



Micro Commercial Components

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DTC114YUA

NPN Digital Transistors

Features

- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors
- 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

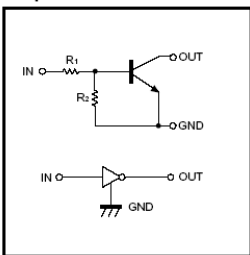
Absolute maximum ratings @ 25°C

Symbol	Parameter	Min	Typ	Max	Unit
V_{CC}	Supply voltage	---	50	---	V
V_{IN}	Input voltage	-6	---	40	V
I_o	Output current	---	70	---	mA
$I_{C(MAX)}$		---	100	---	
P_d	Power dissipation	---	200	---	mW
T_j	Junction temperature	---	150	---	°C
T_{stg}	Storage temperature	-55	---	150	°C

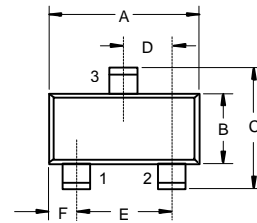
Electrical Characteristics @ 25°C

Symbol	Parameter	Min	Typ	Max	Unit
$V_{I(off)}$	Input voltage ($V_{CC}=5V, I_o=100 \mu A$)	---	---	0.3	V
$V_{I(on)}$	($V_o=0.3V, I_o=1mA$)	1.4	---	---	V
$V_{O(on)}$	Output voltage ($I_o/I_i=5mA/0.25mA$)	---	0.1	0.3	V
I_i	Input current ($V_i=5V$)	---	---	0.88	mA
$I_{O(off)}$	Output current ($V_{CC}=50V, V_i=0$)	---	---	0.5	μA
G_I	DC current gain ($V_o=5V, I_o=5mA$)	68	---	---	
R_1	Input resistance	7.0	10	13	K Ω
R_2/R_1	Resistance ratio	3.7	4.7	5.7	
f_T	Transition frequency ($V_{CE}=10V, I_E=5mA, f=100MHz$)	---	250	---	MHz

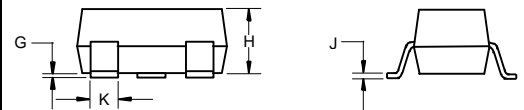
Equivalent circuit



SOT-323



1: IN
 2: GND
 3: OUT



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.071	.087	1.80	2.20	
B	.045	.053	1.15	1.35	
C	.079	.087	2.00	2.20	
D	.026 Nominal		0.65Nominal		
E	.047	.055	1.20	1.40	
F	.012	.016	.30	.40	
G	.000	.004	.000	.100	
H	.035	.039	.90	1.00	
J	.004	.010	.100	.250	
K	.012	.016	.30	.40	

Suggested Solder Pad Layout

