



## Digital Transistors (Built-in Resistors)

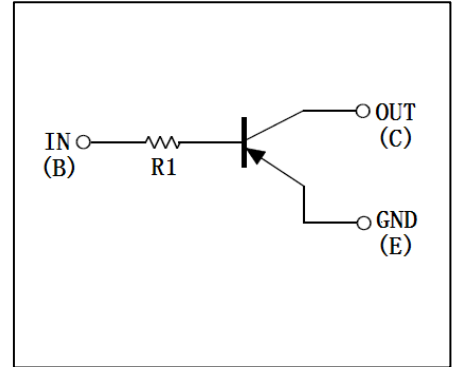
### DTA114TM/DTA114TE/DTA114TUA DTA114TKA /DTA114TCA/DTA114TSA

DIGITAL TRANSISTOR (PNP)

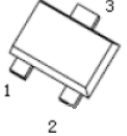
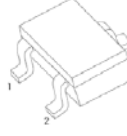
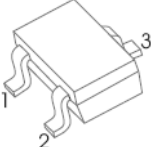
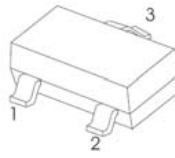
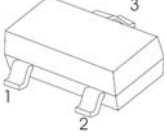

#### FEATURES

- 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

#### • Equivalent Circuit



#### PIN CONNENCTIONS and MARKING

<p><b>DTA114TM</b></p>  <p><b>SOT-723</b></p> <p>1. IN 2. GND 3. OUT</p> <p><b>MARKING:94</b></p>	<p><b>DTA114TE</b></p>  <p><b>SOT-523</b></p> <p>1. IN 2. GND 3. OUT</p> <p><b>MARKING:94</b></p>
<p><b>DTA114TUA</b></p>  <p><b>SOT-323</b></p> <p>1. IN 2. GND 3. OUT</p> <p><b>MARKING:94</b></p>	<p><b>DTA114TKA</b></p>  <p><b>SOT-23-3L</b></p> <p>1. IN 2. GND 3. OUT</p> <p><b>MARKING:94</b></p>
<p><b>DTA114TCA</b></p>  <p><b>SOT-23</b></p> <p>1. IN 2. GND 3. OUT</p> <p><b>MARKING:94</b></p>	<p><b>DTA114TSA</b></p>  <p><b>TO-92S</b></p> <p>1. GND 2. OUT 3. IN</p>

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

Symbol	Parameter	Limits(DTA114T□)						Unit
		M	E	UA	KA	CA	SA	
V <sub>CBO</sub>	Collector-Base Voltage	-50						V
V <sub>CEO</sub>	Collector-Emitter Voltage	-50						V
V <sub>EBO</sub>	Emitter-Base Voltage	-5						V
I <sub>C</sub>	Collector Current	-100						mA
P <sub>D</sub>	Power Dissipation	100	150	200	200	200	300	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
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =-50μA, I <sub>E</sub> =0	-50			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =-1mA, I <sub>B</sub> =0	-50			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =-50μA, I <sub>C</sub> =0	-5			V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =-50V, I <sub>E</sub> =0			-0.5	μA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =-4V, I <sub>C</sub> =0			-0.5	μA
DC current gain	h <sub>FE</sub>	V <sub>CE</sub> =-5V, I <sub>C</sub> =-1mA	100	250	600	
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =-10mA, I <sub>B</sub> =-1mA			-0.3	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> =-10V, I <sub>E</sub> =5mA, f=100MHz		250		MHz
Input resistor	R <sub>1</sub>		7	10	13	kΩ

# Typical Characteristics

# DTA114TXX

