

# -100mA / -50V Digital transistors

## (with built-in resistors)

DTA143ZM / DTA143ZE / DTA143ZUA / DTA143ZKA

#### 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).

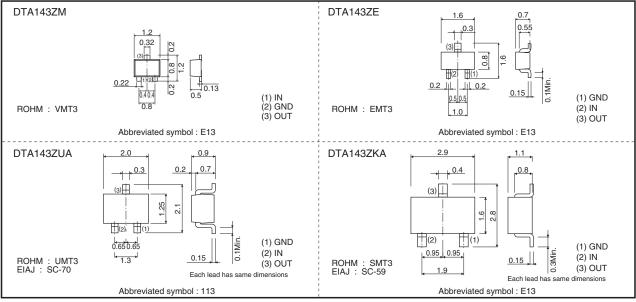
2)The bias resistors consist of thin-film resistors with complete isolation to allow positive biasing of the input. They also have the advantage of almost completely eliminating parasitic effects.

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)

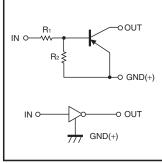
#### • Dimensions (Unit : mm)



#### • Packaging specifications

	Package	VMT3	EMT3	UMT3	SMT3
	Packaging type	Taping	Taping	Taping	Taping
	Code	T2L	TL	T106	T146
Part No.	Basic ordering unit (pieces)	8000	3000	3000	3000
DTA143ZM		0	-	-	-
DTA143ZE		-	0	-	_
DTA143ZUA		-	-	0	-
DTA143ZKA		-	-	-	0
DTA143ZE DTA143ZUA			0 - -	- 0 -	- - C

#### Inner circuit



R1=4.7k $\Omega$ , R2=47k $\Omega$ 

#### • Absolute maximum ratings (Ta=25°C)

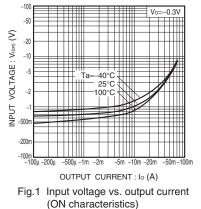
Parameter	Symbol	Lin	nits	Unit	
Farameter	Symbol	DTA143ZM DTA143ZE	DTA143ZUA DTA143ZKA		
Supply voltage	Vcc	-50		V	
Input voltage	VIN	-30	to +5	V	
Output oursent	lo	-1	00		
Output current	IC(Max.)	-1	mA		
Power dissipation	Po	150	200	mW	
Junction temperature	Tj	15	50	°C	
Storage temperature	Tstg	–55 to	o +150	°C	

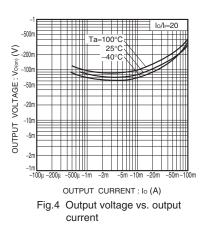
#### • Electrical characteristics (Ta=25°C)

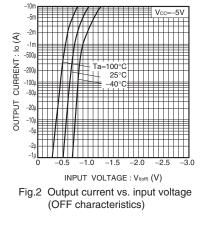
Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions
land to the sec	V <sub>I(off)</sub> – – – –0.5 Vcc=–5V, lo=–100µA	Vcc=-5V, Io=-100µA				
Input voltage	VI(on)	-1.3	-	-	V	Vo=-0.3V, Io=-5mA
Output voltage	VO(on)	-	-0.1	-0.3	V	lo/l=-5mA/-0.25mA
Input current	h	-	-	-1.8	mA	VI=-5V
Output current	IO(off)	-	-	-0.5	μΑ	Vcc=-50V, V=0V
DC current gain	Gi	80	-	-	-	Vo=-5V, Io=-10mA
Input resistance	R1	3.29	4.7	6.11	kΩ	_
Resistance ratio	R2/R1	8	10	12	-	_
Transition frequency	f⊤ *	_	250	-	MHz	Vce=-10V, Ie=5mA, f=100MHz

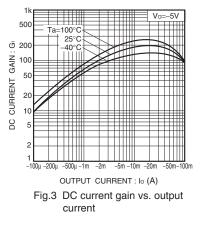
\* Characteristics of built-in transistor

#### • Electrical characteristic curves









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