



Micro Commercial Components

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# DTC144TE

## 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

## Absolute Maximum Ratings

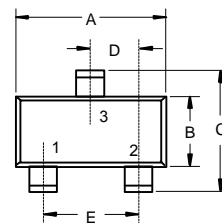
Parameter	Symbol	Value	Unit
Collector-Base Voltage	$V_{CBO}$	50	V
Collector-Emitter Voltage	$V_{CEO}$	50	V
Emitter-Base voltage	$V_{EBO}$	5	V
Collector Current-Continuous	$I_C$	100	mA
Collector Dissipation	$P_C$	150	mW
Junction Temperature	$T_J$	150	$^{\circ}C$
Storage Temperature Range	$T_{STG}$	-55~150	$^{\circ}C$

## Electrical Characteristics

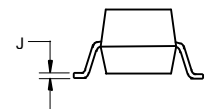
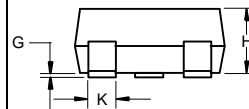
Sym	Parameter	Min	Typ	Max	Unit
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ( $I_C=50\mu A, I_E=0$ )	50	---	---	V
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage ( $I_C=1mA, I_B=0$ )	50	---	---	V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ( $I_E=50\mu A, I_C=0$ )	5	---	---	V
$I_{CBO}$	Collector Cut-off Current ( $V_{CB}=50V, I_E=0$ )	---	---	0.5	$\mu A$
$I_{EBO}$	Emitter Cut-off Current ( $V_{EB}=4V, I_C=0$ )	---	---	0.5	$\mu A$
$h_{FE}$	DC Current Gain ( $V_{CE}=5V, I_C=1mA$ )	100	300	600	---
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ( $I_C=10mA, I_B=1mA$ )	---	---	0.3	V
$R_1$	Input resistance	32.9	47	61.1	$K\Omega$
$f_T$	Transition Frequency ( $V_{CE}=10V, I_C=-5mA, f=100MHz$ )	---	250	---	MHz

## NPN Digital Transistor

### SOT-523



1. Base  
2. Emitter  
3. Collector



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.059	.067	1.50	1.70	
B	.030	.033	0.75	0.85	
C	.057	.069	1.45	1.75	
D	.020 Nominal		0.50Nominal		
E	.035	.043	0.90	1.10	
G	.000	.004	.000	.100	
H	.028	.031	.70	0.80	
J	.004	.008	.100	.200	
K	.010	.014	.25	.35	

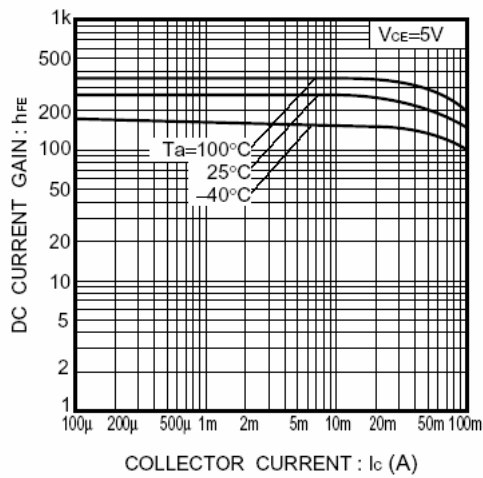


Fig.1 DC current gain vs. collector current

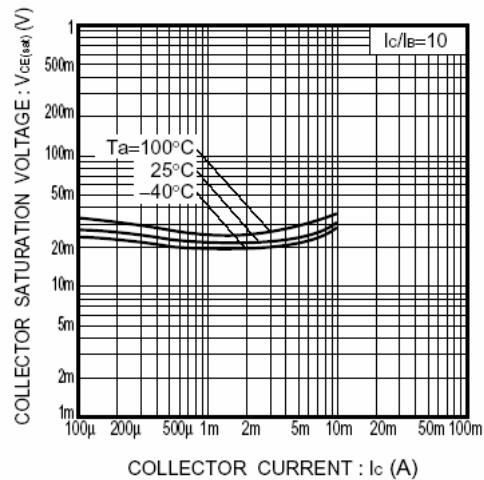


Fig.2 Collector-emitter saturation voltage vs. collector current

●Equivalent circuit

