



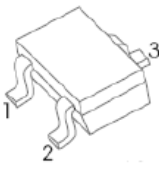
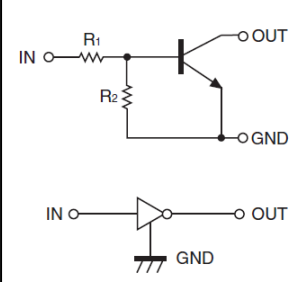
Digital Transistors (Built-in Resistors)

DTD113ZUA 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

PIN CONNENCTIONS, MARKING and EQUIVALENT CIRCUIT

<p>DTD113ZUA</p>  <p>MARKING:G21</p>	<p>SOT-23</p> <p>1. IN 2. GND 3. OUT</p>	<p>Equivalent Circuit</p> 
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MAXIMUM RATINGS(Ta=25°C unless otherwise noted)

Symbol	Parameter	Limit	Unit
V _{CC}	Supply Voltage	50	V
V _{IN}	Input Voltage	-5~+10	V
I _O	Output Current	500	mA
P _D	Power Dissipation	200	mW
T _j	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55~+150	°C

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

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Input voltage	V _{I(off)}	V _{CC} =5V, I _O =100μA	0.3			V
	V _{I(on)}	V _O = 0.3V, I _O =20mA			3	V
Output voltage	V _{O(on)}	I _O /I _I =50mA/2.5mA		0.1	0.3	V
Input current	I _I	V _I =5V			7.2	mA
Output current	I _{O(off)}	V _{CC} =50V, V _I =0V			0.5	μA
DC current gain	G _I	V _O =5V, I _O =50mA	56			
Input resistance	R ₁		0.7	1	1.3	kΩ
Resistance ratio	R ₂ /R ₁		8	10	12	
Transition frequency	f _T	V _O =10V , I _O =5mA, f=100MHz		200		MHz