

**DTA144EM / DTA144EE / DTA144EUA /
DTA144EKA / DTA144ESA**

- 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 device design easy.

The top diagram shows a PNP transistor circuit. The input terminal 'IN' is connected to a resistor R_1 , which is connected to the base of the transistor. A second resistor R_2 connects the base to the emitter. The emitter is connected to a terminal labeled 'GND (+)'. The collector is connected to an output terminal labeled 'OUT'.

The bottom diagram shows an inverter circuit. The input terminal 'IN' is connected to the input of a triangular inverter symbol. The output of the inverter is connected to an output terminal labeled 'OUT'. The inverter is grounded at a terminal labeled 'GND (+)'.

PNP digital transistor (Built-in resistor type)

DTA144EM ROHM : VMT3 Abbreviated symbol : 16 (1) IN (2) GND (3) OUT	DTA144EE ROHM : EMT3 Abbreviated symbol : 16 (1) GND (2) IN (3) OUT
DTA144EUA ROHM : UMT3 EIAJ : SC-70 All terminals have same dimensions Abbreviated symbol : 16 (1) GND (2) IN (3) OUT	DTA144EKA ROHM : SMT3 EIAJ : SC-59 All terminals have same dimensions Abbreviated symbol : 16 (1) GND (2) IN (3) OUT
DTA144ESA ROHM : SPT EIAJ : SC-72 (1) GND (2) OUT (3) IN	

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Transistors

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits(DTA144E□)					Unit
		M	E	UA	KA	SA	
Supply voltage	V _{CC}	-50					V
Input voltage	V _{IN}	-40~+10					V
Output current	I _O	-30					mA
	I _{C(Max.)}	-100					
Power dissipation	P _d	150		200		300	mW
Junction temperature	T _J	150					°C
Storage temperature	T _{stg}	-55~+150					°C

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	V _{I(off)}	-	-	-0.5	V	V _{CC} =-5V, I _O =-100μA
	V _{I(on)}	-3.0	-	-		V _O =-0.3V, I _O =-2mA
Output voltage	V _{O(on)}	-	-0.1	-0.3	V	I _O /I _I =-10mA/-0.5mA
Input current	I _I	-	-	-0.18	mA	V _I =-5V
Output current	I _{O(off)}	-	-	-0.5	μA	V _{CC} =-50V, V _I =0V
DC current gain	G _I	68	-	-	-	V _O =-5V, I _O =-5mA
Input resistance	R _I	32.9	47	61.1	kΩ	-
Resistance ratio	R ₂ /R ₁	0.8	1	1.2	-	-
Transition frequency	f _T	-	250	-	MHz	V _{CE} =-10V, I _E =5mA, f=100MHz *

* Transition frequency of the device

●Packaging specifications

Type	Package	VMT3	EMT3	UMT3	SMT3	SPT
	Packaging type	Taping	Taping	Taping	Taping	Taping
	Code	T2L	TL	T106	T146	TP
	Basic ordering unit (pieces)	8000	3000	3000	3000	5000
DTA144EM		○	-	-	-	-
DTA144EE		-	○	-	-	-
DTA144EUA		-	-	○	-	-
DTA144EKA		-	-	-	○	-
DTA144ESA		-	-	-	-	○