

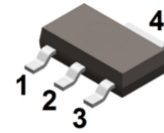
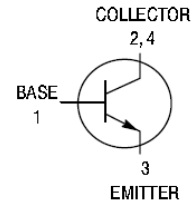


### Features

- Low saturation voltage
- Excellent  $h_{FE}$  linearity

### Mechanical Data

- Case: SOT-223
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208



SOT-223

### Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
D882R	SOT-223	4000 pcs / Tape & Reel	D882R

### Maximum Ratings (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Collector-Base Breakdown Voltage	$V_{CBO}$	40	V
Collector-Emitter Breakdown Voltage	$V_{CEO}$	30	V
Emitter-Base Breakdown Voltage	$V_{EBO}$	5	V
Collector Current (Continuous)	$I_C$	3	A
Collector Current (Peak)	$I_{CM}$	5	A

### Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation ( $T_A = 25^\circ\text{C}$ ) *1	$P_D$	3.1	W
Thermal Resistance Junction-to-Air *1	$R_{\theta JA}$	40	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	4	$^\circ\text{C/W}$
Junction Temperature	$T_J$	-55 ~ +150	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55 ~ +150	$^\circ\text{C}$

Note 1: The data tested by surface mounted on a 1 inch<sup>2</sup> FR-4 board with 2OZ copper



### Electrical Characteristics (@ T<sub>A</sub> = 25°C unless otherwise specified)

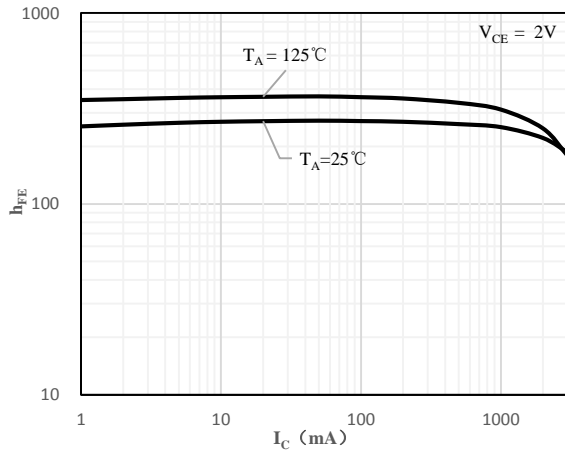
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> = 100μA, I <sub>E</sub> = 0	40	-	-	V
Collector-Emitter Breakdown Voltage	V <sub>CEO(SUS)</sub>	I <sub>C</sub> = 10mA, I <sub>B</sub> = 0	30	-	-	V
Emitter-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = 100μA, I <sub>C</sub> = 0	6	-	-	V
Collector Cut-off Current	I <sub>CBO</sub>	V <sub>CB</sub> = 40V, I <sub>E</sub> = 0	-	-	1	μA
Collector Cut-off Current	I <sub>CEO</sub>	V <sub>CE</sub> = 30V, I <sub>B</sub> = 0	-	-	1	μA
Base Cut-off Current	I <sub>EBO</sub>	V <sub>EB</sub> = 3V, I <sub>C</sub> = 0	-	-	1	μA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> = 2V, I <sub>C</sub> = 20mA	30	-	-	-
		V <sub>CE</sub> = 2V, I <sub>C</sub> = 1A	60	-	400	-
Collector-emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = 2A, I <sub>B</sub> = 0.2A	-	-	0.5	V
Base-emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> = 2A, I <sub>B</sub> = 0.2A	-	-	2	V
Output Capacitance	C <sub>OBO</sub>	V <sub>CB</sub> = 10V, I <sub>E</sub> = 0, f = 1MHz	-	45	-	pF
Transition Frequency	f <sub>T</sub>	I <sub>C</sub> = 0.1A, V <sub>CE</sub> = 5V	-	90	-	MHZ

### Classification of h<sub>FE</sub>

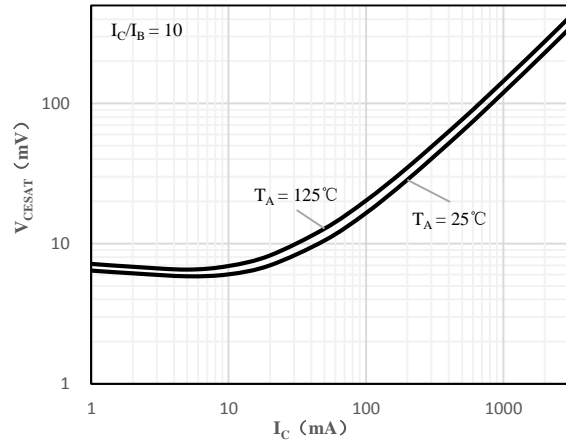
Rank	R	Q	P	E
Range	60-120	100-200	160-320	200-400



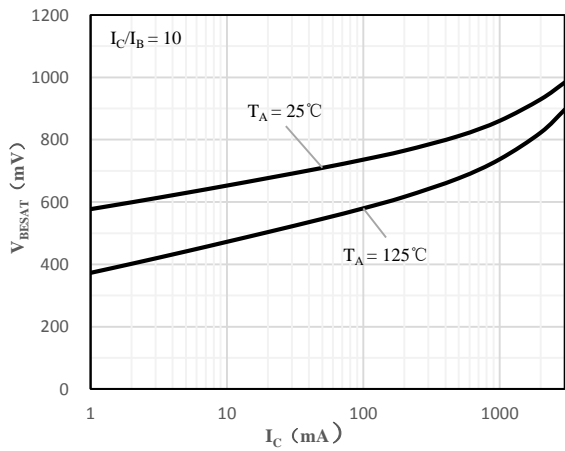
### Ratings and Characteristic Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)



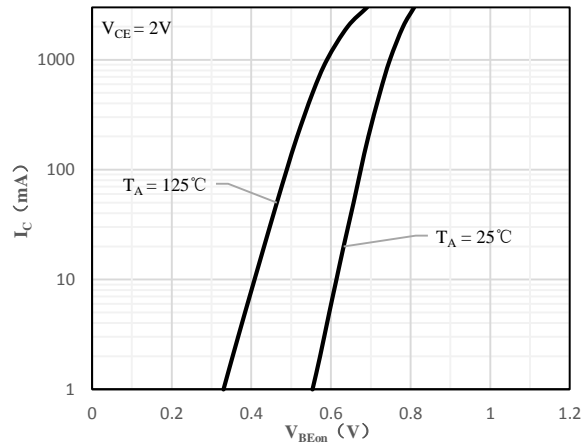
**Fig 1  $h_{FE}$  vs.  $I_C$**



**Fig 2  $V_{CE(sat)}$  vs.  $I_C$**



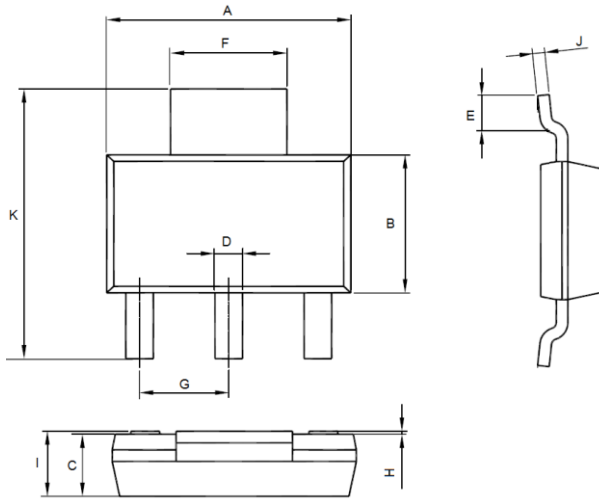
**Fig 3  $V_{BE(sat)}$  vs.  $I_C$**



**Fig 4  $V_{BE(ON)}$  vs.  $I_C$**



### Package Outline Dimensions (Unit: mm)



SOT-223		
Dimension	Min.	Max.
A	6.10	6.50
B	3.30	3.70
C	1.50	1.70
D	0.66	0.82
E	0.90	1.15
F	2.90	3.10
G	2.20	2.40
H	0.02	0.10
I	1.52	1.80
J	0.20	0.40
K	6.70	7.30

### Mounting Pad Layout (Unit: mm)

#### SOT-223

