



Micro Commercial Components

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20736 Marilla Street Chatsworth
CA 91311
Phone: (818) 701-4933
Fax: (818) 701-4939

DTC114YKA

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

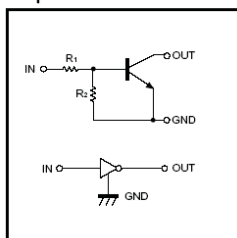
Absolute maximum ratings @ 25°C

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

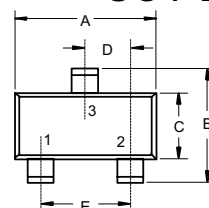
Electrical Characteristics @ 25°C

Symbol	Parameter	Min	Typ	Max	Unit
$V_{I(off)}$	Input voltage ($V_{CC}=5V$, $I_O=100\mu A$)	---	---	0.3	V
$V_{I(on)}$	Input voltage ($V_O=0.3V$, $I_O=1mA$)	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_I	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

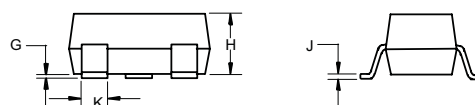
Equivalent circuit



SOT-23-3L

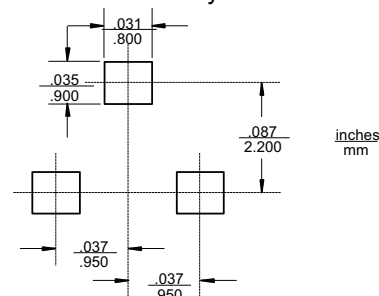


1. IN
2. GND
3. OUT



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.113	.117	2.87	2.97	
B	.108	.112	2.75	2.85	
C	.061	.065	1.55	1.65	
D	.036	.038	.925	.975	
E	.073	.077	1.85	1.95	
G	.0016	.0039	.04	.100	
H	.044	.049	1.12	1.25	
J	.006	.007	.14	.17	
K	.013	.015	.34	.37	

Suggested Solder Pad Layout





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