



# DTC123JUA

## Features

- Halogen free available upon request by adding suffix "-HF"
- Epitaxial Planar Die Construction
- Complementary NPN Types Available
- Built-in Bias Resistors
- 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

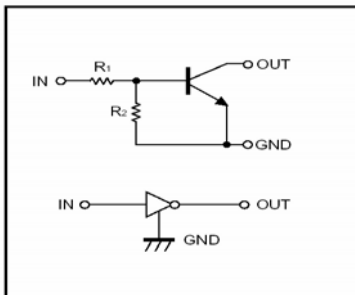
### Absolute maximum ratings @ 25°C

Symbol	Parameter	Min	Typ	Max	Unit
V <sub>CC</sub>	Supply voltage	---	50	---	V
V <sub>IN</sub>	Input voltage	-5	---	+12	V
P <sub>d</sub>	Power dissipation	---	200	---	mW
T <sub>J</sub>	Junction temperature	---	150	---	°C
T <sub>stg</sub>	Storage temperature	-55	---	150	°C
I <sub>O</sub>	Output current	---	100	---	mA
I <sub>C(MAX)</sub>		---	100	---	

### Electrical Characteristics @ 25°C

Symbol	Parameter	Min	Typ	Max	Unit
V <sub>I(off)</sub>	Input voltage (V <sub>CC</sub> =5V, I <sub>O</sub> =100 μA) (V <sub>O</sub> =0.3V, I <sub>O</sub> =5mA)	---	---	0.5	V
V <sub>I(on)</sub>		1.1	---	---	V
V <sub>O(on)</sub>	Output voltage (I <sub>O</sub> =5mA, I <sub>I</sub> =0.25mA)	---	0.1	0.3	V
I <sub>I</sub>	Input current (V <sub>I</sub> =5V)	---	---	3.6	mA
I <sub>O(off)</sub>	Output current (V <sub>CC</sub> =50V, V <sub>I</sub> =0)	---	---	0.5	μA
G <sub>I</sub>	DC current gain (V <sub>O</sub> =5V, I <sub>O</sub> =10mA)	80	---	---	
R <sub>1</sub>	Input resistance	1.54	2.2	2.86	K <sub>Ω</sub>
R <sub>2</sub> /R <sub>1</sub>	Resistance ratio	17	21	26	
f <sub>T</sub>	Transition frequency (V <sub>CE</sub> =10V, I <sub>E</sub> =5mA, f=100MHz)	---	250	---	MHz

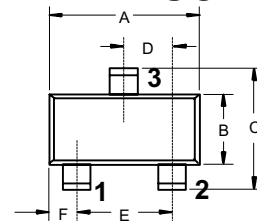
### Equivalent circuit



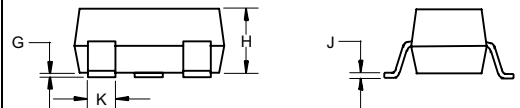
\*Marking: E42

## Digital Transistors

### SOT-323

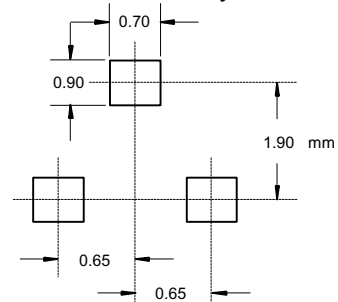


1:IN  
 2:GND  
 3:OUT



DIM	DIMENSIONS				NOTE
	INCHES		MM		
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



## Typical Characteristics

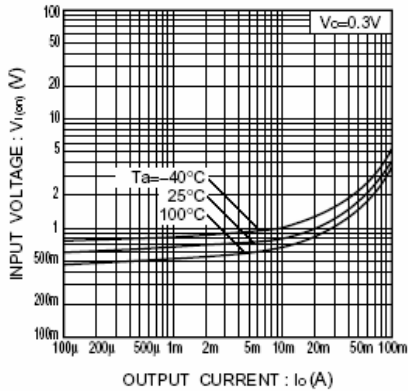


Fig.1 Input voltage vs. output current (ON characteristics)

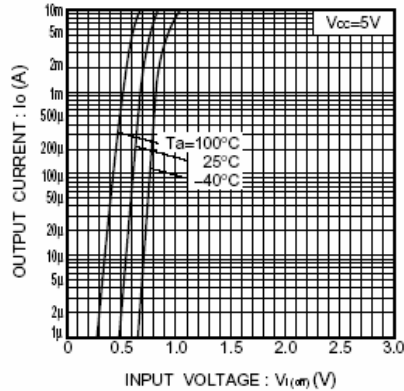


Fig.2 Output current vs. input voltage (OFF characteristics)

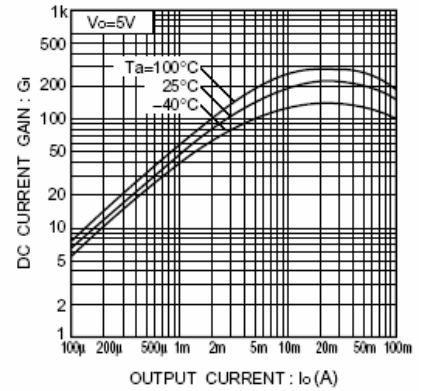


Fig.3 DC current gain vs. output current

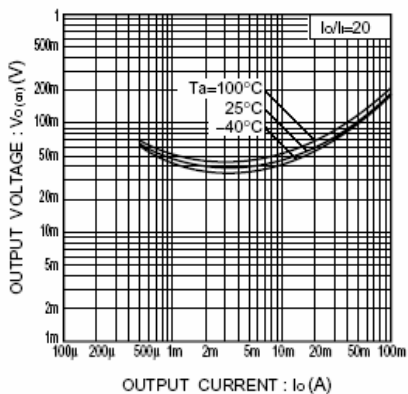


Fig.4 Output voltage vs. output current



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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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