

NPN Digital Transistor

DTC114EUA

Features

- **Pb-Free package is available**
RoHS product for packing code suffix "G"
Halogen free product for packing code suffix "H"
- 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

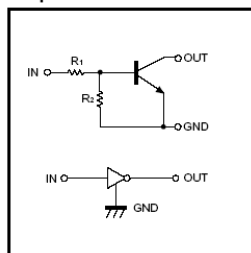
Absolute maximum ratings @ 25°C

Symbol	Parameter	Min	Typ	Max	Unit
V_{CC}	Supply voltage	---	50	---	V
V_{IN}	Input voltage	-10	---	40	V
I_O	Output current	---	50	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

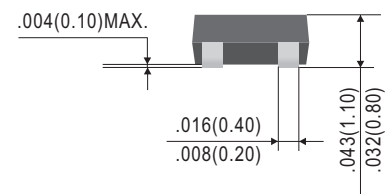
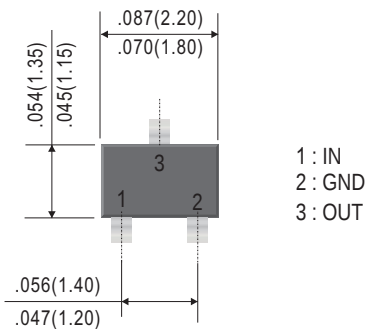
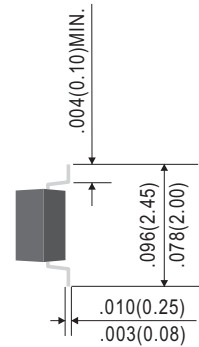
Symbol	Parameter	Min	Typ	Max	Unit
$V_{I(off)}$	Input voltage ($V_{CC}=5V$, $I_O=100\mu A$)	0.5	---	---	V
$V_{I(on)}$	Input voltage ($V_O=0.3V$, $I_O=10mA$)	---	---	3.0	V
$V_{O(on)}$	Output voltage ($I_O/I_I=10mA/0.5mA$)	---	0.1	0.3	V
I_I	Input current ($V_I=5V$)	---	---	0.88	mA
$I_{O(off)}$	Output current ($V_{CC}=50V$, $V_I=0$)	---	---	0.5	μA
G_I	DC current gain ($V_O=5V$, $I_O=5mA$)	30	---	---	---
R_1	Input resistance	7.0	10	13	K Ω
R_2/R_1	Resistance ratio	0.8	1.0	1.2	---
f_T	Transition frequency ($V_O=10V$, $I_O=5mA$, $f=100MHz$)	---	250	---	MHz

Equivalent circuit



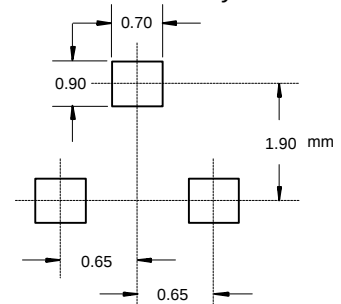
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SOT-323



Dimensions in inches and (millimeters)

Suggested Solder Pad Layout





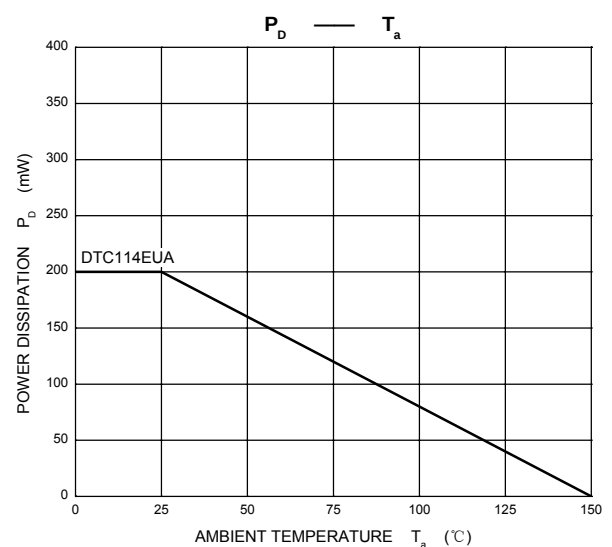
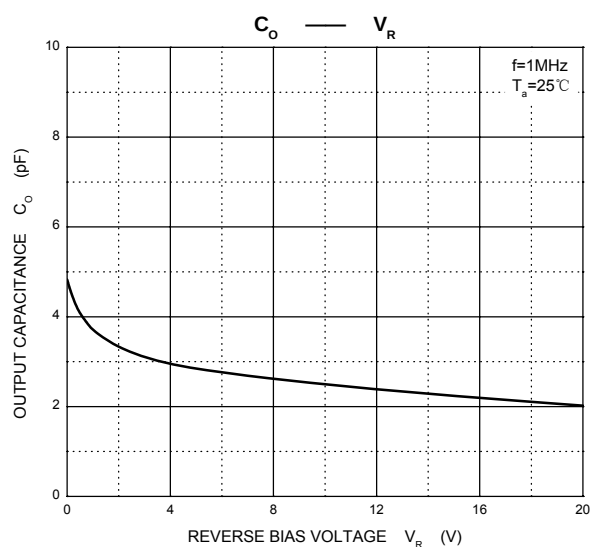
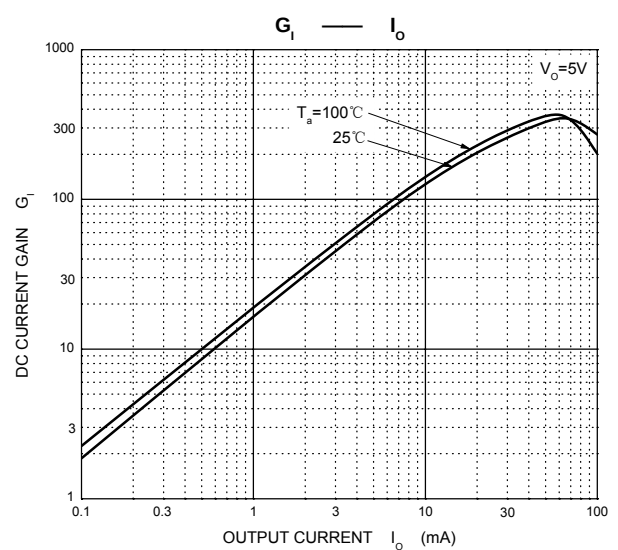
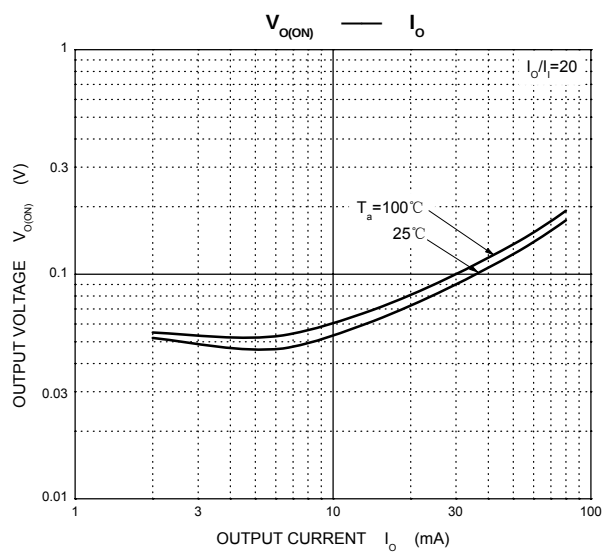
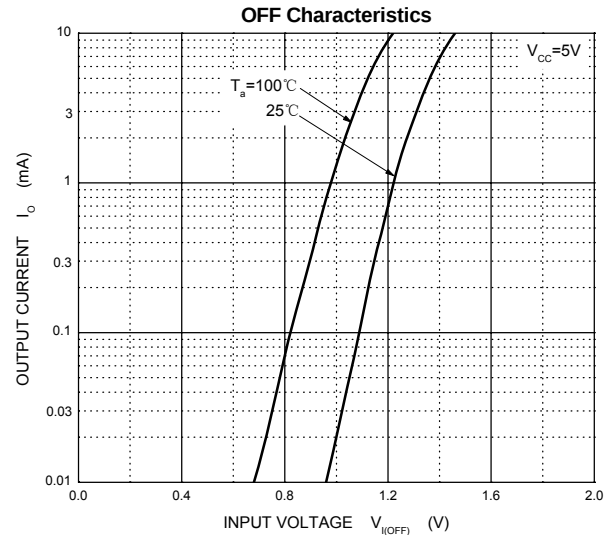
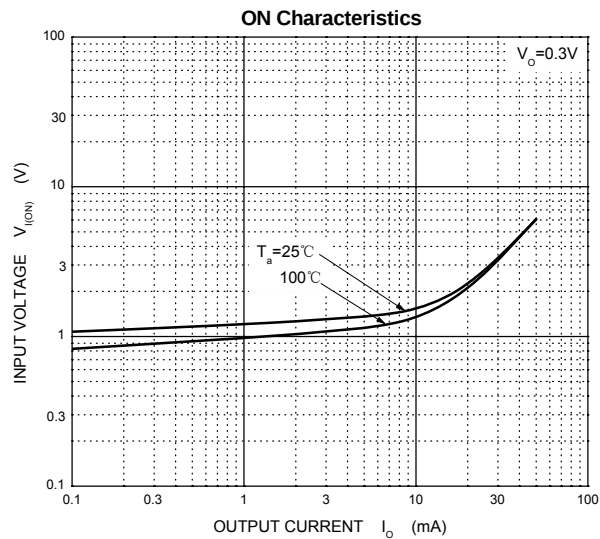
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Typical Characteristics





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Ordering Information:

Device PN	Packing
DTC114EUA -T ⁽¹⁾ G ⁽²⁾ -WS	Tape& Reel: 3 Kpcs/Reel

Note: (1) Packing code, Tape & Reel Packing

(2) RoHS product for packing code suffix "G" ; Halogen free product for packing code suffix "H"

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