

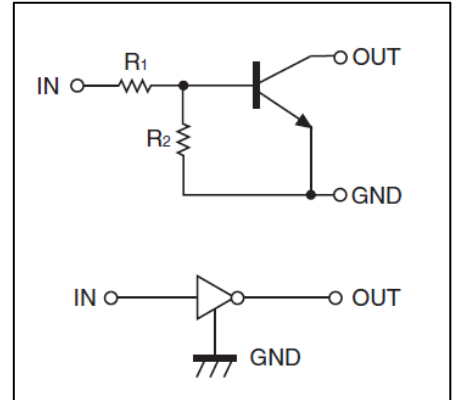
Digital Transistors (Built-in Resistors)

• Equivalent Circuit

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

DTC123YE		SOT-523	1. IN 2. GND 3. OUT	DTC123YUA		SOT-323	1. IN 2. GND 3 . OUT
DTC123YCA		SOT-23	1. IN 2. GND 3 . OUT	DTC123YKA		SOT-23-3L	1. IN 2. GND 3. OUT

ORDERING INFORMATION

Part Number	MARKING ⁽¹⁾	Package	Packing Method	Pack Quantity
DTC123YE	62	SOT-523	Reel	3000pcs/Reel
DTC123YUA	62	SOT-323	Reel	3000pcs/Reel
DTC123YKA	62	SOT-23-3L	Reel	3000pcs/Reel
DTC123YCA	62	SOT-23	Reel	3000pcs/Reel

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

(2). XXX=Code

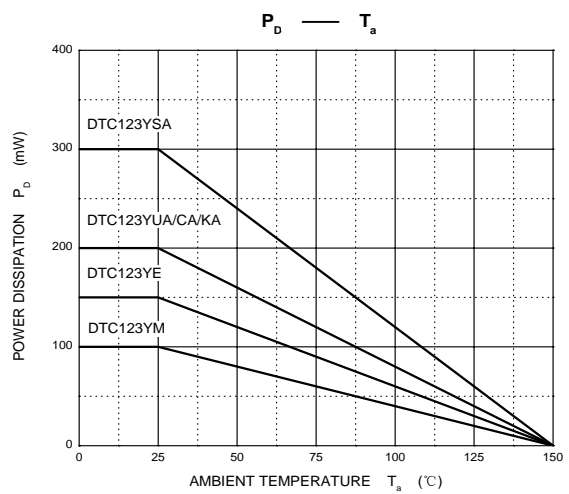
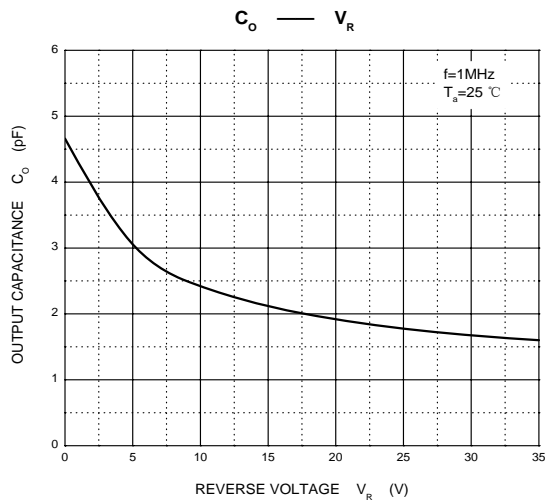
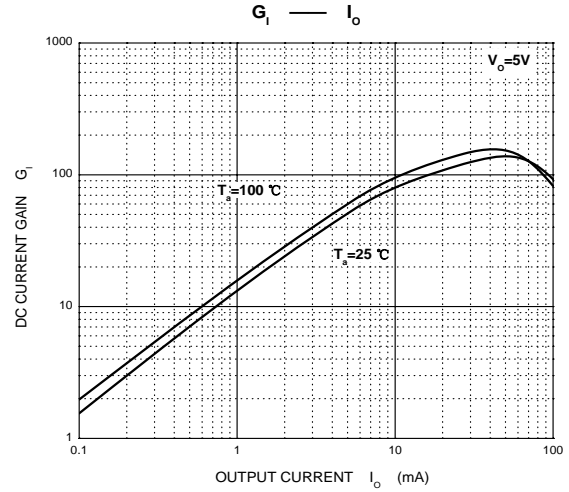
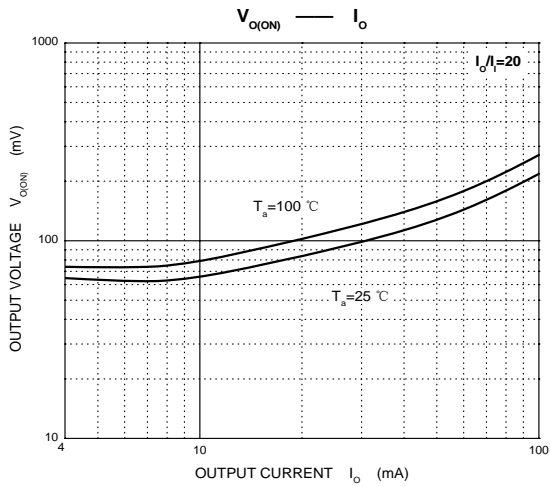
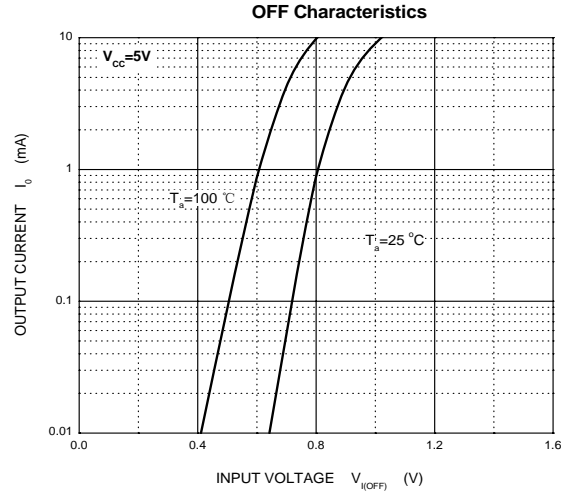
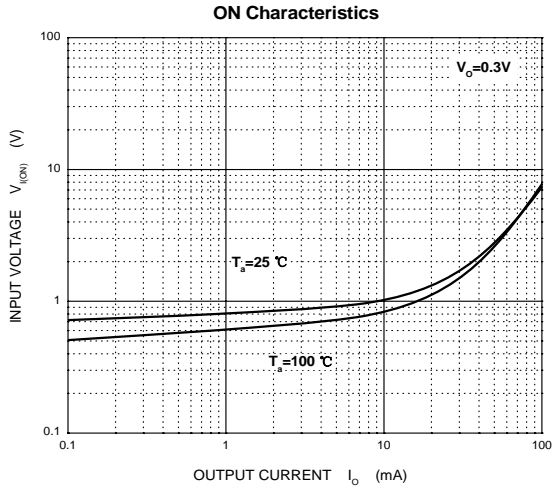
MAXIMUM RATINGS(Ta=25°C unless otherwise noted)

Symbol	Parameter	Limits(DTC123Y□)						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	0.3			V
	V _{I(on)}	V _O =0.3V, I _O =20mA			3	V
Output voltage	V _{O(on)}	I _O /I _I =10mA/0.5mA		0.1	0.3	V
Input current	I _I	V _I =5V			3.8	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	33			
Input resistance	R ₁		1.54	2.2	2.86	kΩ
Resistance ratio	R ₂ /R ₁		3.6	4.5	5.5	
Transition frequency	f _T	V _O =10V, I _O =5mA, f=100MHz		250		MHz

Typical Characteristics



PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-523

PACKAGE OUTLINE

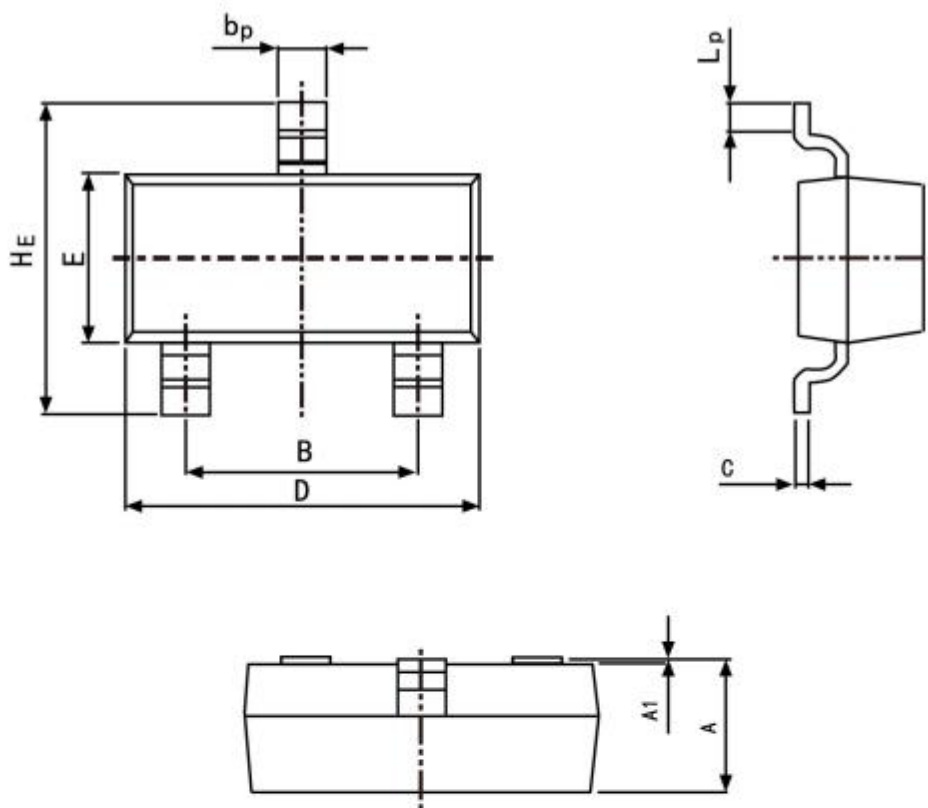
Plastic surface mounted package; 3 leads

SOT-323

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



Symbol	Dimension in Millimeters	
	Min	Max
A	0.95	1.40
B	1.78	2.04
b_p	0.35	0.50
C	0.08	0.19
D	2.70	3.10
E	1.20	1.65
HE	2.20	3.00
A_1	0.100	0.013
L_p	0.20	0.50

Package outline dimensions SOT23-3L

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