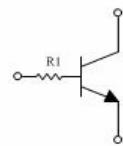


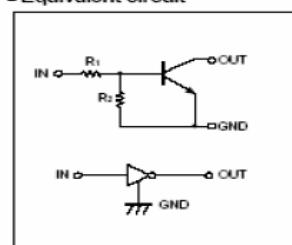
### Small Signal Diode

#### Features

- ◊ Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistor (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.
- ◊ Green compound (Halogen free) with suffix "G" on packing code and prefix "G" on date code.



● Equivalent circuit



#### Ordering Information

Package	Part No.	Packing
SOT-723	DTC114 EM	8K / 7" Reel
SOT-523	DTC114 EE	3K / 7" Reel
SOT-323	DTC114 EUA	3K / 7" Reel
SOT-23	DTC114 ECA	3K / 7" Reel
TO-92S	DTC114 ESA	3K / 7" Reel

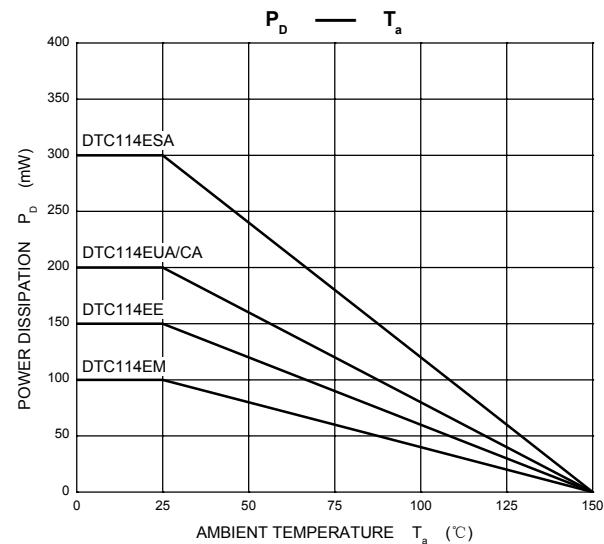
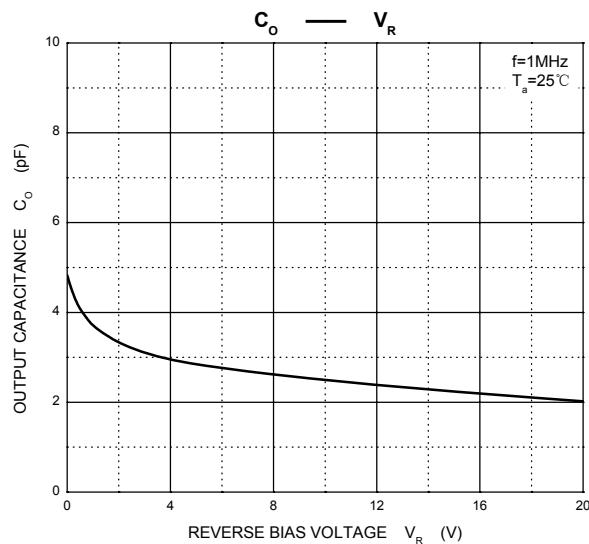
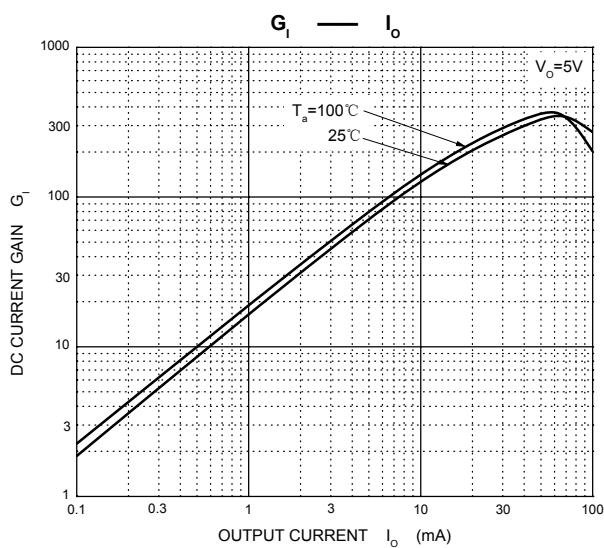
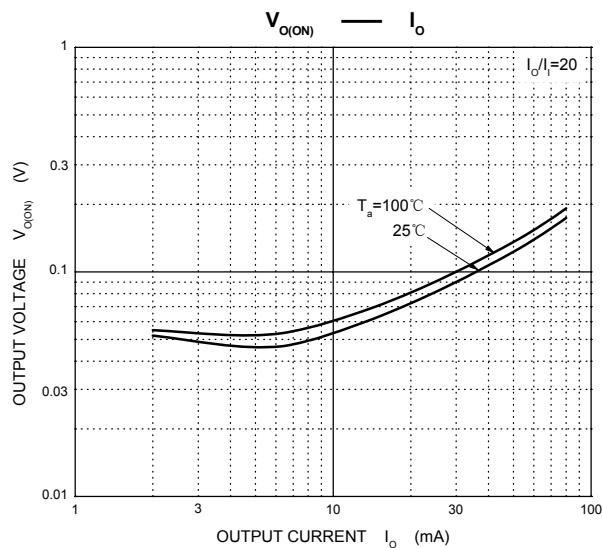
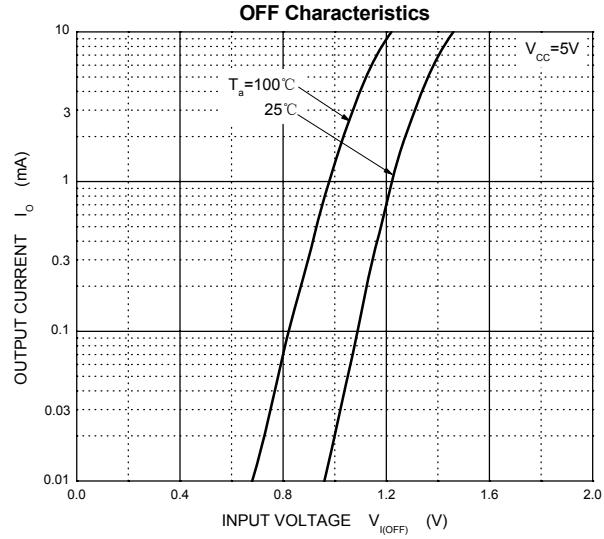
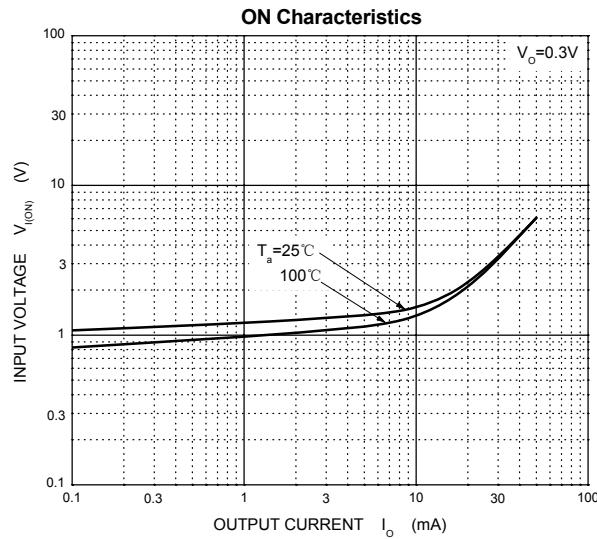
#### Maximum Ratings and Electrical Characteristics

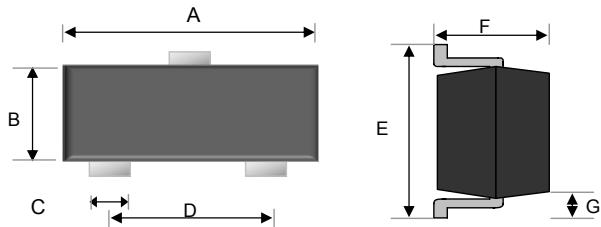
Rating at 25°C ambient temperature unless otherwise specified.

Type Number	Symbol	Value					Units
		EM	EE	EUA	ECA	ESA	
Power Dissipation	PD	100	150	200	300		mW
Supply Voltage	V <sub>CC</sub>			50			V
Input Voltage	V <sub>IN</sub>			-10~40			V
Output Current	I <sub>O</sub>			50			mA
	I <sub>C(MAX)</sub>			100			
Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>			-55 to + 150			°C

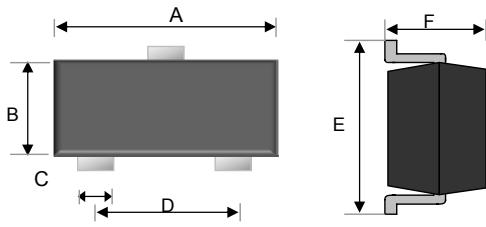
Notes:1. Valid provided that electrodes are kept at ambient temperature

Parameter	Symbol	Min	Typ	Max	Condition	Unit
Input Voltage	V <sub>I(on)</sub>			3	V <sub>CC</sub> =5V,I <sub>O</sub> =100μA	V
	V <sub>I(off)</sub>	0.5			V <sub>O</sub> =0.3V,I <sub>O</sub> =10mA	
Output Voltage	V <sub>O(on)</sub>			0.3	I <sub>O</sub> /I <sub>i</sub> =10mA/5mA	V
Input Current	I <sub>i</sub>		0.88		V <sub>i</sub> =5V	mA
Output Current	I <sub>O(off)</sub>			0.5	V <sub>CC</sub> =50V,V <sub>i</sub> =0	μA
DC Current Gain	G <sub>i</sub>	30			V <sub>O</sub> =5V,I <sub>O</sub> =5mA	
Input Resistance	R <sub>i</sub>	7	10	13		KΩ
Resistance Ratio	R <sub>2</sub> /R <sub>1</sub>	0.8	1	1.2		
Transition Frequency	f <sub>T</sub>		250		V <sub>O</sub> =10V,I <sub>O</sub> =5mA,f=100MHz	MHz

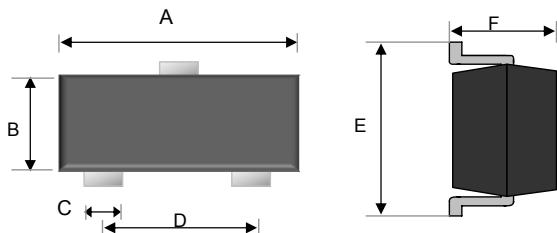
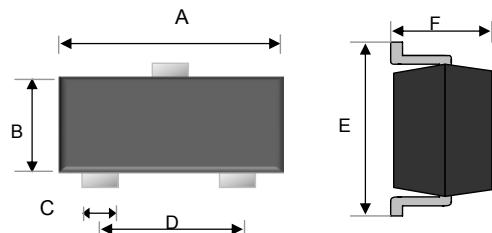
**Small Signal Diode**
**Typical Characteristics DTC114EUA**


**SOT-23**


Dimensions	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	2.80	3.00	0.11	0.12
B	1.20	1.40	0.05	0.06
C	0.30	0.50	0.01	0.02
D	1.80	2.00	0.07	0.08
E	2.25	2.55	0.09	0.10
F	0.90	1.20	0.04	0.04
G	0.550 REF		0.022 REF	

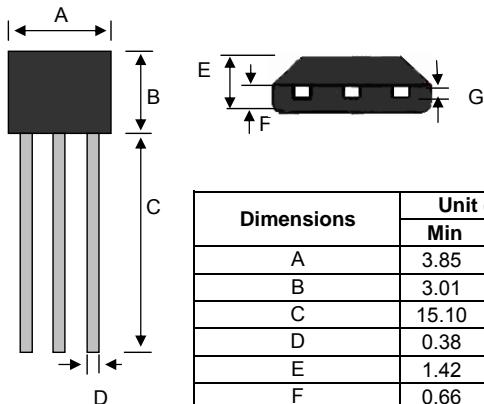
**SOT-323**


Dimensions	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.90	2.10	0.07	0.08
B	1.15	1.35	0.05	0.05
C	0.25	0.35	0.01	0.01
D	1.20	1.40	0.05	0.06
E	2.00	2.20	0.08	0.09
F	0.80	1.00	0.03	0.04

**SOT-523**

**SOT-723**


Dimensions	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.50	1.70	0.06	0.07
B	0.70	0.80	0.03	0.03
C	0.25	0.35	0.01	0.01
D	0.90	1.10	0.04	0.04
E	1.50	1.70	0.06	0.07
F	0.70	0.90	0.03	0.04

Dimensions	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.15	1.25	0.05	0.05
B	0.75	0.85	0.03	0.03
C	0.17	0.27	0.01	0.01
D	0.8 TYP		0.31TYP	
E	1.15	1.25	0.05	0.05
F			0.50	
				0.02

**TO-92S**


Dimensions	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	3.85	4.15	0.15	0.16
B	3.01	3.31	0.12	0.13
C	15.10	15.50	0.59	0.61
D	0.38	0.55	0.01	0.02
E	1.42	1.62	0.06	0.06
F	0.66	0.86	0.03	0.03
G	0.36	0.51	0.01	0.02