

DTC114EUA

NPN Silicon Surface Mount Transistor

General description

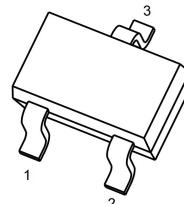
SOT-323 Bias Resistor Transistor.
 NPN Silicon Surface Mount Transistor with
 Monolithic Bias Resistor Network.

FEATURES

- With built-in bias resistors
- Simplifies Circuit Design
- Reduce a quantity of parts
- Manufacturing process

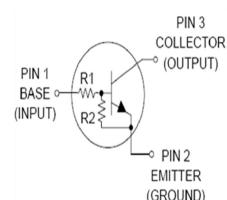
Marking : 24

SOT-323



1. IN
2. GND
3. OUT

Electrical Symbol:



Absolute Maximum Ratings (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector Emitter Voltage	V _{CEO}	50	V
Input Voltage	V _I	- 10 to + 40	V
Collector Current	I _C	100	mA
Power Dissipation	P _{tot}	150	mW
Junction Temperature	T _j	150	°C
Storage Temperature Range	T _{stg}	- 55 to + 150	°C

Electrical Characteristics (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
DC Current Gain	h _{FE}	V _{CE} = 5 V, I _C = 5 mA	30	-	-	-
Collector Base Cutoff Current	I _{CBO}	V _{CB} = 50 V	-	-	500	nA
Emitter Base Cutoff Current	I _{EBO}	V _{EB} = 5 V	-	-	0.88	mA
Collector Emitter Saturation Voltage	V _{CE(sat)}	I _C = 10 mA, I _B = 0.5 mA	-	-	0.3	V
Input on Voltage	V _{I(on)}	V _{CE} = 0.3 V, I _C = 10 mA	-	-	3	V
Input off Voltage	V _{I(off)}	V _{CE} = 5 V, I _C = 100 μA	0.5	-	-	V
Transition frequency	f _T	V _{CE} = 10 V, -I _E = 5 mA, f = 100 MHz	-	250	-	MHz
Input Resistance	R ₁		7	10	13	kΩ
Resistance Ratio	R ₂ / R ₁		0.8	1	1.2	-

DTC114EUA

Typical Characteristics

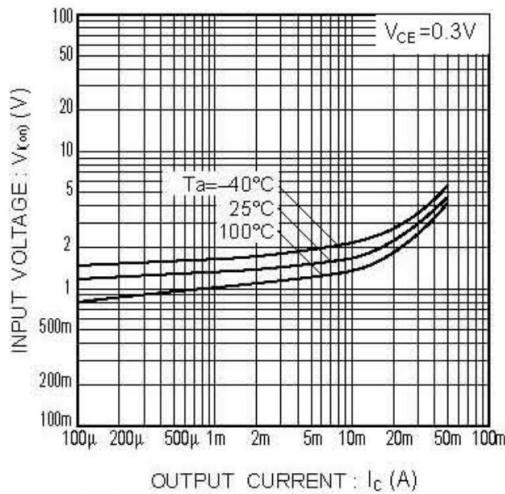


Fig.1 Input voltage vs. output current (ON characteristics)

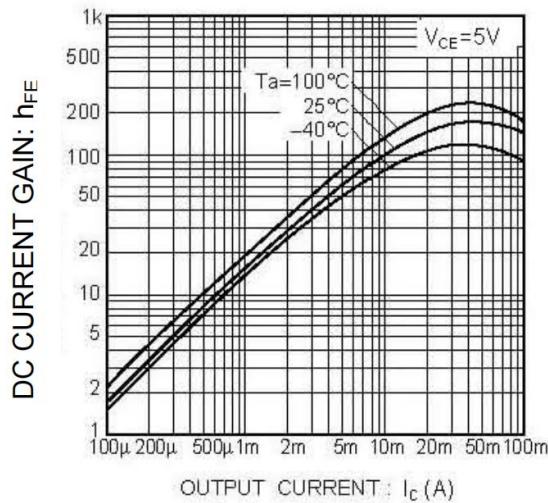


Fig.3 DC current gain vs. output current

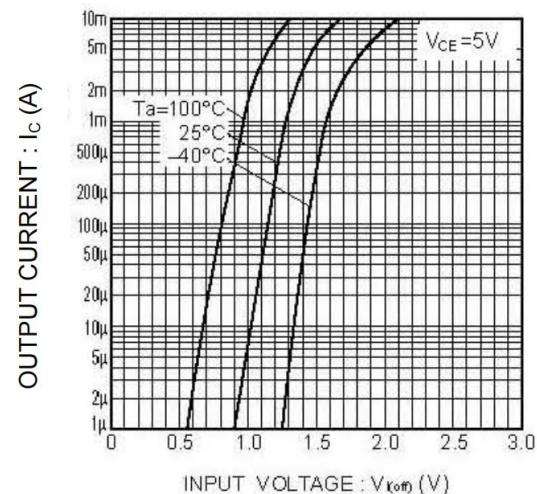


Fig.2 Output current vs. input voltage (OFF characteristics)

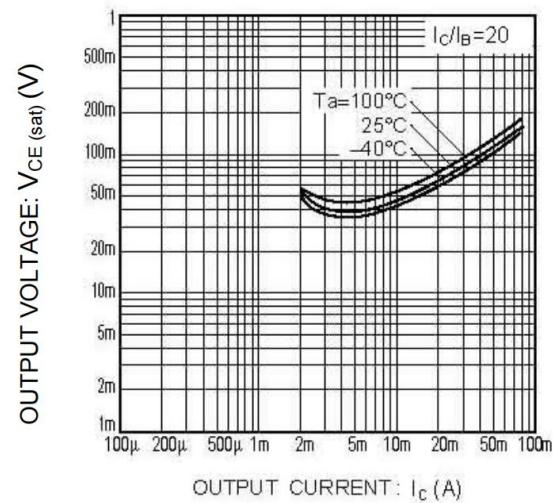
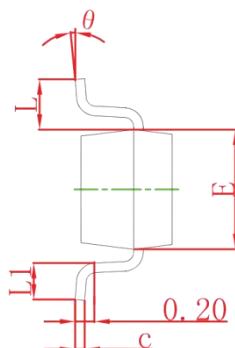
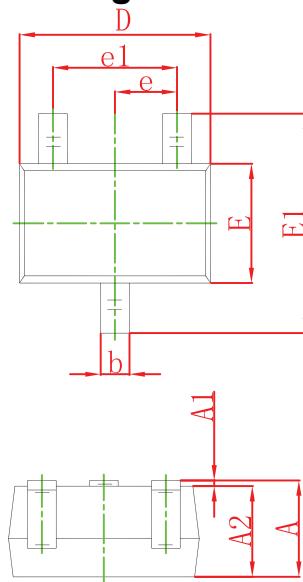


Fig.4 Output voltage vs. output current

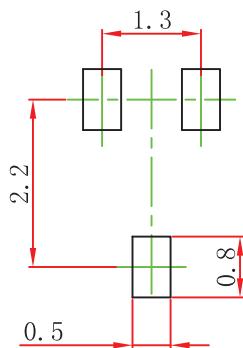
DTC114EUA

SOT-323 Package Outline



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
	0°	8°	0°	8°

SOT-23-3L Suggestion layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: ± 0.05 mm.
3. The pad layout is for reference purposes only.

Important Notice and Disclaimer

DOESHARE has used reasonable care in preparing the information included in this document, but DOESHARE does not warrant that such information is error free. DOESHARE assumes no liability whatsoever for any damages incurred by you resulting from errors in or omissions from the information included herein.

DOESHARE no warranty, representation or guarantee regarding the documents, circuits and products specification, DOESHARE reservation rights to make changes for any documents, products, circuits and specifications at any time without notice.

Purchasers are solely responsible for the choice, selection and use of the DOESHARE products and services described herein, and DOESHARE assumes no liability whatsoever relating to the choice, selection or use of the products and services described herein.

No license, express or implied, by implication or otherwise under any intellectual property rights of DOESHARE.

Resale of DOESHARE products with provisions different from the statements and/or technical features set forth in this document shall immediately void any warranty granted by DOESHARE for the DOESHARE product or service described herein and shall not create or extend in any manner whatsoever, any liability of DOESHARE.