



Micro Commercial Components

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

DTC144EUA

NPN Digital Transistors

Features

- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0 and MSL Rating 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

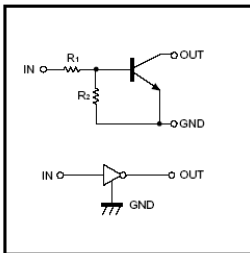
Absolute maximum ratings @ 25°C

Symbol	Parameter	Min	Typ	Max	Unit
V _{CC}	Supply voltage	---	50	---	V
V _{IN}	Input voltage	-10	---	40	V
I _O	Output current	---	100	---	mA
P _d	Power dissipation	---	200	---	mW
T _j	Junction temperature	---	150	---	°C
T _{stg}	Storage temperature	-55	---	150	°C

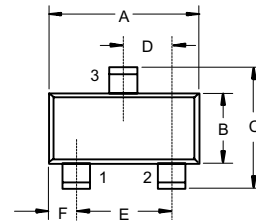
Electrical Characteristics @ 25°C

Symbol	Parameter	Min	Typ	Max	Unit
V _{I(off)}	Input voltage (V _{CC} =5V, I _O =100 μA) (V _O =0.3V, I _O =2mA)	---	---	0.5	V
V _{I(on)}		3.0	---	---	V
V _{O(on)}	Output voltage (I _O /I _I =10mA/0.5mA)	---	---	0.3	V
I _I	Input current (V _I =5V)	---	---	0.18	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	32.9	47	61.1	KΩ
R ₂ /R ₁	Resistance ratio	0.8	1.0	1.2	
f _T	Transition frequency (V _{CE} =10V, I _E =5mA, f=100MHz)	---	250	---	MHz

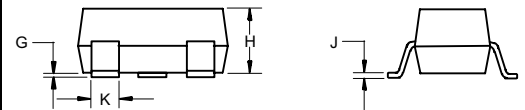
Equivalent circuit



SOT-323

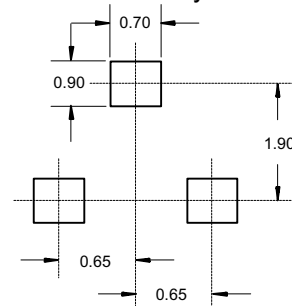


1: IN
 2: GND
 3: OUT



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



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● Electrical characteristic curves

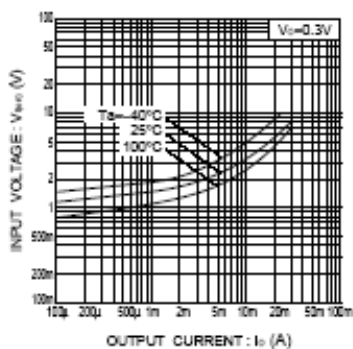


Fig.1 Input voltage vs. output current (ON characteristics)

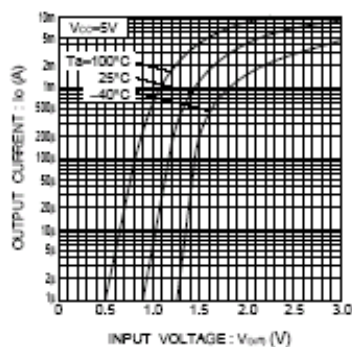


Fig.2 Output current vs. input voltage (OFF characteristics)

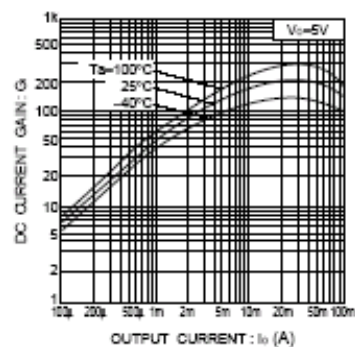


Fig.3 DC current gain vs. output current

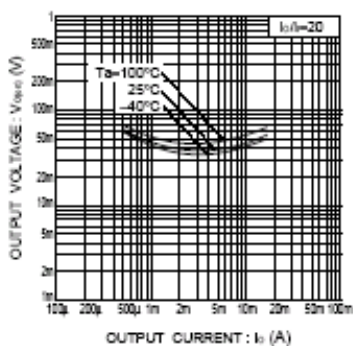


Fig.4 Output voltage vs. output current



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Ordering Information

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

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