



Micro Commercial Components

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# DTA114YCA

## Features

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- 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
- Halogen free available upon request by adding suffix "-HF"

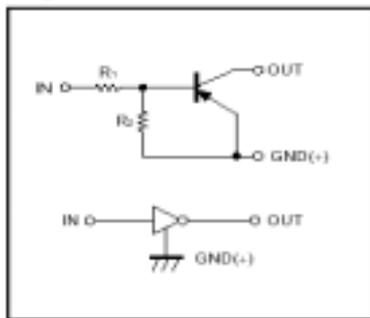
### Absolute maximum ratings @ 25°C

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

### Electrical Characteristics @ 25°C

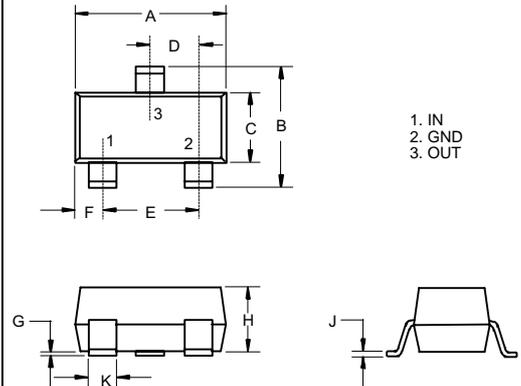
Symbol	Parameter	Min	Typ	Max	Unit
$V_{I(off)}$	Input voltage ( $V_{CC}=-5V, I_O=-100 \mu A$ )	---	---	-0.3	V
$V_{I(on)}$	( $V_O=-0.3V, I_O=-1mA$ )	-1.4	---	---	V
$V_{O(on)}$	Output voltage ( $I_O/I_I=-5mA/-0.25mA$ )	---	---	-0.3	V
$I_I$	Input current ( $V_I=-5V$ )	---	---	-0.88	mA
$I_{O(off)}$	Output current ( $V_{CC}=-50V, V_I=0$ )	---	---	-0.5	$\mu A$
$G_1$	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 ( $V_O=-10V, I_O=5mA, f=100MHz$ )	---	250	---	MHz

### Equivalent circuit



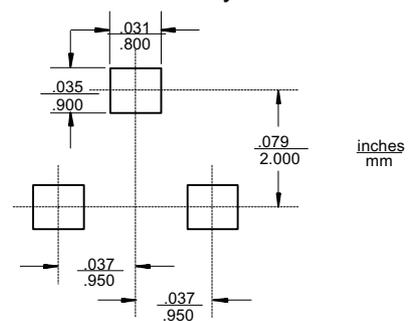
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## SOT-23



DIM	DIMENSIONS				NOTE
	INCHES		MM		
A	.110	.120	2.80	3.04	
B	.083	.104	2.10	2.64	
C	.047	.055	1.20	1.40	
D	.035	.041	.89	1.03	
E	.070	.081	1.78	2.05	
F	.018	.024	.45	.60	
G	.0005	.0039	.013	.100	
H	.035	.044	.89	1.12	
J	.003	.007	.085	.180	
K	.015	.020	.37	.51	

### Suggested Solder Pad Layout



**Typical Characteristics**

● **Electrical characteristic curves**

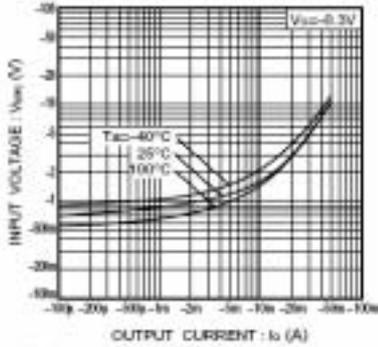


Fig.1 Input voltage vs. output current (ON characteristics)

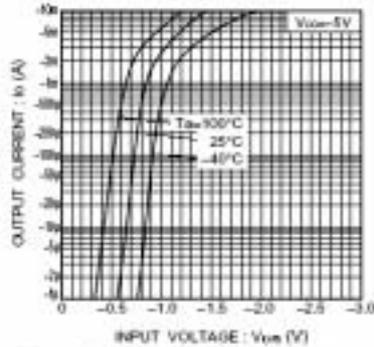


Fig.2 Output current vs. input voltage (OFF characteristics)

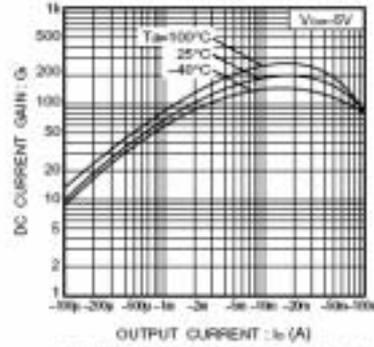


Fig.3 DC current gain vs. output current

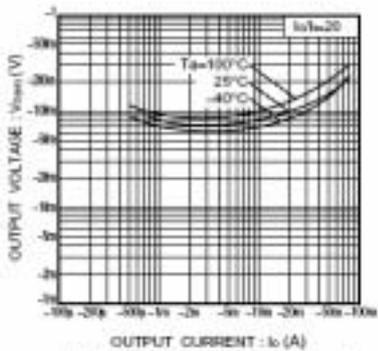


Fig.4 Output voltage vs. output current



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### Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel; 3Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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