

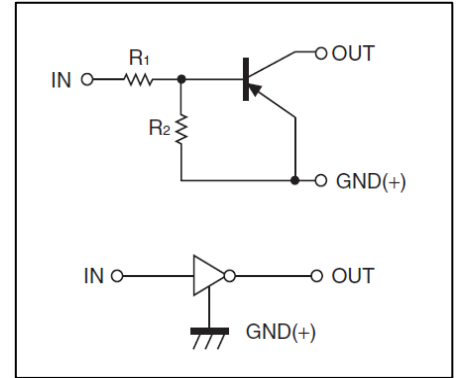
## Digital Transistors (Built-in Resistors)

DIGITAL TRANSISTOR (PNP)

### • Equivalent Circuit

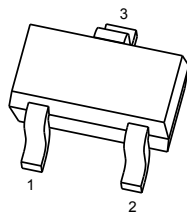
### FEATURES

- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors(see equivalent circuit)
- 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
- Only the on/off conditions need to be set for operation, making device design easy



### PIN CONNENCTIONS and MARKING

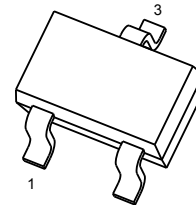
DTA124EE



SOT-523

1. IN
2. GND
3. OUT

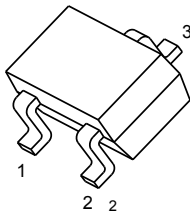
DTA124EUA



SOT-323

1. IN
2. GND
3. OUT

DTA124EKA



SOT-23-3L

1. IN
2. GND
3. OUT

**ORDERING INFORMATION**

Part Number	MARKING <sup>(1)</sup>	Package	Packing Method	Pack Quantity
DTA124EE	15	SOT-523	Reel	3000pcs/Reel
DTA124EUA	15	SOT-323	Reel	3000pcs/Reel
DTA124EKA	15	SOT-23-3L	Reel	3000pcs/Reel

Notes: (1). Solid dot = Green molding compound device, if none, the normal device.  
(2). XXX=Code

**MAXIMUM RATINGS(Ta=25°C unless otherwise noted)**

Symbol	Parameter	Limits(DTA124E□)			Unit
		E	UA	KA	
V <sub>CC</sub>	Supply Voltage	-50			V
V <sub>IN</sub>	Input Voltage	-40~+10			V
I <sub>O</sub>	Output Current	-30			mA
I <sub>CM</sub>	Peak Collector Current	-100			mA
P <sub>D</sub>	Power Dissipation	150	200	200	mW
T <sub>J</sub>	Junction Temperature	150			°C
T <sub>stg</sub>	Storage Temperature	-55~+150			°C

**ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)**

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Input voltage	V <sub>I(off)</sub>	V <sub>CC</sub> =-5V, I <sub>O</sub> =-100μA	-0.5			V
	V <sub>I(on)</sub>	V <sub>O</sub> =-0.2V, I <sub>O</sub> =-5 mA			-3	V
Output voltage	V <sub>O(on)</sub>	I <sub>O</sub> /I <sub>I</sub> =-10mA/-0.5mA			-0.3	V
Input current	I <sub>I</sub>	V <sub>I</sub> =-5V			-0.36	mA
Output current	I <sub>O(off)</sub>	V <sub>CC</sub> =-50V, V <sub>I</sub> =0			-0.5	μA
DC current gain	G <sub>I</sub>	V <sub>O</sub> =-5V, I <sub>O</sub> =-5mA	56			
Input resistance	R <sub>1</sub>		15.4	22	28.6	kΩ
Resistance ratio	R <sub>2</sub> /R <sub>1</sub>		0.8	1	1.2	
Transition frequency	f <sub>T</sub>	V <sub>O</sub> =-10V, I <sub>O</sub> =-5mA, f=100MHz		250		MHz

## Typical Characteristics

