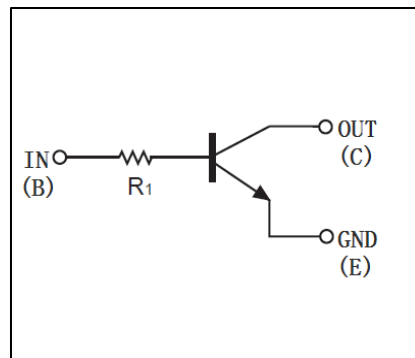


Digital Transistors (NPN)

FEATURES

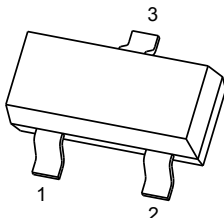
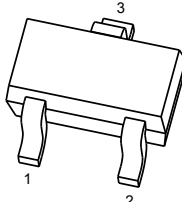
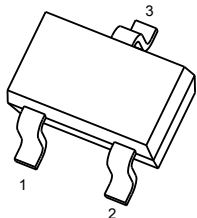
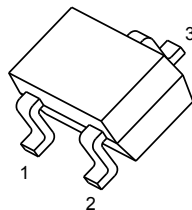
- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors(see equivalent circuit)
- The bias resistors consist of thin-film resistors with complete isolation to allow negative biasing of the input.They also have the advantage of almost completely eliminating parasitic effects
- Only the on/off conditions need to be set for operation, making device design easy

• Equivalent Circuit



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

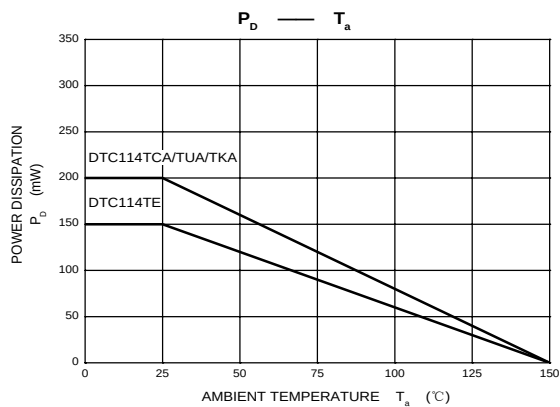
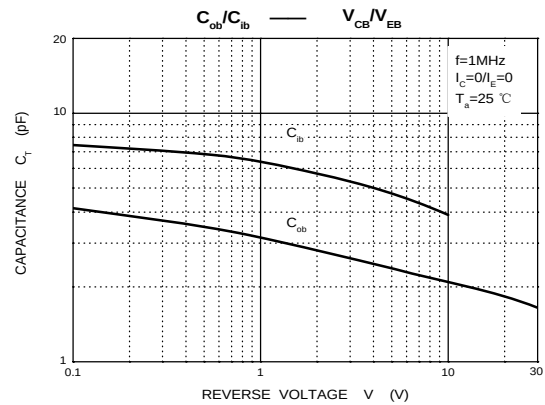
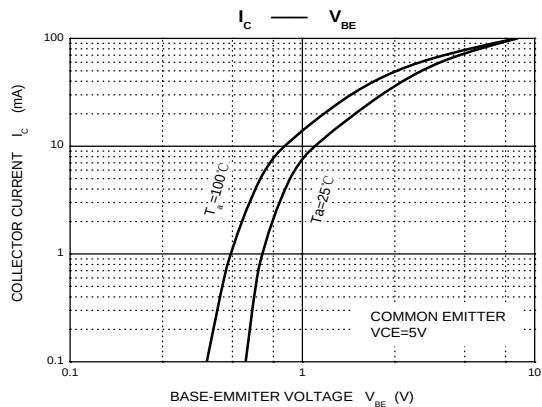
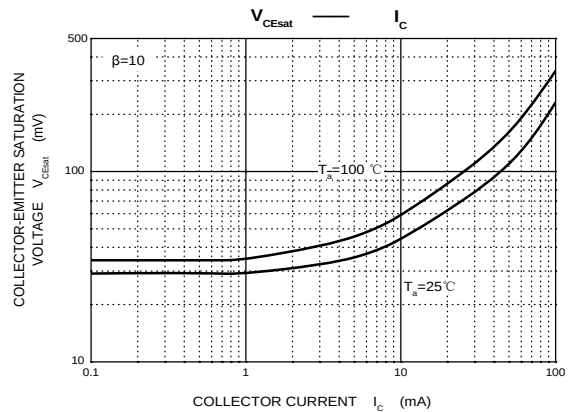
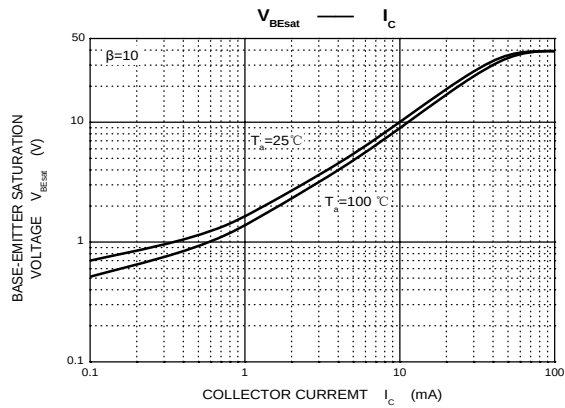
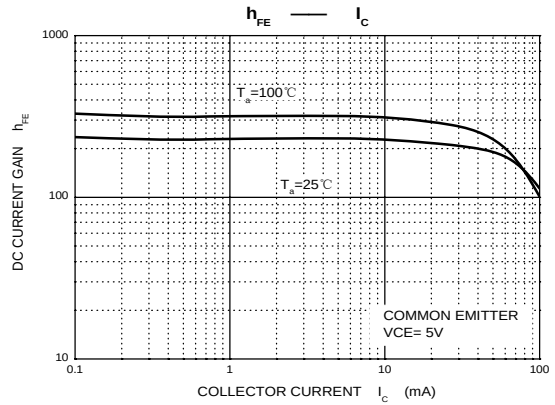
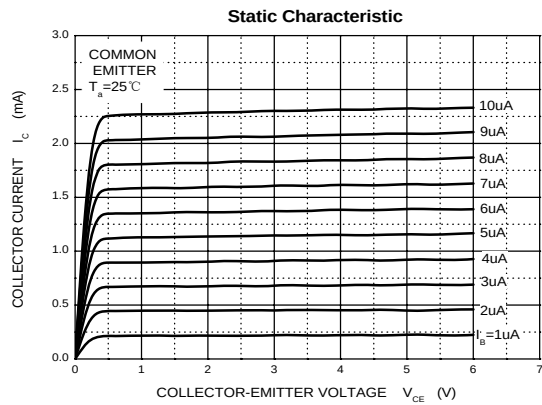
MAXIMUM RATINGS(Ta=25°C unless otherwise noted)

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				°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 =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

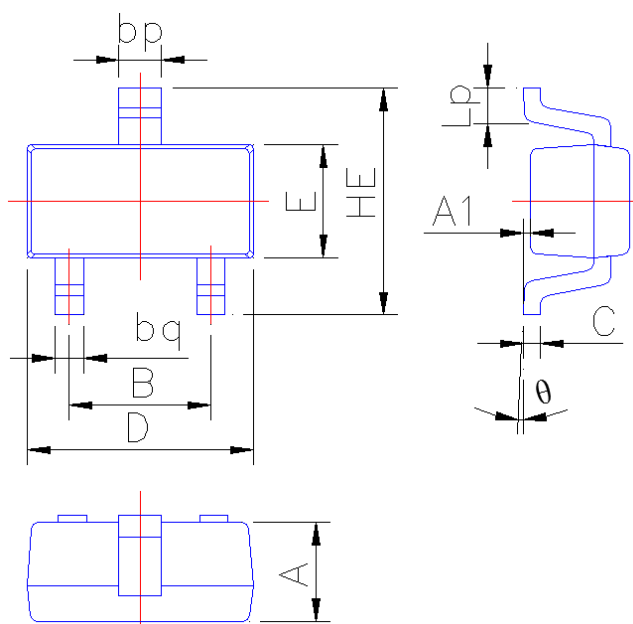
Typical Characteristics



PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-523

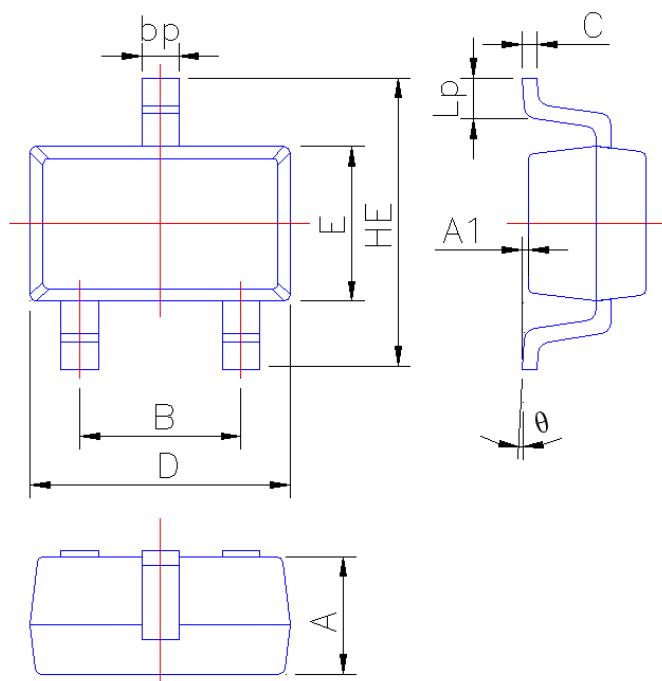


Symbol	Dimension in Millimeters	
	Min	Max
A	0.60	0.80
A1	0.010	0.100
B	0.95	1.05
bp	0.26	0.40
bq	0.16	0.30
C	0.09	0.15
D	1.50	1.70
E	0.70	0.85
HE	1.45	1.75
Lp	0.16	0.36
θ	0°	5°

PACKAGE OUTLINE

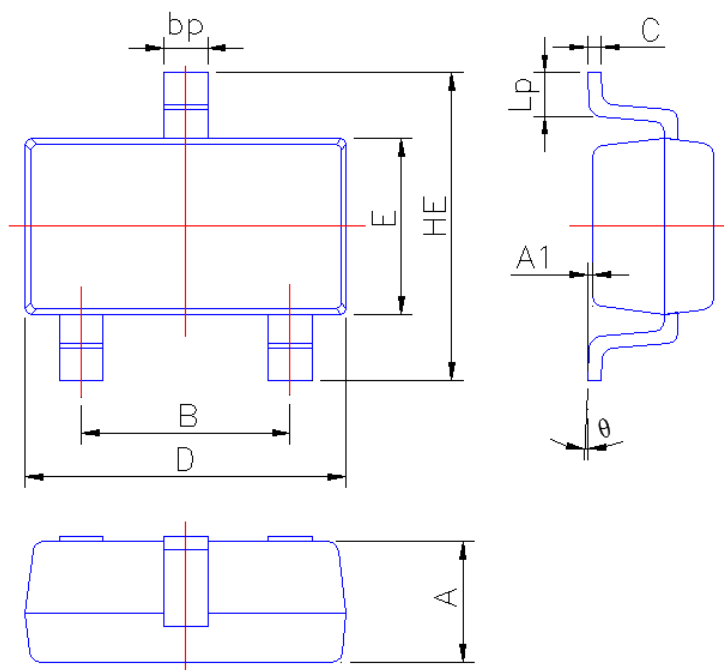
Plastic surface mounted package; 3 leads

SOT-323



Symbol	Dimension in Millimeters	
	Min	Max
A	0.90	1.00
A1	0.010	0.100
B	1.20	1.40
bp	0.25	0.45
C	0.09	0.15
D	2.00	2.20
E	1.15	1.35
HE	2.15	2.55
Lp	0.25	0.46
θ	0°	6°

Package outline dimensions SOT23-3L

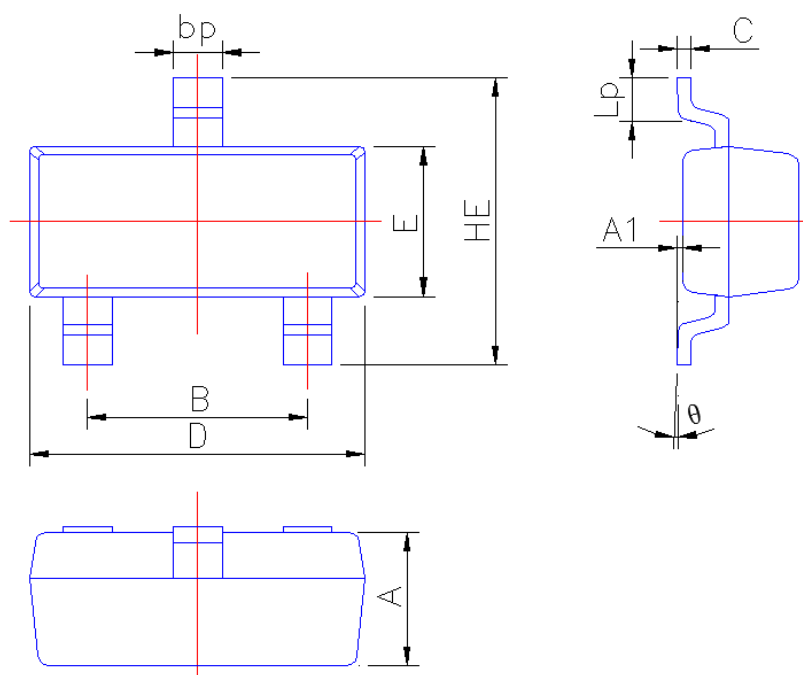


Symbol	Dimension in Millimeters	
	Min	Max
A	1.05	1.20
A1	0.010	0.100
B	1.80	2.00
bp	0.35	0.50
C	0.09	0.15
D	2.80	3.00
E	1.50	1.70
HE	2.60	3.00
Lp	0.25	0.55
θ	2°	6°

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



Symbol	Dimension in Millimeters	
	Min	Max
A	0.90	1.10
A1	0.013	0.100
B	1.80	2.00
bp	0.35	0.50
C	0.09	0.150
D	2.80	3.00
E	1.20	1.40
HE	2.20	2.80
Lp	0.20	0.50
θ	0°	5°