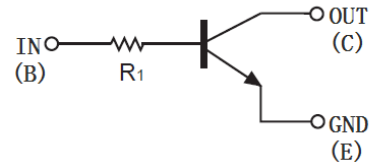




DTC143TM/DTC143TE/DTC143TUA DTC143TKA /DTC143TCA/DTC143TSA

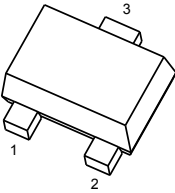
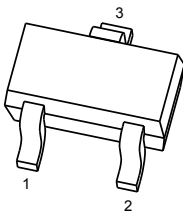
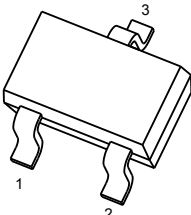
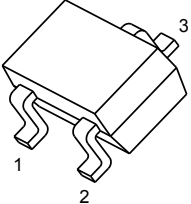
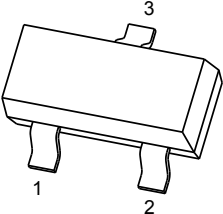
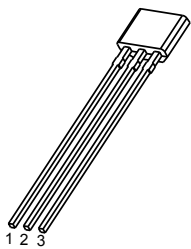
DIGITAL TRANSISTOR (NPN)



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

PIN CONNENCTIONS and MARKING

DTC143TM 	SOT-723 1. IN 2. GND 3. OUT	DTC143TE 	SOT-523 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
DTC143TCA 	SOT-23 1. IN 2. GND 3. OUT	DTC143TSA 	TO-92S 1. GND 2. OUT 3. IN



ORDERING INFORMATION

Part Number	MARKING	Package
DTC143TM	03	SOT-723
DTC143TE	03	SOT-523
DTC143TUA	03	SOT-323
DTC143TKA	03	SOT-23-3L
DTC143TCA	03	SOT-23
DTC143TSA	C143 T·XXX	TO-92S
DTC143TSA-TA	C143 T·XXX	TO-92S

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

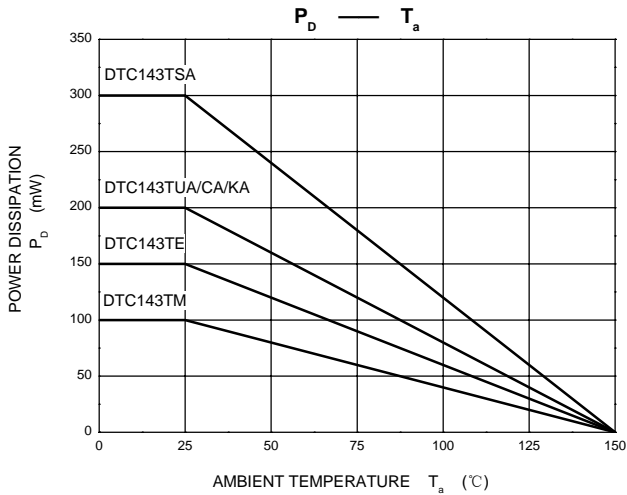
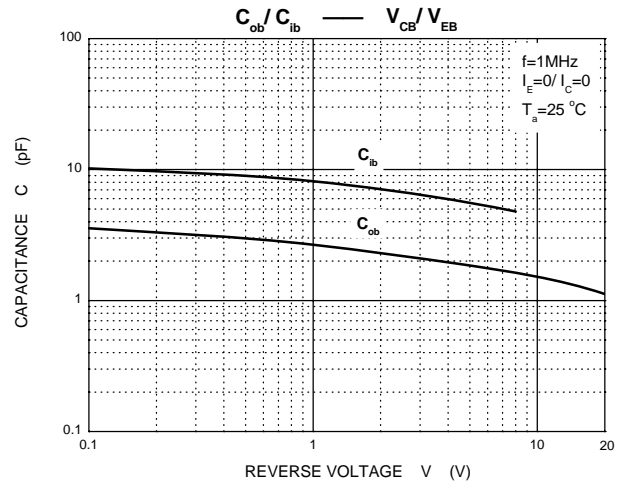
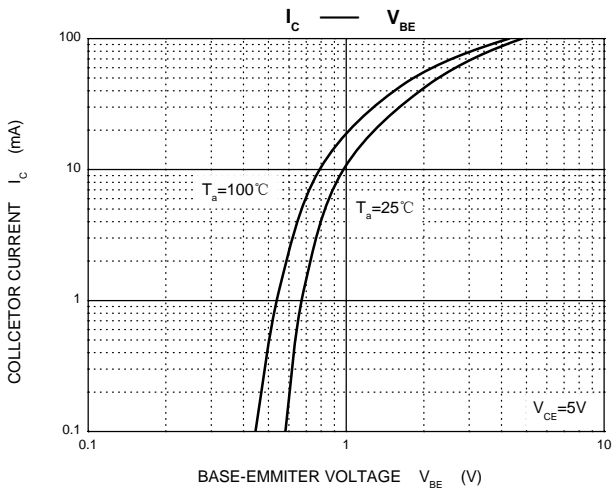
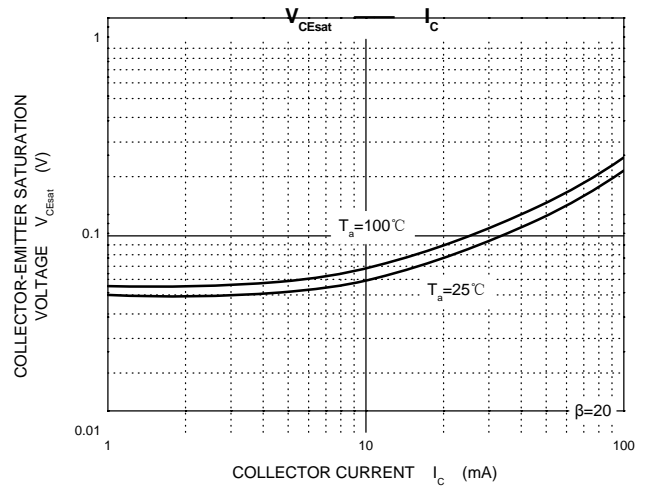
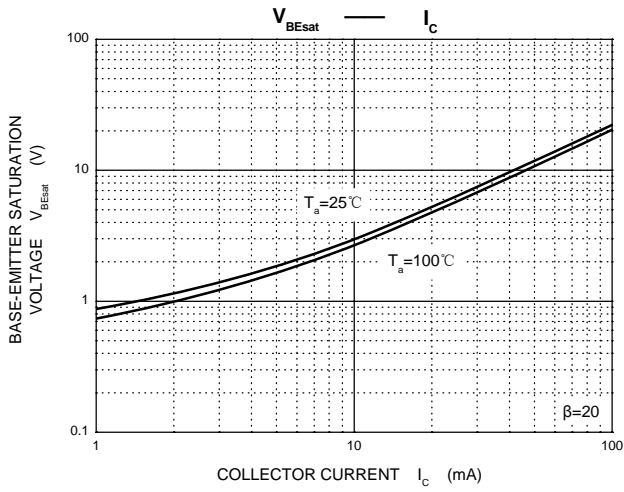
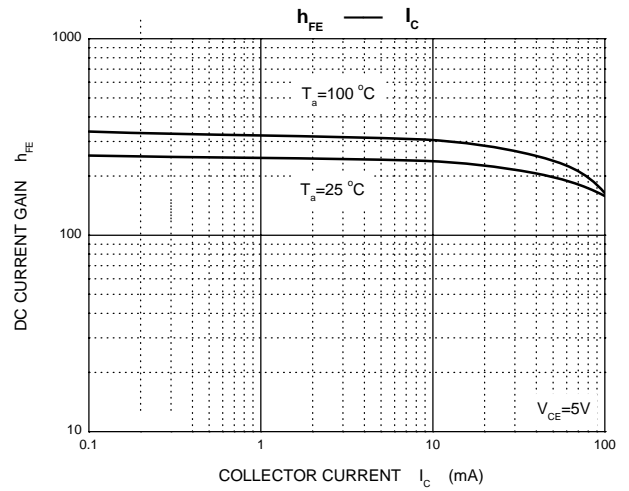
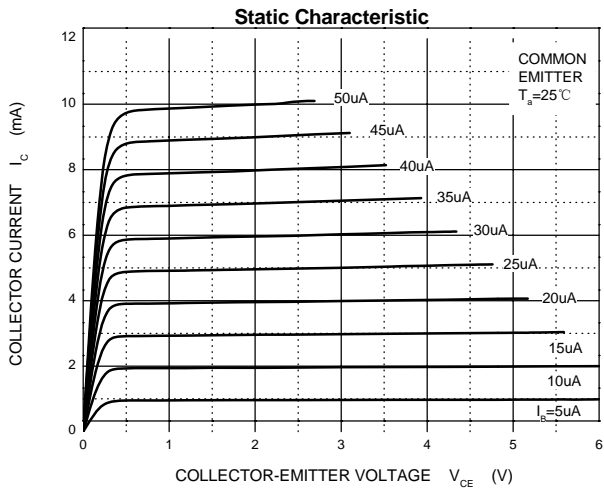
Symbol	Parameter	Limits(DTC143T□)						Unit
		M	E	UA	CA	KA	SA	
V _{CBO}	Collector-Base Voltage	50						V
V _{CEO}	Collector-Emitter Voltage	50						V
V _{EBO}	Emitter-Base Voltage	5						V
I _C	Collector Current	100						mA
P _D	Power Dissipation	100	150	200	200	200	300	mW
T _j	Junction Temperature	150						°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

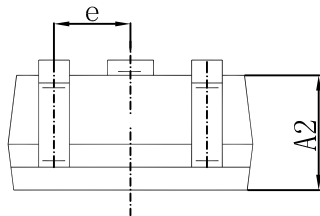
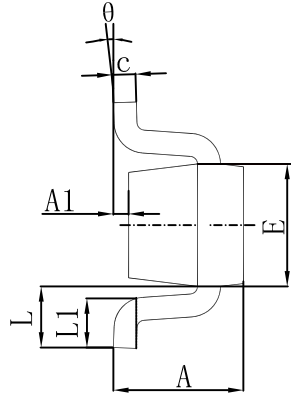
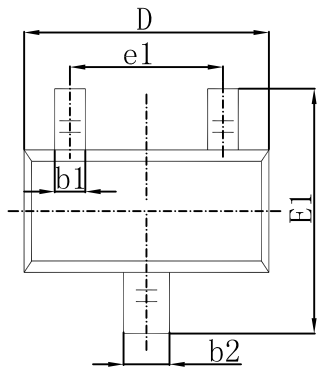


Typical Characteristics



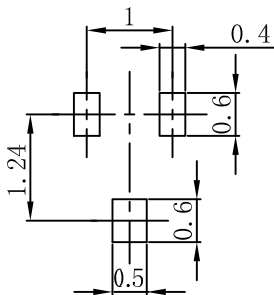


SOT-523 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.350	0.010	0.014
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
E	0.700	0.900	0.028	0.035
E1	1.450	1.750	0.057	0.069
e	0.500 TYP.		0.020 TYP.	
e1	0.900	1.100	0.035	0.043
L	0.400 REF.		0.016 REF.	
L1	0.260	0.460	0.010	0.018
theta	0°	8°	0°	8°

SOT-523 Suggested Pad Layout



- Note:
1. Controlling dimension: in millimeters.
 2. General tolerance: $\pm 0.05\text{mm}$.
 3. The pad layout is for reference purposes only.