



Micro Commercial Components

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# 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

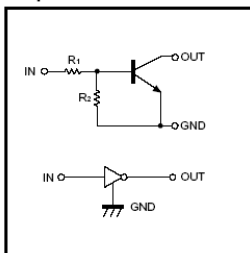
### Absolute maximum ratings @ 25°C

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

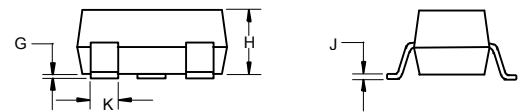
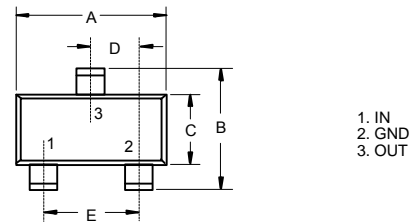
### Electrical Characteristics @ 25°C

Symbol	Parameter	Min	Typ	Max	Unit
$V_{I(off)}$	Input voltage ( $V_{CC}=5V, I_o=100 \mu A$ )	---	---	0.3	V
$V_{I(on)}$	( $V_o=0.3V, I_o=1mA$ )	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	$\mu A$
$G_I$	DC current gain ( $V_o=5V, I_o=5mA$ )	68	---	---	
$R_1$	Input resistance	7.0	10	13	K $\Omega$
$R_2/R_1$	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



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

