



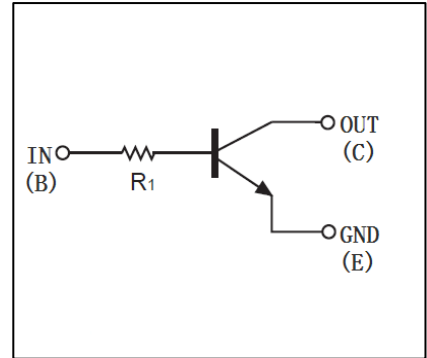
# DTC114TE/DTC114TUA DTC114TKA /DTC114TCA

DIGITAL TRANSISTOR (NPN)

## FEATURES

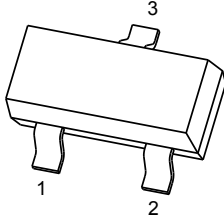
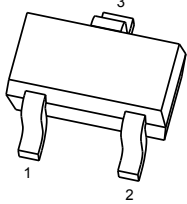
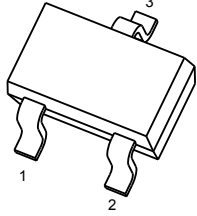
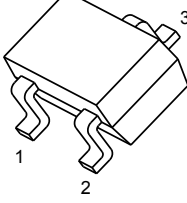
- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors(see equivalent circuit)
- The bias resistors consist of thin-film resistors with complete isolation to allow negative biasing of the input.They also have the advantage of almost completely eliminating parasitic effects
- Only the on/off conditions need to be set for operation, making device design easy

## • Equivalent Circuit



## MARKING:04

## PIN CONNENCTIONS and MARKING

<p><b>DTC114TCA</b></p>  <p><b>SOT-23</b></p> <p>1. IN 2. GND 3. OUT</p>	<p><b>DTC114TE</b></p>  <p><b>SOT-523</b></p> <p>1. IN 2. GND 3. OUT</p>
<p><b>DTC114TUA</b></p>  <p><b>SOT-323</b></p> <p>1. IN 2. GND 3. OUT</p>	<p><b>DTC114TKA</b></p>  <p><b>SOT-23-3L</b></p> <p>1. IN 2. GND 3. OUT</p>



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

Symbol	Parameter	Limits(DTC114T□)				Unit
		E	UA	KA	CA	
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 -Continuous	100				mA
P <sub>D</sub>	Power Dissipation	150	200	200	200	mW
T <sub>J</sub> , T <sub>stg</sub>	Operation Junction and Storage Temperature Range	-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
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =10mA, I <sub>B</sub> =1mA			0.3	V
DC current gain	h <sub>FE</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =1mA	100			
Input resistor	R <sub>1</sub>		7	10	13	kΩ
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>E</sub> =-5mA, f=100MHz		250		MHz



## Typical Characteristics

