



TIGER ELECTRONIC CO.,LTD

Digital transistors (built-in resistors)

DTC114YE/DTC114YUA

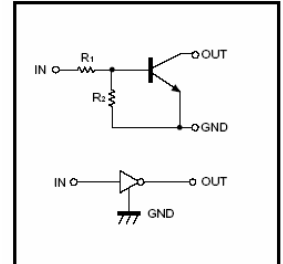
DTC114YKA/DTC114YSA/DTC114YCA

DIGITAL TRANSISTOR (NPN)

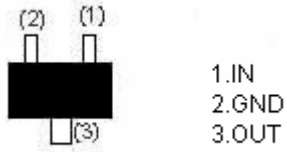

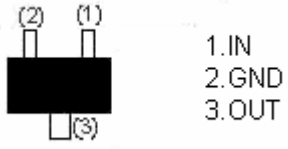
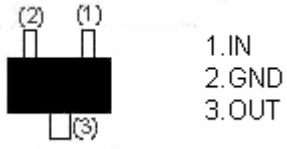
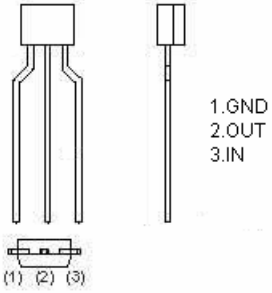
FEATURES

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 negative 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

●Equivalent circuit



PIN CONNENCTIONS AND MARKING

<p>DTC114YE</p>  <p>1.IN 2.GND 3.OUT</p> <p>SOT-523 Abbreviated symbol: 64</p>	<p>DTC114YUA</p>  <p>1.IN 2.GND 3.OUT</p> <p>SOT-323 Abbreviated symbol: 64</p>
<p>DTC114YKA</p>  <p>1.IN 2.GND 3.OUT</p> <p>SOT-23-3L Abbreviated symbol: 64</p>	<p>DTC114YCA</p>  <p>1.IN 2.GND 3.OUT</p> <p>SOT-23 Abbreviated symbol: 64</p>
<p>DTC114YSA</p>  <p>1.GND 2.OUT 3.IN</p> <p>TO-92S</p>	

Absolute maximum ratings(Ta=25°C)

Parameter	Symbol	Limits (DTC114Y□)					Unit
		E	UA	KA	CA	SA	
Supply voltage	V _{CC}	50					V
Input voltage	V _{IN}	-6~+40					V
Output current	I _o	70					mA
	I _{C(Max.)}	100					mA
Power dissipation	P _C	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)}	0.3			V	V _{CC} =5V ,I _o =100μA
	V _{I(on)}			1.4		V _O =0.3V ,I _o =1mA
Output voltage	V _{O(on)}			0.3	V	I _o /I _i =5mA/0.25mA
Input current	I _i			0.88	mA	V _I =5V
Output current	I _{o(off)}			0.5	μA	V _{CC} =50V ,V _I =0
DC current gain	G _I	68				V _O =5V ,I _o =5mA
Input resistance	R ₁	7	10	13	KΩ	
Resistance ratio	R ₂ /R ₁	3.7	4.7	5.7		
Transition frequency	f _T		250		MHz	V _O =10V ,I _o =5mA,f=100MHz