

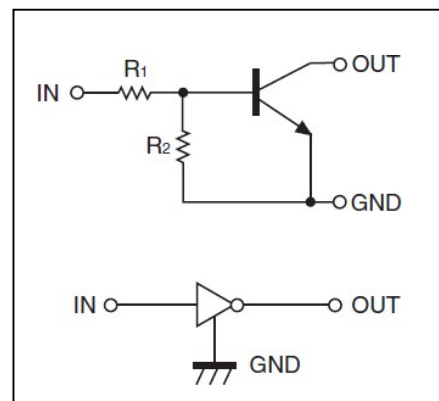
DTC143ZE/DTC143ZUA **DTC143ZKA /DTC143ZCA**

DIGITAL TRANSISTOR (NPN)

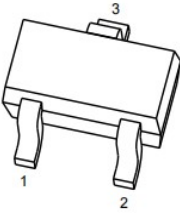
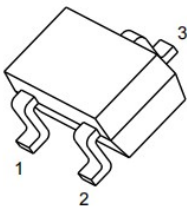
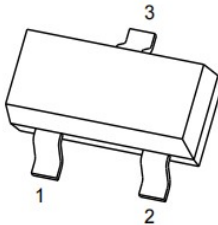
FEATURES

- 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



PIN CONNENCTIONS and MARKING

DTC143ZE  SOT-523 1. IN 2. GND 3. OUT	DTC143ZUA  SOT-323 1. IN 2. GND 3. OUT
DTC143ZKA  SOT-23-3L 1. IN 2. GND 3. OUT	DTC143ZCA  SOT-23 1. IN 2. GND 3. OUT

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

Symbol	Parameter	Limits(DTC143Z□)				Unit
		E	UA	CA	KA	
V _{CC}	Supply Voltage	50				V
V _{IN}	Input Voltage	-5~+30				V
I _O	Output Current	100				mA
P _D	Power Dissipation	150	200	200	200	mW
T _J , T _{stg}	Operation Junction and Storage Temperature Range	-55~+150				°C

ELECTRICAL CHARACTERISTICS (Ta=25 unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Input voltage	V _I (off)	V _{CC} =5V, I _O =100μA	0.5			V
	V _I (on)	V _O =0.3V, I _O =5mA			1.3	V
Output voltage	V _O (on)	I _O /I _I =5mA/0.25mA		0.1	0.3	V
Input current	I _I	V _I =5V			1.8	mA
Output current	I _O (off)	V _{CC} =50V, V _I =0			0.5	μA
DC current gain	G _I	V _O =5V, I _O =10mA	80			
Input resistance	R _I		3.29	4.7	6.11	kΩ
Resistance ratio	R ₂ /R ₁		8	10	12	
Collector-Emitter Saturation Voltage	V _{CE} (sat)	I _C =10mA, I _B =1mA		0.1	0.25	v
DC Current Gain	H _{FE}	V _{CE} =10V, I _C =5mA	85		250	
Transition frequency	f _T	V _O =10V, I _O =5mA, f=100MH		250		MHz

Typical Characteristics

