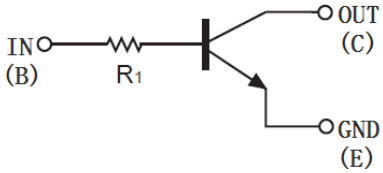
迈拓电子
MAITUO ELECTRONIC

DTC144TM/DTC144TE/DTC144TUA
DTC144TKA /DTC144TCA/DTC144TSA



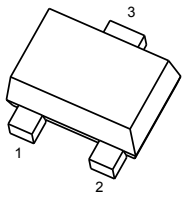
DIGITAL TRANSISTOR (NPN)

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

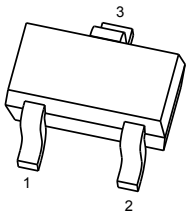
PIN CONNENCTIONS and MARKING

DTC144TM — **SOT-723**



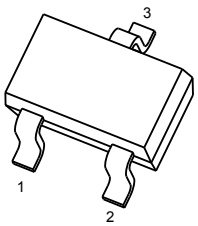
1. IN
2. GND
3. OUT

DTC144TE — **SOT-523**



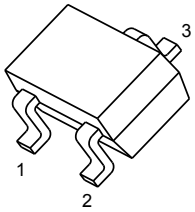
1. IN
2. GND
3. OUT

DTC144TUA — **SOT-323**



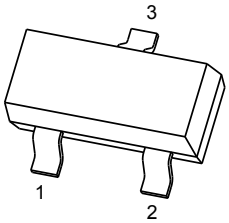
1. IN
2. GND
3. OUT

DTC144TKA — **SOT-23-3L**



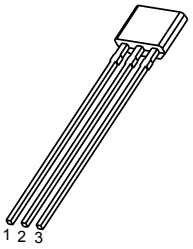
1. IN
2. GND
3. OUT

DTC144TCA — **SOT-23**



1. IN
2. GND
3. OUT

DTC144TSA — **TO-92S**



1. GND
2. OUT
3. IN

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ORDERING INFORMATION

Part Number	MARKING (1)	Package	Packing Method	Pack Quantity
DTC144TM	06	SOT-723	Reel	8000pcs/Reel
DTC144TE	06	SOT-523	Reel	3000pcs/Reel
DTC144TUA	06	SOT-323	Reel	3000pcs/Reel
DTC144TKA	06	SOT-23-3L	Reel	3000pcs/Reel
DTC144TCA	06	SOT-23	Reel	3000pcs/Reel
DTC144TSA	C144 (2) T•XXX	TO-92S	Bulk	1000pcs/Bag
DTC144TSA-TA	C144 (2) T•XXX	TO-92S	Tape	3000pcs/Box

Notes: (1). Solid dot = Green molding compound device, if none, the normal device.

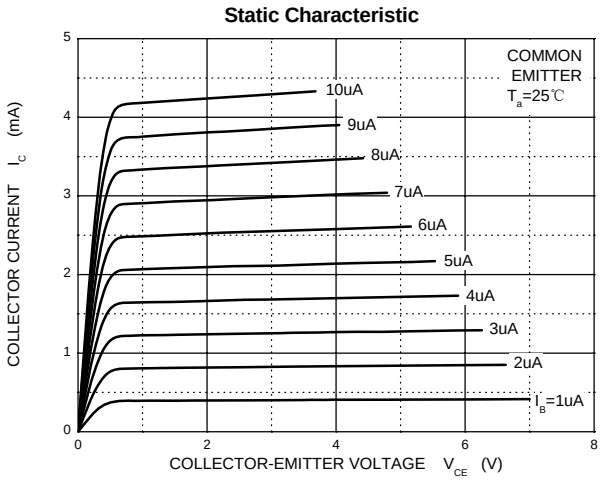
(2). XXX=Code

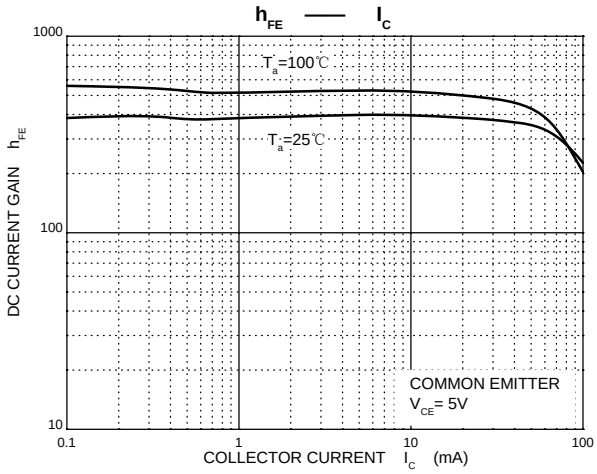
MAXIMUM RATINGS(Ta=25℃ unless otherwise noted)

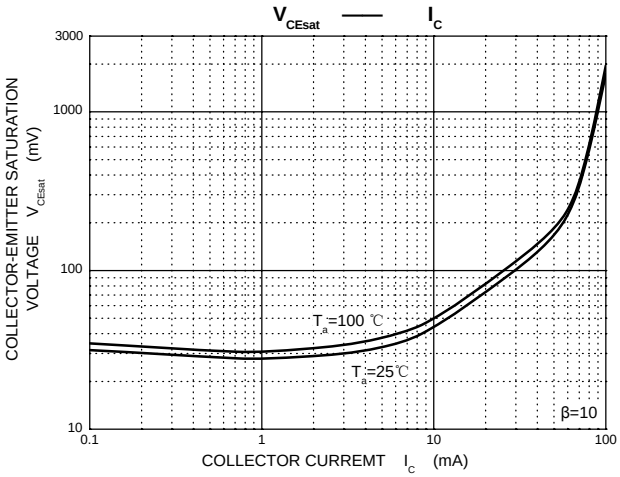
Symbol	Parameter	Limits(DTC144T□)						Unit
		M	E	UA	KA	CA	SA	
V_{CBO}	Collector-Base Voltage	50						V
V_{CEO}	Collector-Emitter Voltage	50						V
V_{EBO}	Emitter-Base Voltage	5						V
I_C	Collector Current	100						mA
P_D	Power Dissipation	100	150	200	200	200	300	mW
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55～+150						℃

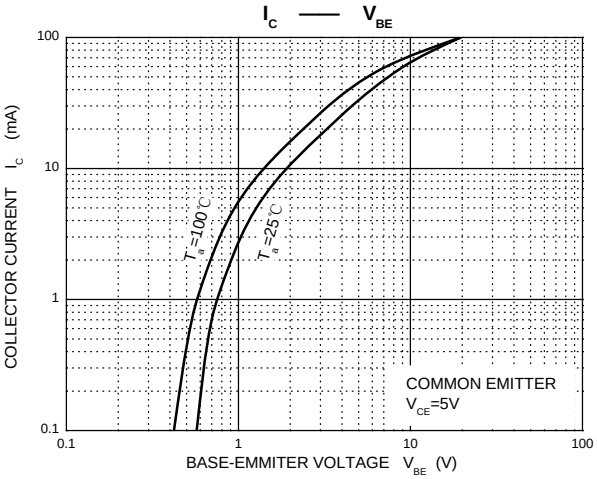
ELECTRICAL CHARACTERISTICS (Ta=25℃ unless otherwise specified)

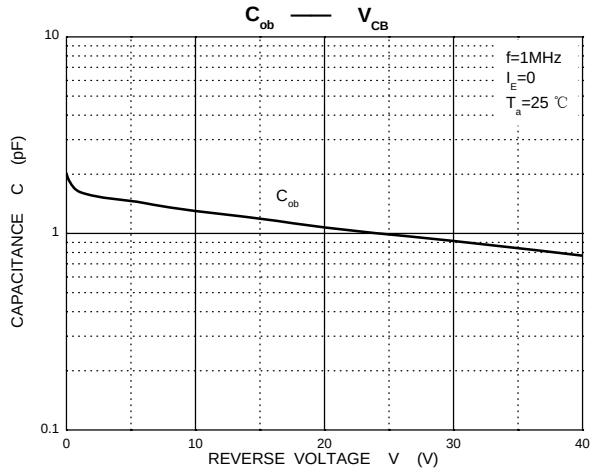
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	Ic=50μA,I_E=0	50			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	Ic=1mA,I_B=0	50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=50μA,I_C=0	5			V
Collector cut-off current	I_{CBO}	V_{CB}=50V,I_E=0			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=5mA,I_B=0.5mA			0.3	V
DC current gain	h_{FE}	V_{CE}=5V,I_C=1mA	100	300	600	
Input resistor	R_1		32.9	47	61.1	kΩ
Transition frequency	f_T	V_{CE}=10V,I_E=-5mA, f=100MHz		250		MHz

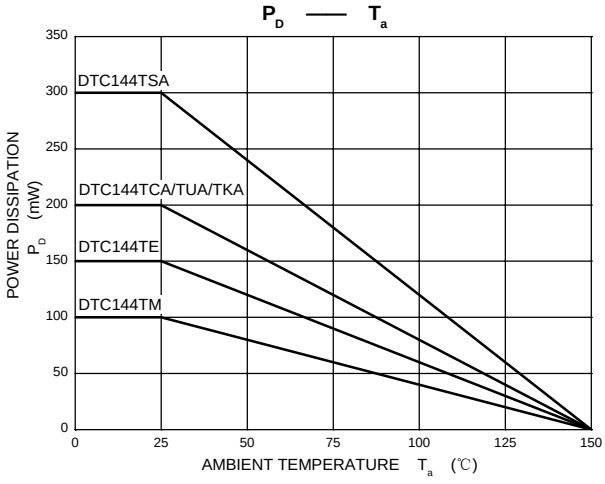

Static Characteristic
COMMON
EMITTER
Ta=25℃
10uA
9uA
8uA
7uA
6uA
5uA
4uA
3uA
2uA
IB=1uA
COLLECTOR CURRENT IC (mA)
COLLECTOR-EMITTER VOLTAGE VCE (V)


hFE — IC
Ta=100℃
Ta=25℃
COMMON EMITTER
VCE= 5V
DC CURRENT GAIN hFE
COLLECTOR CURRENT IC (mA)


VCEsat — IC
Ta=100 ℃
Ta=25℃
β=10
COLLECTOR-EMITTER SATURATION VOLTAGE VCEsat (mV)
COLLECTOR CURREMT IC (mA)


IC — VBE
Ta=100℃
Ta=25℃
COMMON EMITTER
VCE=5V
COLLECTOR CURRENT IC (mA)
BASE-EMMITER VOLTAGE VBE (V)


Cob — VCB
f=1MHz
IE=0
Ta=25 ℃
Cob
CAPACITANCE C (pF)
REVERSE VOLTAGE V (V)


PD — Ta
DTC144TSA
DTC144TCA/TUA/TKA
DTC144TE
DTC144TM
POWER DISSIPATION PD (mW)
AMBIENT TEMPERATURE Ta (℃)

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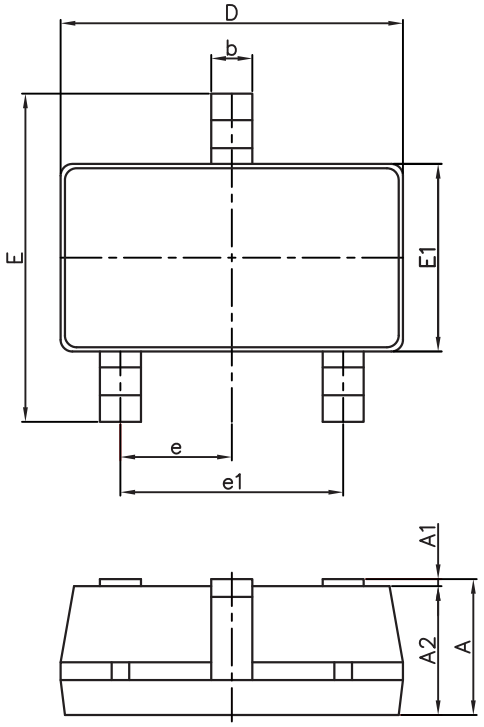
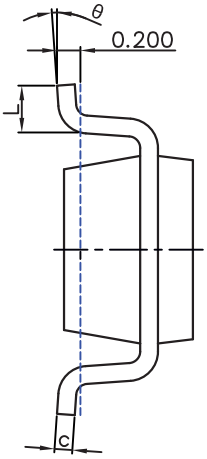
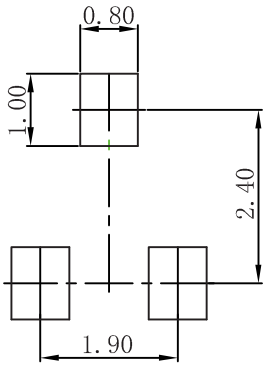
SOT-23-3L Package Outline Dimensions





Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
K	0°	8°	0°	8°

SOT23-3L Suggested Pad Lay out



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.