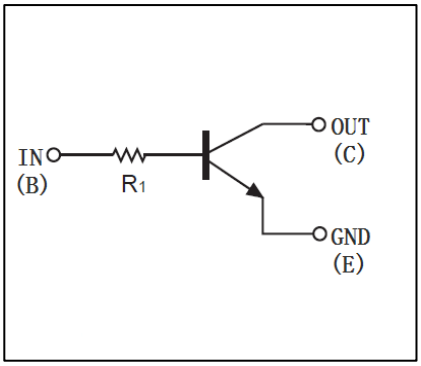
DTC114TE/DTC114TUA
DTC114TKA /DTC114TCA

DIGITAL TRANSISTOR (NPN)

• Equivalent Circuit

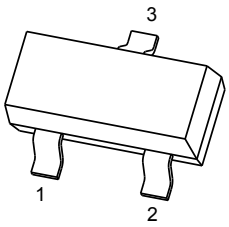
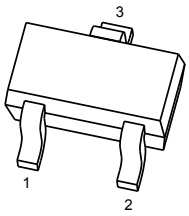
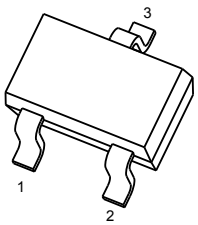
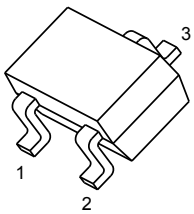


FEATURES

- 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

MARKING:04

PIN CONNENCTIONS and MARKING

DTC114TCA		**SOT-23** 1. IN 2. GND 3. OUT	**DTC114TE**		**SOT-523** 1. IN 2. GND 3. OUT
DTC114TUA		**SOT-323** 1. IN 2. GND 3. OUT	**DTC114TKA**		**SOT-23-3L** 1. IN 2. GND 3. OUT

MAXIMUM RATINGS(Ta=25℃ unless otherwise noted)

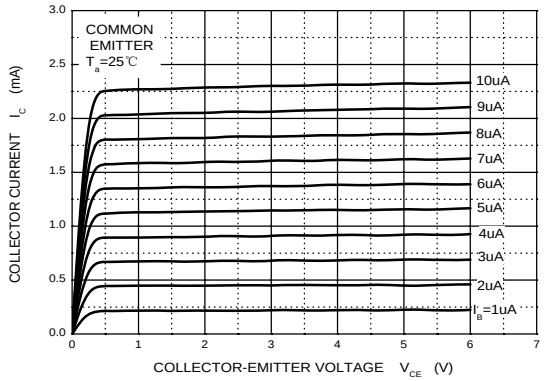
Symbol	Parameter	Limits(DTC114T□)				Unit
		E	UA	KA	CA	
V_{CBO}	Collector-Base Voltage	50				V
V_{CEO}	Collector-Emitter Voltage	50				V
V_{EBO}	Emitter-Base Voltage	5				V
I_C	Collector Current -Continuous	100				mA
P_D	Power Dissipation	150	200	200	200	mW
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55～+150				℃

ELECTRICAL CHARACTERISTICS (Ta=25℃ unless otherwise specified)

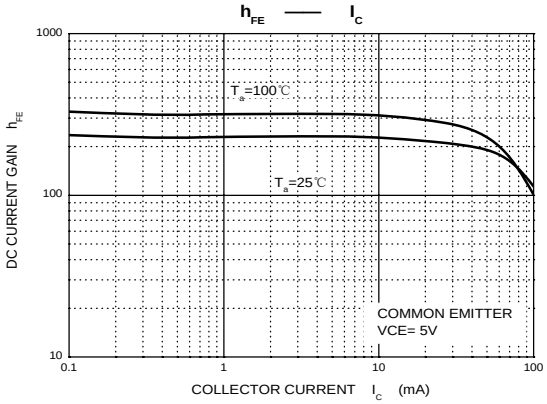
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	Ic=50μA,I_E=0	50			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	Ic=1mA,I_B=0	50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=50μA,I_C=0	5			V
Collector cut-off current	I_{CBO}	V_{CB}=50V,I_E=0			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=10mA,I_B=1mA			0.3	V
DC current gain	h_{FE}	V_{CE}=5V,I_C=1mA	100			
Input resistor	R_1		7	10	13	kΩ
Transition frequency	f_T	V_{CE}=10V,I_E=-5mA, f=100MHz		250		MHz

Typical Characteristics

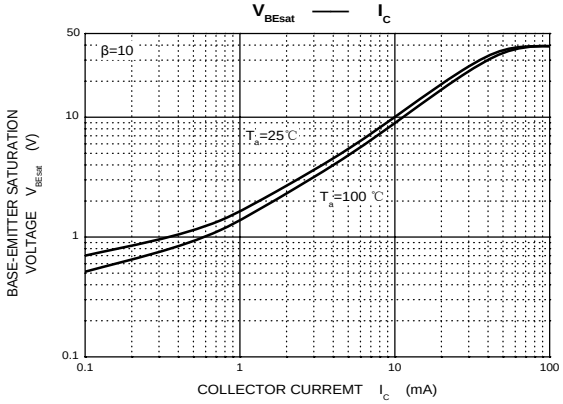
Static Characteristic



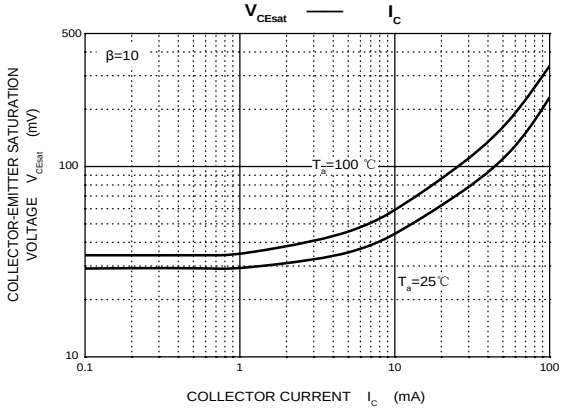
h_{FE} —— I_C



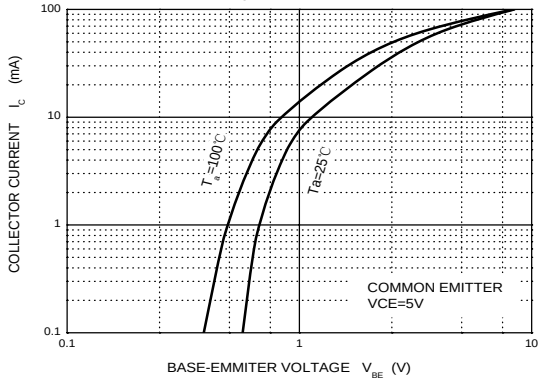
V_{BEsat} —— I_C



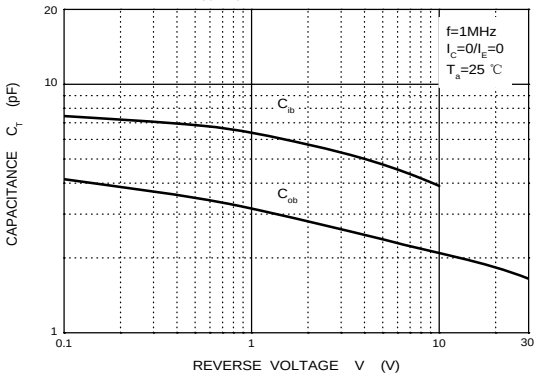
V_{CEsat} —— I_C



I_C —— V_{BE}



C_{ob}/C_{ib} —— V_{CB}/V_{EB}



P_D —— T_a