# -500mA / -12V Low VCE (sat) Digital transistors (with built-in resistors) **DTB543ZE / DTB543ZM**

#### Applications

Inverter, Interface, Driver

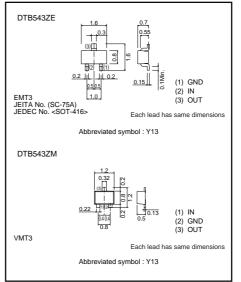
### Feature

- 1) VCE (sat) is lower than conventional products.
- 2) Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors (see equivalent circuit).
- 3) 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.
- 4) Only the on / off conditions need to be set for operation, making the device design easy.

#### Structure

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

#### External dimensions (Unit : mm)



Packaging specifications

Package Packaging type

Code

Part No. DTB543ZE

DTB543ZM

Basic ordering

unit (pieces)

## Absolute maximum ratings (Ta=25°C)

		Limits	Unit
Parameter	Symbol	DTB543ZE DTB543ZM	
		DIB3432E DIB3432IVI	
Supply voltage	Vcc	-12	V
Input voltage	Vin	-12 to +5	V
Collector current *1	IC (max)	-500	mA
Power dissipation *2	PD	150	mW
Junction temperature	Tj	150	ື
Storage temperature	Tstg	-55 to +150	C

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

# Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions
Input voltage	VI(off)	-	-	-0.3	V	Vcc=-5V, Io=-100µA
	VI(on)	-2.5	-	-		Vo=-0.3V, Io=-20mA
Output voltage	VO(on)	-	-60	-300	mV	lo/l=-100mA / -5mA
Input current	h	-	-	-1.4	mA	VI=-5V
Output current	IO(off)	-	-	-0.5	μΑ	Vcc=-12V, Vi=0V
DC current gain	Gi	140	-	-	-	Vo=-2V, Io=-100mA
Transition frequency *	f⊤	-	260	-	MHz	Vce=-10V, Ie=5mA, f=100MHz
Input resistance	R1	3.29	4.7	6.11	kΩ	_
Resistance ratio	R <sub>2</sub> /R <sub>1</sub>	8.0	10	12	-	_
Characteristics of built-in transistor.						

# Equivalent circuit

EMT3

Taping

ΤL

3000

Ο

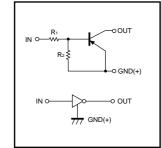
VMT3

Taping

T2L

8000

 $\bigcirc$ 



 $R_1=4.7k\Omega / R_2=47k\Omega$ 

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