



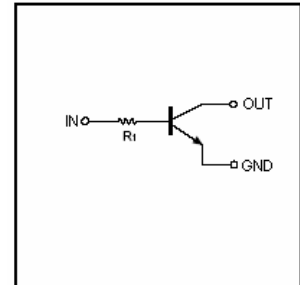
Digital transistors (built-in resistors)

DTC114TE/DTC114TUA

DTC114TKA/DTC114TCA /DTC114TSA

DIGITAL TRANSISTOR (NPN)

equivalent circuit



FEATURES

- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors
- The bias resistors consist of thin-film resistors with complete isolation to 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, marking device design easy

PIN CONNECTIONS AND MARKING

DTC114TE 1.IN 2.GND 3.OUT SOT-523 Abbreviated symbol: 04	DTC114TUA 1.IN 2.GND 3.OUT SOT-323 Abbreviated symbol: 04
DTC114TKA 1.IN 2.GND 3.OUT SOT-23-3L Abbreviated symbol: 04	DTC114TCA 1.IN 2.GND 3.OUT SOT-23 Abbreviated symbol: 04
DTC114TSA 1.GND 2.OUT 3.IN TO-92S	

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Symbol	Parameter	Limits(DTC114T□)					Units
		E	UA	KA	CA	SA	
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 -Continuous	100					mA
P _D	Power Dissipation	150	200			300	mW
T _J	Junction Temperature	150					°C
T _{stg}	Storage Temperature	-55~+150					°C

ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

Parameter	Symbol	Test 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
DC current gain	h _{FE}	V _{CE} =5V, I _C =1mA	100	300	600	
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =10mA, I _B =1mA			0.3	V
Transition frequency	f _T	V _{CE} =10V, I _E =-5mA, f=100MHz	250			MHz
Input resistor	R ₁		7	10	13	KΩ