Micro Commercial Components

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DTC114YE

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

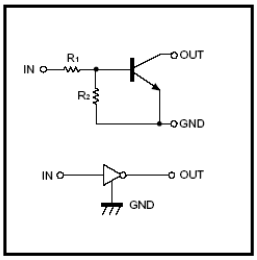
Absolute maximum ratings @ 25℃

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

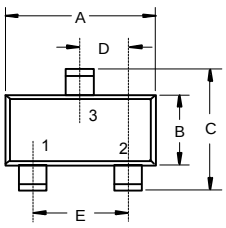
Electrical Characteristics @ 25℃

Symbol	Parameter	Min	Typ	Max	Unit
$V_{I(off)}$	Input voltage (V_{CC}=5V, I_O=100μA)	---	---	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	KΩ
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

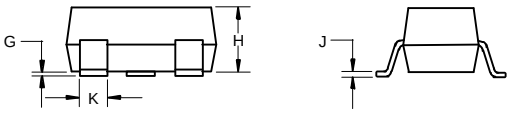
●Equivalent circuit



SOT-523



1. IN
2. GND
3. OUT



DIMENSIONS					
	INCHES		MM		
DIM	MIN	MAX	MIN	MAX	NOTE
A	.059	.067	1.50	1.70	
B	.030	.033	0.75	0.85	
C	.057	.069	1.45	1.75	
D	.020 Nominal		0.50Nominal		
E	.035	.043	0.90	1.10	
G	.000	.004	.000	.100	
H	.028	.031	.70	0.80	
J	.004	.008	.100	.200	
K	.010	.014	.25	.35	