terminal mounted on a recommended land

•Dimensions (Unit : mm)



Inner circuit



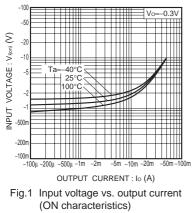
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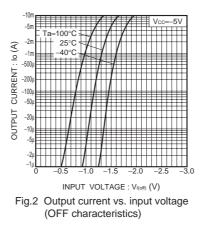
•Electrical characteristics (Ta=25°C)

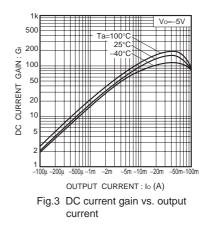
Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions	
Input voltage	VI(off)	-	-	-0.5	V	Vcc=–5V, Io=–100μA	
input voltage	VI(on)	-3.0	-	-	v	V	Vo=-0.3V, Io=-10mA
Output voltage	VO(on)	-	-100	-300	mV	lo=-10mA, li=-0.5mA	
Input current	h	-	-	-880	μΑ	VI=-5V	
Output current	IO(off)	-	-	-500	nA	Vcc=-50V, Vi=0V	
DC current gain	Gı	30	-	_	_	Vo=-5V, Io=-5mA	
Transition frequency	f⊤*	-	250	_	MHz	Vce=-10V, Ie=5mA, f=100MHz	
Input resistance	R1	7	10	13	kΩ	_	
Resistance ratio	R2/R1	0.8	1.0	1.2	-	-	

* Characteristics of built-in transistor

•Electrical characteristic curves







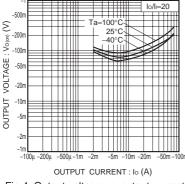


Fig.4 Output voltage vs. output current

	Notes
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