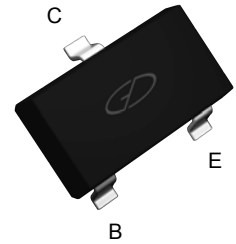


## Features

- Ideally Suited for Automatic Insertion
- RoHS Compliant



Package: SOT-23

## Applications

- For Switching and RF Amplifier Applications

## Absolute Maximum Ratings (T<sub>A</sub> = 25 °C unless otherwise noted)

Parameter	Symbol	Rating	UNIT
Collector-Base Voltage	V <sub>CB0</sub>	80	V
Collector-Emitter Voltage	V <sub>CEO</sub>	65	V
Emitter-Base Voltage	V <sub>EBO</sub>	6.0	V
Peak Collector Current	I <sub>cm</sub>	300	mA
Collector Current-Continuous	I <sub>C</sub>	100	mA
Collector Power Dissipation	P <sub>C</sub>	350	mW
Operating Temperature	T <sub>J</sub>	-55 to +150	°C
Storage Temperature Range	T <sub>STG</sub>	-55 to +150	°C

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector Cut-off Current	I <sub>CB0</sub>	V <sub>CB</sub> =30V I <sub>E</sub> =0			0.015	uA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> =5.0V I <sub>C</sub> =2.0mA	110		450	
Collector-Emitter Saturation Voltage	V <sub>CE(sat)1</sub>	I <sub>C</sub> =10mA I <sub>B</sub> =0.5mA		0.09	0.25	V
	V <sub>CE(sat)2</sub>	I <sub>C</sub> =100mA I <sub>B</sub> =5.0mA		0.2	0.6	V
Base-Emitter Saturation Voltage	V <sub>BE(sat)1</sub>	I <sub>C</sub> =10mA I <sub>B</sub> =0.5mA		0.7		V
	V <sub>BE(sat)2</sub>	I <sub>C</sub> =100mA I <sub>B</sub> =5.0mA		0.9		V
Base-Emitter Voltage	V <sub>BE(1)</sub>	V <sub>CE</sub> =5.0V I <sub>C</sub> =2.0mA	0.58		0.7	V
	V <sub>BE(2)</sub>	V <sub>CE</sub> =5.0V I <sub>C</sub> =10mA			0.75	V
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> =5.0V I <sub>E</sub> =10mA f=100MHz		300		MHz
Collector Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V I <sub>E</sub> =0 f=1.0MHz		2.5	4.5	pF
Noise Figure	NF	V <sub>CE</sub> =6.0V I <sub>C</sub> =0.1mA R <sub>g</sub> =10K Ω f=1.0KHz		1.0	10	dB

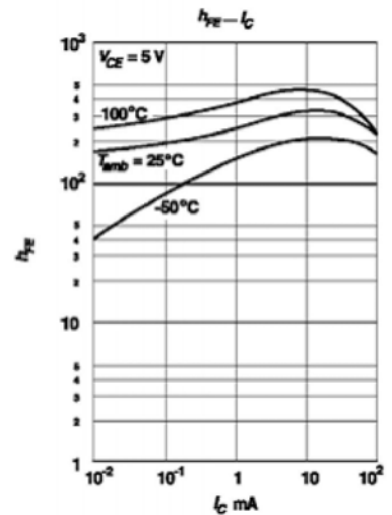
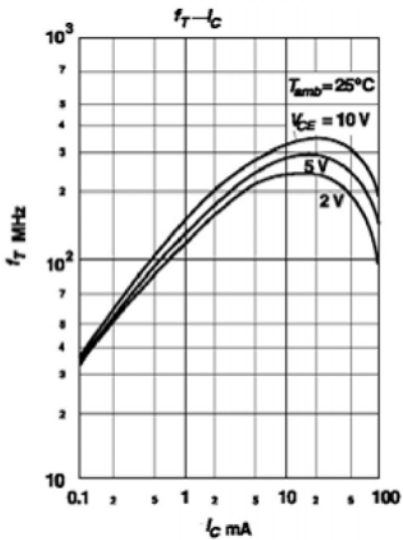
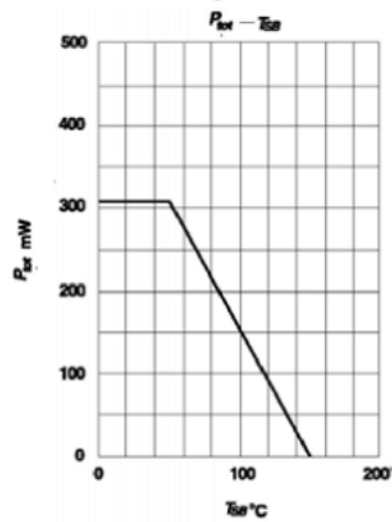
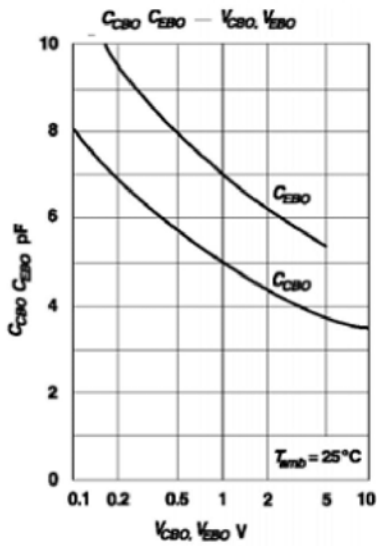
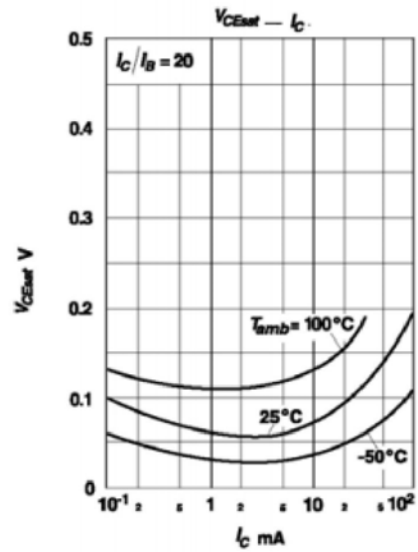
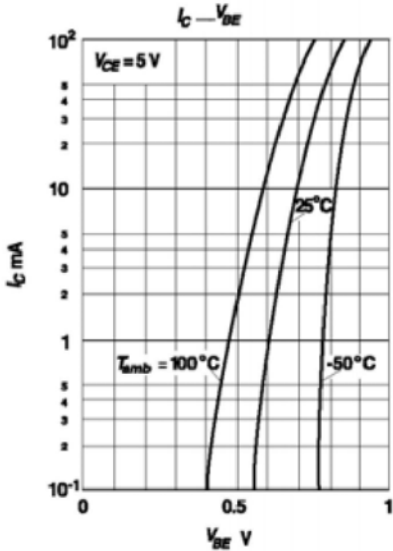
## Thermal Characteristics

Parameter	Symbol	Value	Unit
Typical Thermal Resistance from Junction to Ambient	R <sub>THJA</sub>	410	°C/W

## h<sub>FE</sub> Classifications and Markings

h <sub>FE</sub> Classification	BC846A	BC846B
h <sub>FE</sub> Range	110 - 220	200 - 450
Marking	H1A	H1B

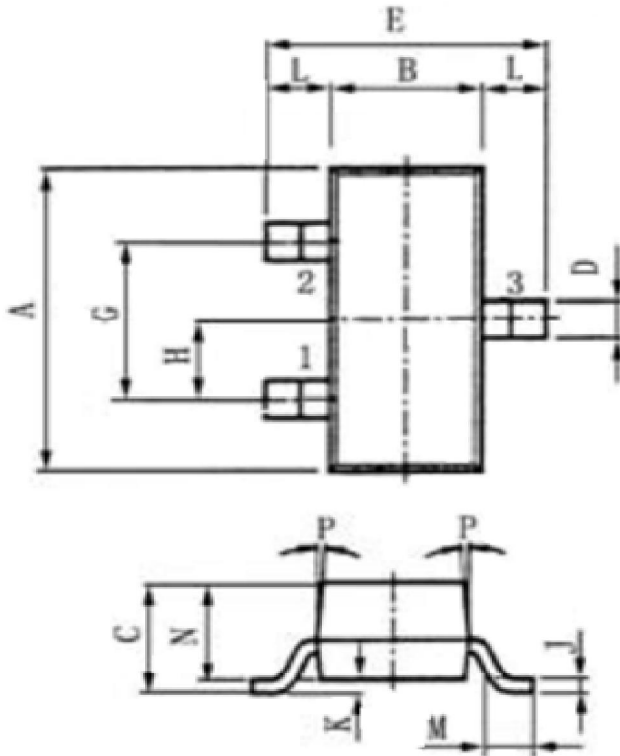
**Ratings and Characteristic Curves**



## BC846x Series NPN Small Signal Transistor

### Package Outline Dimensions

(SOT-23 in millimeters)



A	2.9±0.2
B	1.30+0.20/-0.15
C	1.30MAX
D	0.40+0.15/-0.05
E	2.40+0.30/-0.20
G	1.9±0.2
H	0.95±0.1
J	0.10+0.10/-0.05
K	0.00-0.10
L	0.55±0.1
M	0.2MIN
N	1.00+0.20/-0.10
P	7°