DTC144TE

NPN Digital Transistor

Description

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 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.

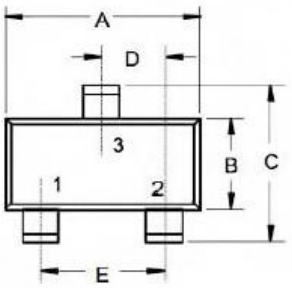
Mechanical Data

- Case: SOT-523 Molded plastic
- Epoxy: UL94V-O rate flame retardant

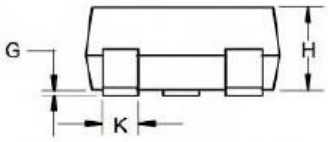
Packing & Order Information

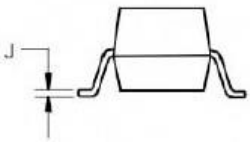
3,000/Reel

RoHS COMPLIANT



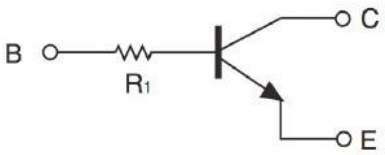
1. Base
2. Emitter
3. Collector





DIMENSIONS					
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	

Graphic symbol



Inner circuit R1=47kΩ

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Absolute maximum ratings (Ta=25°C)

Symbol	Parameter	DTC144TE	Unit
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	A
P_C	Collector Dissipation	150	W
Tj, Tstg	Junction and Storage Temperature	150	°C

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ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified						
Symbol	Parameter	Test Conditions	MIN	TYP	MAX	UNIT
$V_{(BR)CBO}$	Collector-base breakdown voltage	I_C = 50μA	50			V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	I_C = 1 mA	50			V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	I_E = 50μA	5			V
I_{CBO}	Collector cut-off current	V_{CB} = 50 V , I_E = 0			0.5	μA
I_{EBO}	Emitter cut-off current	V_{EB} = 4 V , I_C = 0			0.5	μA
$h_{FE(1)}$	DC current gain	V_{CE} = 5 V , I_C = 1 mA	100	300	600	
$V_{CE(sat)}$	Collector-emitter saturation voltage	I_C/I_B = 50 mA / 5 mA			0.3	V
R1	Input resistance	V_{CE} = -6 V, I_C = -20 mA	32.9	47	61.1	kΩ
f_T	Transition frequency	V_{CE} = 10 V , I_E = 5 mA f = 100MHz		250		MHz

■RATINGS AND CHARACTERISTIC CURVES

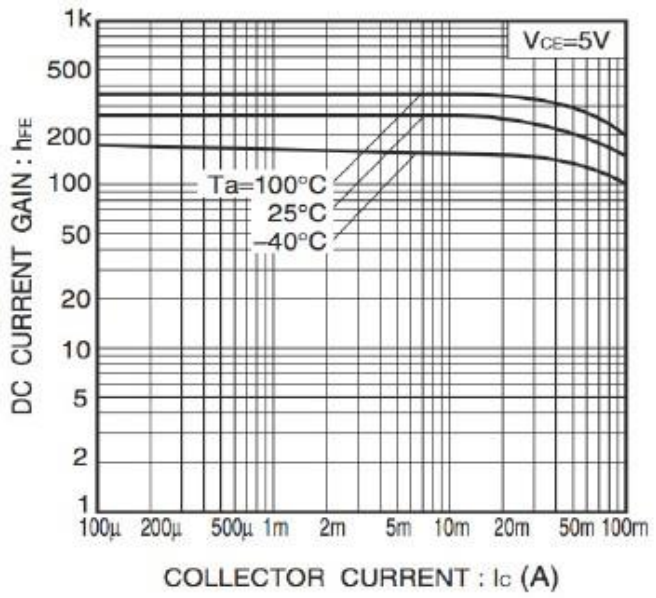

FIG.1 – DC CURRENT GAIN VS. COLLECTOR CURRENT

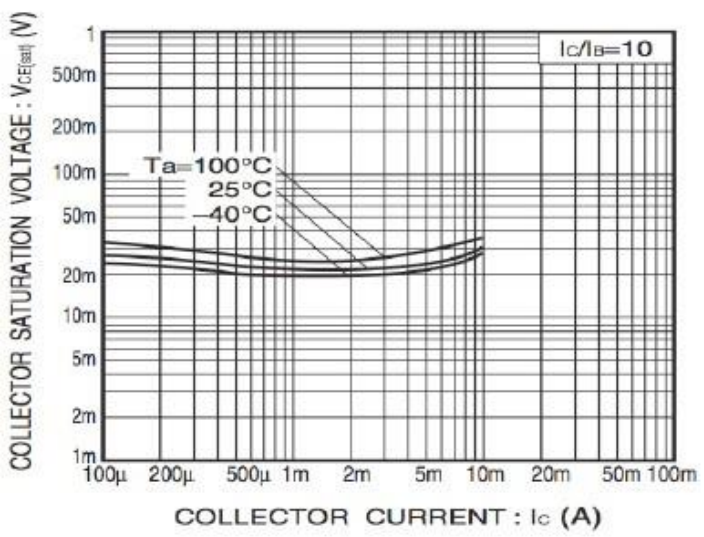

FIG.2 –COLLECTOR-EMITTER SATURATION VOLTAGEVS. COLLECTOR CURRENT

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