

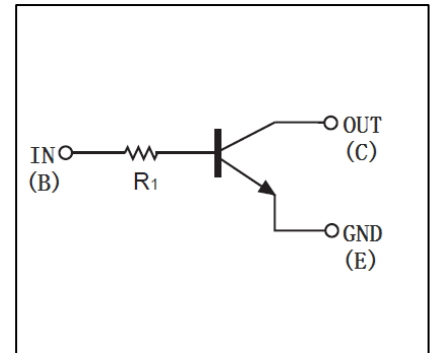
Digital Transistors (Built-in Resistors)

• Equivalent Circuit DIGITAL TRANSISTOR (NPN)

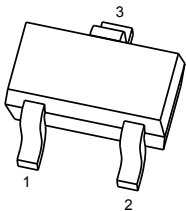
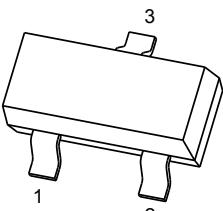
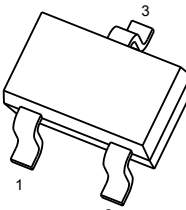
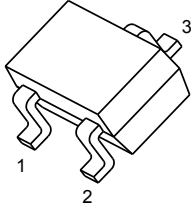
FEATURES

- 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

DTC143TE  SOT-523 1. IN 2. GND 3. OUT	DTC143TCA  SOT-23 1. IN 2. GND 3. OUT
DTC143TUA  SOT-323 1. IN 2. GND 3. OUT	DTC143TKA  SOT-23-3L 1. IN 2. GND 3. OUT

ORDERING INFORMATION

Part Number	MARKING	Package	Packing Method	Pack Quantity
DTC143TE	03	SOT-523	Reel	3000pcs/Reel
DTC143TUA	03	SOT-323	Reel	3000pcs/Reel
DTC143TKA	03	SOT-23-3L	Reel	3000pcs/Reel
DTC143TCA	03	SOT-23	Reel	3000pcs/Reel

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

Symbol	Parameter	Limits(DTC143T□)				Unit
		E	UA	CA	KA	
V _{CBO}	Collector-Base Voltage	50				V
V _{CEO}	Collector-Emitter Voltage	50				V
V _{EBO}	Emitter-Base Voltage	5				V
I _C	Collector Current	100				mA
P _D	Power Dissipation	150	200	200	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
Collector-base breakdown voltage	V _{(BR)CBO}	I _C =50μA, I _E =0	50			V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C =1mA, I _B =0	50			V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =50μA, I _C =0	5			V
Collector cut-off current	I _{CBO}	V _{CB} =50V, I _E =0			0.5	μA
Emitter cut-off current	I _{EBO}	V _{EB} =4V, I _C =0			0.5	μA
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =5mA, I _B =0.25mA			0.3	V
DC current gain	h _{FE}	V _{CE} =5V, I _C =1mA	100		600	
Input resistor	R ₁		3.29	4.7	6.11	kΩ
Transition frequency	f _T	V _{CE} =10V, I _E =-5mA, f=100MHz		250		MHz

Typical Characteristics

