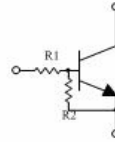


Small Signal Diode

Features

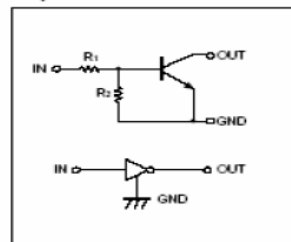
- ✧ Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistor (see equivalent circuit).
- ✧ The bias resistors consist of thin-film resistors with complete isolation to allow negative biasing of the input. They also have the advantage of almost completely eliminating parasitic effects.
- ✧ Only the on/off conditions need to be set for operation, marking device design easy.
- ✧ Green compound (Halogen free) with suffix "G" on packing code and prefix "G" on date code.



Ordering Information

Package	Part No.	Packing	Marking
SOT-523	DTC123 YE	3K / 7" Reel	62
SOT-323	DTC123 YUA	3K / 7" Reel	62
SOT-23	DTC123 YCA	3K / 7" Reel	62
TO-92S	DTC123 YSA	3K / 7" Reel	

●Equivalent circuit



Maximum Ratings and Electrical Characteristics

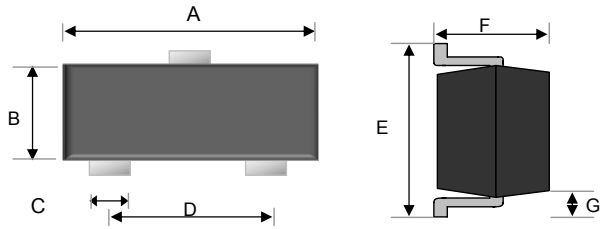
Rating at 25°C ambient temperature unless otherwise specified.

Type Number	Symbol	Value			Units
		JE	JUA JCA	JSA	
Power Dissipation	PD	150	200	300	mW
Supply Voltage	V_{CC}	50			V
Input Voltage	V_{IN}	-5 ~ 12			V
Output Current	I_O	100			mA
	$I_{C(MAX)}$	100			
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to + 150			°C

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

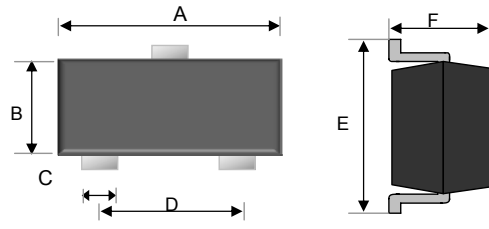
Parameter	Symbol	Min	Typ	Max	Condition	Unit
Input Voltage	$V_{I(off)}$	0.3			$V_{CC}=5V, I_O=100\mu A$	V
	$V_{I(on)}$			3	$V_O=0.3V, I_O=20mA$	V
Output Voltage	$V_{O(on)}$		0.1	0.3	$I_O/I_I=10mA/0.5mA$	V
Input Current	I_I			3.8	$V_I=5V$	mA
Output Current	$I_{O(off)}$			0.5	$V_{CC}=50V, V_I=0$	μA
DC Current Gain	G_I	33			$V_O=5V, I_O=10mA$	
Input Resistance	R_I	1.54	2.2	2.86		K Ω
Resistance Ratio	R_2/R_1	3.6	4.5	5.5		
Transition Frequency	f_T		250		$V_O=10V, I_O=5mA, f=100MHz$	MHz

SOT-23



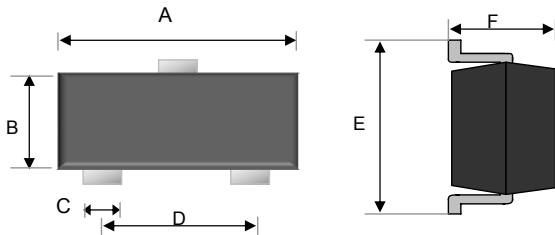
Dimensions	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	2.80	3.00	0.11	0.12
B	1.20	1.40	0.05	0.06
C	0.30	0.50	0.01	0.02
D	1.80	2.00	0.07	0.08
E	2.25	2.55	0.09	0.10
F	0.90	1.20	0.04	0.04
G	0.550 REF		0.022 REF	

SOT-323



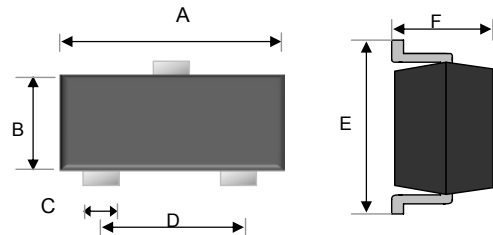
Dimensions	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.90	2.10	0.07	0.08
B	1.15	1.35	0.05	0.05
C	0.25	0.35	0.01	0.01
D	1.20	1.40	0.05	0.06
E	2.00	2.20	0.08	0.09
F	0.80	1.00	0.03	0.04

SOT-523



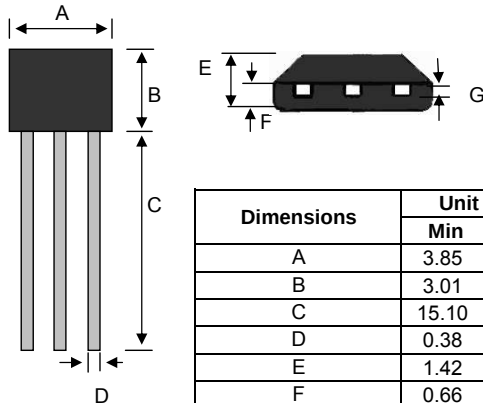
Dimensions	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.50	1.70	0.06	0.07
B	0.70	0.80	0.03	0.03
C	0.25	0.35	0.01	0.01
D	0.90	1.10	0.04	0.04
E	1.50	1.70	0.06	0.07
F	0.70	0.90	0.03	0.04

SOT-723



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