

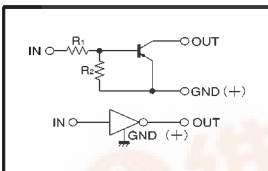
Digital transistors (built-in resistors)

DTA114WE / DTA114WUA / DTA114WKA / DTA114WSA

●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°C)

Parameter	Symbol	Limits	Unit
Supply voltage	V _{CC}	-50	V
Input voltage	V _I	-30 ~ +10	V
Output current	I _O	-100	mA
	I _{C(MAX.)}	-100	
Power dissipation	P _d	150	mW
		200	
		300	
Junction temperature	T _J	150	°C
Storage temperature	T _{stg}	-55 ~ +150	°C

●Package, marking, and packaging specifications

Part No.	DTA114WE	DTA114WUA	DTA114WKA	DTA114WSA
Package	EMT3	UMT3	SMT3	SPT
Marking	74	74	74	—
Packaging code	TL	T106	T146	TP
Basic ordering unit (pieces)	3000	3000	3000	5000

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	V _{I(on)}	—	—	-0.8	V	V _{CC} =-50V, I _O =-100 μA
	V _{I(off)}	-3	—	—		V _O =-0.3V, I _O =-2mA
Output voltage	V _{O(on)}	—	-0.1	-0.3	V	I _O =-10mA, I _I =-0.5mA
Input current	I _I	—	-0.88	mA		V _I =-5V
Output current	I _{O(off)}	—	-0.5	μA		V _{CC} =-50V, V _I =0V
DC current gain	G _I	24	—	—		I _O =-10mA, V _O =-5V
Input resistance	R _I	7	10	13	kΩ	—
Resistance ratio	R ₂ /R ₁	0.37	0.47	0.57	—	—
Transition frequency	f _T	—	250	—	MHz	V _{CE} =-10V, I _E =5mA, f=100MHz *

* Transition frequency of the device.

(94S-516-A114W)

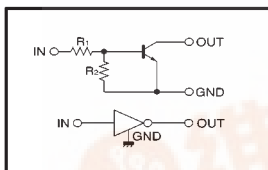
Digital transistors (built-in resistors)

DTC114WE / DTC114WUA / DTC114WKA / DTC114WSA

●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°C)

Parameter	Symbol	Limits	Unit
Supply voltage	V _{CC}	50	V
Input voltage	V _I	-10 ~ +30	V
Output current	I _O	100	mA
	I _{C(MAX.)}	100	
Power dissipation	P _d	150	mW
		200	
		300	
Junction temperature	T _J	150	°C
Storage temperature	T _{stg}	-55 ~ +150	°C

●Package, marking, and packaging specifications

Part No.	DTC114WE	DTC114WUA	DTC114WKA	DTC114WSA
Package	EMT3	UMT3	SMT3	SPT
Marking	84	84	84	—
Packaging code	TL	T106	T146	TP
Basic ordering unit (pieces)	3000	3000	3000	5000

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	V _{I(on)}	—	—	0.8	V	V _{CC} =5V, I _O =100 μA
	V _{I(off)}	3	—	—		V _O =0.3V, I _O =2mA
Output voltage	V _{O(on)}	—	0.1	0.3	V	I _O =10mA, I _I =0.5mA
Input current	I _I	—	0.88	mA		V _I =5V
Output current	I _{O(off)}	—	0.5	μA		V _{CC} =50V, V _I =0V
DC current gain	G _I	24	—	—		I _O =10mA, V _O =5V
Input resistance	R _I	7	10	13	kΩ	—
Resistance ratio	R ₂ /R ₁	0.37	0.47	0.57	—	—
Transition frequency	f _T	—	250	—	MHz	V _{CE} =10V, I _E =-5mA, f=100MHz *

* Transition frequency of the device.

(94S-635-C114W)