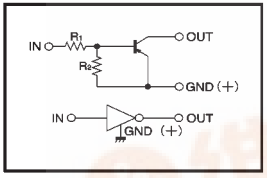
Digital transistors (built-in resistors)

DTA144WE / DTA144WUA / DTA144WKA / DTA144WSA

●Features

1）Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors.
2）The bias resistors consist of thin-film resistors with complete isolation to allow positive biasing of the input, and parasitic effects are almost completely eliminated.
3）Only the on / off conditions need to be set for operation, making device design easy.
4）Higher mounting densities can be achieved.

●Circuit schematic



●Absolute maximum ratings（Ta=25℃）

Parameter		Symbol	Limits	Unit
Supply voltage		Vcc	−50	V
Input voltage		VI	−40～+10	V
Output current		Io	−30	mA
		IC(Max.)	−100	
Power dissipation	DTA144WE	Pd	150	mW
	DTA144WUA / DTA144WKA		200	
	DTA144WSA		300	
Junction temperature		Tj	150	℃
Storage temperature		Tstg	−55～+150	℃

●Package, marking, and packaging specifications

Part No.	DTA144WE	DTA144WUA	DTA144WKA	DTA144WSA
Package	EMT3	UMT3	SMT3	SPT
Marking	76	76	76	—
Packaging code	TL	T106	T146	TP
Basic ordering unit (pieces)	3000	3000	3000	5000

●Electrical characteristics（Ta=25℃）

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	VI(off)	—	—	−0.8	V	Vcc=−5V , Io=−100 μA
	VI(on)	−4	—	—		Vo=−0.3V , Io=−2mA
Output voltage	VO(on)	—	−0.1	−0.3	V	Io=−10mA , II=−0.5mA
Input current	II	—	—	−0.16	mA	VI=−5V
Output current	IO(off)	—	—	−0.5	μA	Vcc=−50V , VI=0V
DC current gain	GI	56	—	—	—	Io=−5mA , Vo=−5V
Input resistance	R1	32.9	47	61.1	kΩ	—
Resistance ratio	R2/R1	0.37	0.47	0.57	—	—
Transition frequency	fT	—	250	—	MHz	VCE=−10V , IE=5mA , f=100MHz *

* Transition frequency of the device.

(94S-579-144W)

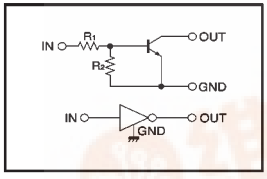
Digital transistors (built-in resistors)

DTC144WE / DTC144WUA / DTC144WKA / DTC144WSA

●Features

1）Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors.
2）The bias resistors consist of thin-film resistors with complete isolation to allow negative biasing of the input, and parasitic effects are almost completely eliminated.
3）Only the on / off conditions need to be set for operation, making device design easy.
4）Higher mounting densities can be achieved.

●Circuit schematic



●Absolute maximum ratings（Ta=25℃）

Parameter		Symbol	Limits	Unit
Supply voltage		Vcc	50	V
Input voltage		VI	−10～+40	V
Output current		Io	30	mA
		IC(Max.)	100	
Power dissipation	DTC144WE	Pd	150	mW
	DTC144WUA / DTC144WKA		200	
	DTC144WSA		300	
Junction temperature		Tj	150	℃
Storage temperature		Tstg	−55～+150	℃

●Package, marking, and packaging specifications

Part No.	DTC144WE	DTC144WUA	DTC144WKA	DTC144WSA
Package	EMT3	UMT3	SMT3	SPT
Marking	86	86	86	—
Packaging code	TL	T106	T146	TP
Basic ordering unit (pieces)	3000	3000	3000	5000

●Electrical characteristics（Ta=25℃）

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	VI(off)	—	—	0.8	V	Vcc=5V , Io=100 μA
	VI(on)	4	—	—		Vo=0.3V , Io=2mA
Output voltage	VO(on)	—	0.1	0.3	V	Io=10mA , II=0.5mA
Input current	II	—	—	0.16	mA	VI=5V
Output current	IO(off)	—	—	0.5	μA	Vcc=50V , VI=0V
DC current gain	GI	56	—	—	—	Io=5mA , Vo=5V
Input resistance	R1	32.9	47	61.1	kΩ	—
Resistance ratio	R2/R1	0.37	0.47	0.57	—	—
Transition frequency	fT	—	250	—	MHz	VCE=10V , IE=−5mA , f=100MHz *

* Transition frequency of the device.

(94S-701-C144W)