

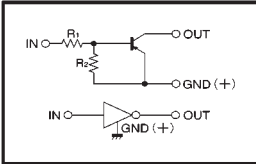
Digital transistor (built-in resistors)

DTA144VUA / DTA144VKA / DTA144VSA

●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	-40~+15	V
Output current	I _O	-30	mA
	I _{C(Max.)}	-10	
Power dissipation	Pd	200	mW
		300	
Junction temperature	T _J	150	°C
Storage temperature	T _{stg}	-55~+150	°C

●Package, marking, and packaging specifications

Part No.	DTA144VUA	DTA144VKA	DTA144VSA
Package	UMT3	SMT3	SPT
Marking	E56	E56	—
Packaging code	T106	T146	TP
Basic ordering unit (pieces)	3000	3000	5000

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	V _{I(off)}	—	—	-1	V	V _{CC} =-5V, I _O =-100 μA
	V _{I(on)}	-5	—	—	V	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	—	—	-0.16	mA	V _I =-5V
Output current	I _{O(off)}	—	—	-0.5	μA	V _{CC} =-50V, V _I =0V
DC current gain	G _I	33	—	—	—	I _O =-5mA, V _O =-5V
Input resistance	R _I	32.9	47	61.1	kΩ	—
Resistance ratio	R ₂ /R ₁	0.17	0.21	0.26	—	—
Transition frequency	f _T	—	250	—	MHz	V _{CE} =-10V, I _E =5mA, f=100MHz *

* Transition frequency of the device.

(94S-576-A144V)

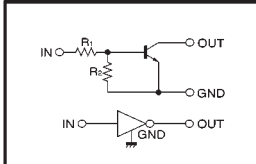
Digital transistor (built-in resistors)

DTC144VUA / DTC144VKA / DTC144VSA

●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	-15~+40	V
Output current	I _O	30	mA
	I _{C(Max.)}	100	
Power dissipation	Pd	200	mW
		300	
Junction temperature	T _J	150	°C
Storage temperature	T _{stg}	-55~+150	°C

●Package, marking, and packaging specifications

Part No.	DTC144VUA	DTC144VKA	DTC144VSA
Package	UMT3	SMT3	SPT
Marking	E66	E66	—
Packaging code	T106	T146	TP
Basic ordering unit (pieces)	3000	3000	5000

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	V _{I(off)}	—	—	1	V	V _{CC} =5V, I _O =100 μA
	V _{I(on)}	5	—	—	V	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	—	—	0.16	mA	V _I =5V
Output current	I _{O(off)}	—	—	0.5	μA	V _{CC} =50V, V _I =0V
DC current gain	G _I	33	—	—	—	I _O =5mA, V _O =5V
Input resistance	R _I	32.9	47	61.1	kΩ	—
Resistance ratio	R ₂ /R ₁	0.17	0.21	0.26	—	—
Transition frequency	f _T	—	250	—	MHz	V _{CE} =10V, I _E =-5mA, f=100MHz *

* Transition frequency of the device.

(94S-698-C144V)