

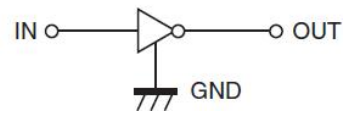
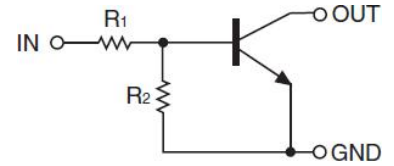


DTC123JE Digital Transistors (Built-in Resistors)

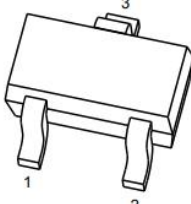
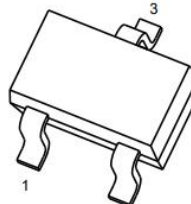
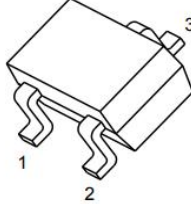
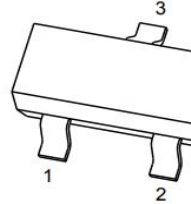
DIGITAL TRANSISTOR (NPN)

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 CONNECTIONS and MARKING

<p>DTC123JE</p>  <p>SOT-523</p> <p>1. IN 2. GND 3. OUT</p>	<p>DTC123JUA</p>  <p>SOT-323</p> <p>1. IN 2. GND 3. OUT</p>
<p>DTC123JKA</p>  <p>SOT-23-3L</p> <p>1. IN 2. GND 3. OUT</p>	<p>DTC123JCA</p>  <p>SOT-23</p> <p>1. IN 2. GND 3. OUT</p>

ORDERING INFORMATION

Part Number	MARKING	Package	Packing Method	Pack Quantity
DTC123JE	E42	SOT-523	Reel	3000pcs/Reel
DTC123JUA	E42	SOT-323	Reel	3000pcs/Reel
DTC123JKA	E42	SOT-23-3L	Reel	3000pcs/Reel
DTC123JCA	E42	SOT-23	Reel	3000pcs/Reel



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

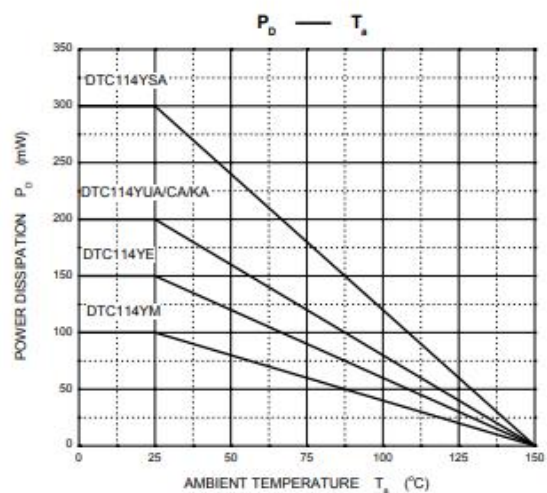
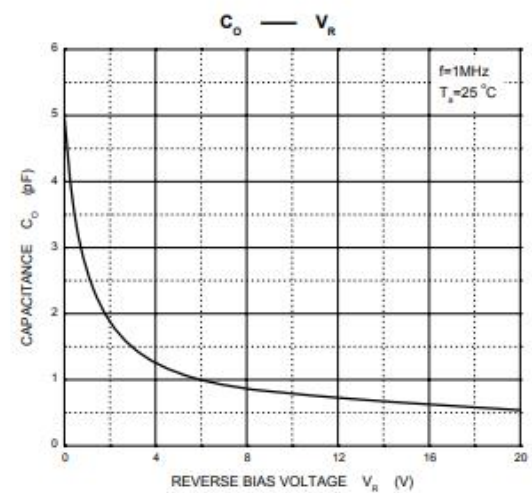
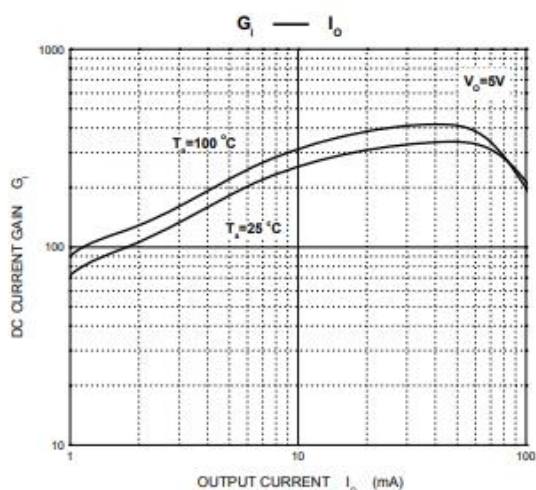
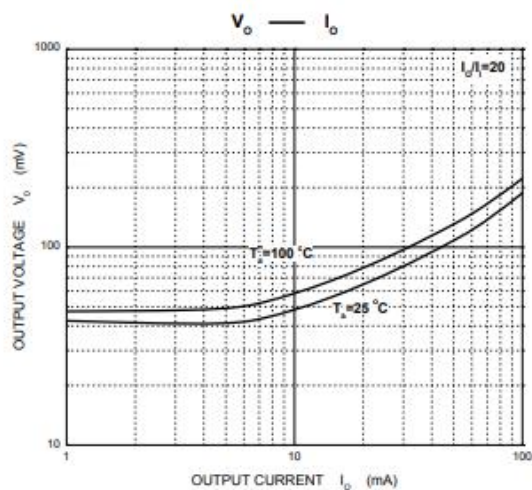
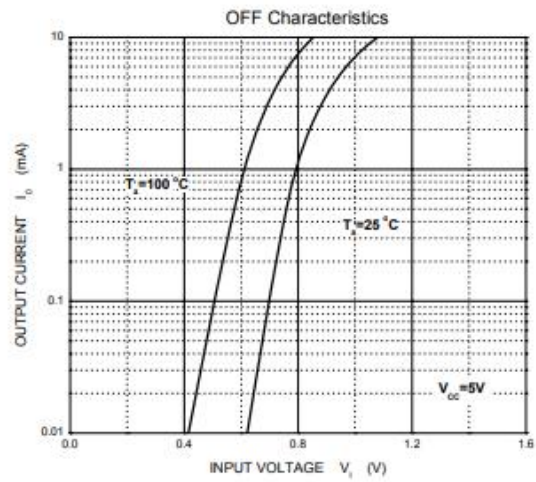
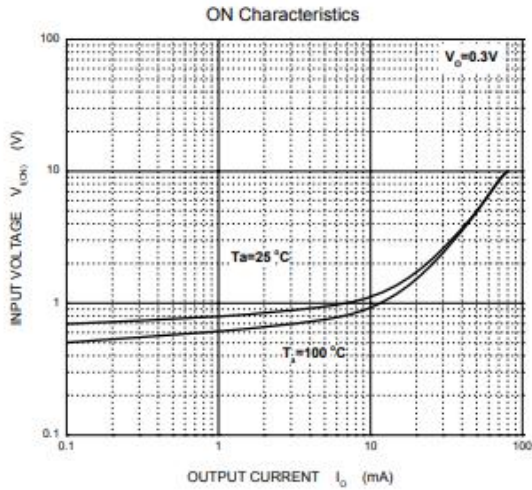
Symbol	Parameter	Limits(DTC123J□)						Unit
		M	E	UA	KA	CA	SA	
V _{CC}	Supply Voltage	50						V
V _{IN}	Input Voltage	-5~+12						V
I _o	Output Current	100						mA
P _D	Power Dissipation	100	150	200	200	200	300	mW
T _J ,T _{stg}	Operation Junction and Storage Temperature Range	-55~+150						°C

ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Input voltage	V _{I(off)}	V _{CC} =5V,I _o =100μA	0.5			V
	V _{I(on)}	V _O =0.3V,I _o =5mA			1.1	V
Output voltage	V _{O(on)}	I _o /I _i =5mA/0.25mA		0.1	0.3	V
Input current	I _i	V _i =5V			3.6	mA
Output current	I _{O(off)}	V _{CC} =50V,V _i =0			0.5	μA
DC current gain	G _I	V _O =5V,I _o =10mA	80			
Input resistance	R ₁		1.54	2.2	2.86	kΩ
Resistance ratio	R ₂ /R ₁		17	21	26	
Transition frequency	f _T	V _O =10V,I _o =5mA,f=100MHz		250		MHz

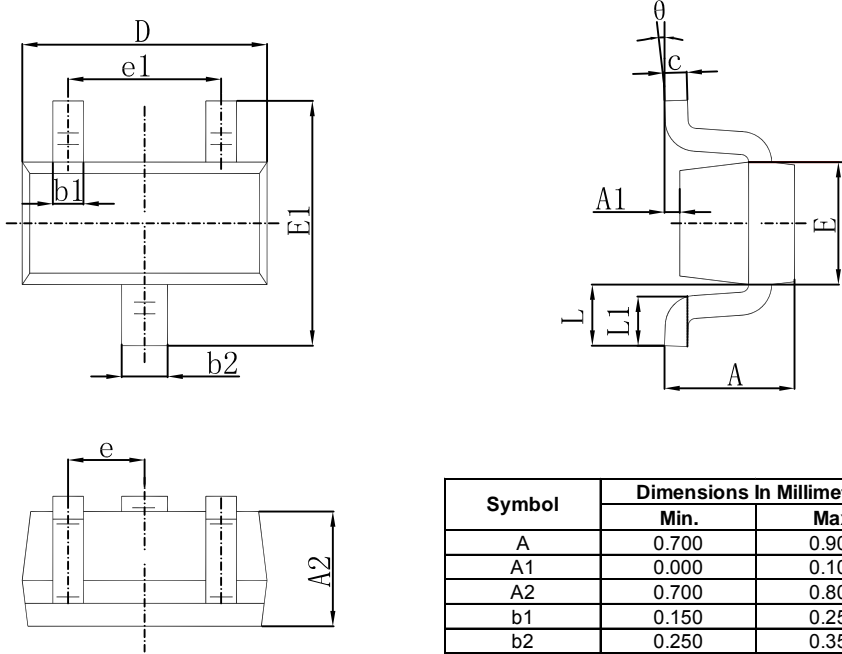


Typical Characteristics



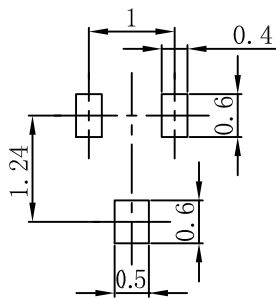


SOT-523 Package Outline Dimensions



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
θ	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.