BORN SEMICONDUCTOR

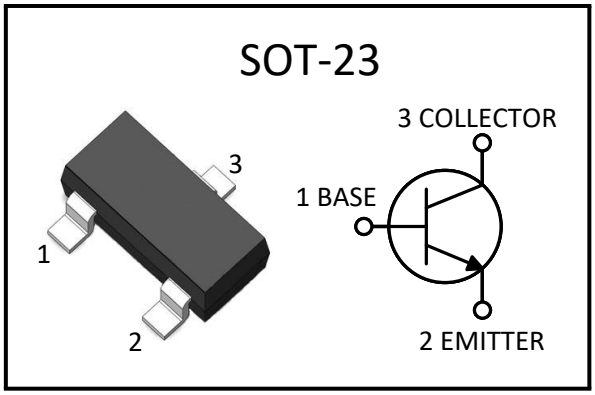
BC846/BC847/BC848

NPN Plastic-Encapsulate Transistor

Features

- V_{CE}@BC846=65V
- V_{CE}@BC847=45V
- V_{CE}@BC848=30V
- I_C=0.1A
- f_T=100MHZ @V_{CE}=5V, I_C=10mA,f=30MHZ

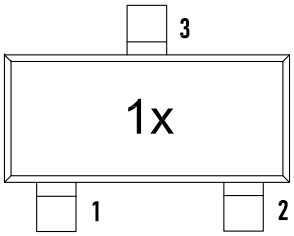
Package



General Description

- Epitaxial planar die constructio
- SOT-23 Plastic Package

Marking



Ordering information

Order code	Package	Marking	Base qty	Delivery mode
BC846A	SOT-23	1A	3K	Tape and reel
BC846B	SOT-23	1B	3K	Tape and reel
BC846C	SOT-23	1C	3K	Tape and reel
BC847A	SOT-23	1E	3K	Tape and reel
BC847B	SOT-23	1F	3K	Tape and reel
BC847C	SOT-23	1G	3K	Tape and reel
BC848A	SOT-23	1J	3K	Tape and reel
BC848B	SOT-23	1K	3K	Tape and reel
BC848C	SOT-23	1L	3K	Tape and reel

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BC846/BC847/BC848

NPN Plastic-Encapsulate Transistor

Absolute Maximum Ratings @T_A=25°C unless otherwise noted

Symbol	Parameter	Part	Value	Unit
V_{CBO}	Collector-Base Voltage	BC846	80	V
		BC847	50	
		BC848	30	
V_{CEO}	Collector-Emitter Voltage	BC846	65	V
		BC847	45	
		BC848	30	
V_{EBO}	Emitter-Base Voltage	–	6	V
I_C	Collector Current	–	100	mA
P_C	Collector Power Dissipation	–	200	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	–	625	°C/W
T_J	Junction Temperature Range	–	-55 to +150	°C
T_{stg}	Storage Temperature Range	–	-55 to +150	°C

Electrical Characteristics (T_A=25°C, unless otherwise specified)

Symbol	Parameter	PartNumber	Test condition	Min.	Max.	Unit
$V_{(BR)CBO}$	Collector-base breakdown voltage	BC846	I_C=10μA, I_E=0	80	–	V
		BC847		50	–	
		BC848		30	–	
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	BC846	I_C=10mA,I_B=0	65	–	V
		BC847		45	–	
		BC848		30	–	
$V_{(BR)EBO}$	Emitter-base breakdown voltage	–	I_E=10μA,I_C=0	6	–	V
I_{CBO}	Collector cut-off current	BC846	V_{CB}=70V,I_E=0	–	100	nA
		BC847	V_{CB}=50V,I_E=0	–		
		BC848	V_{CB}=30V,I_E=0	–		
I_{EBO}	Emitter cut-off current	–	V_{EB}=5V,I_C=0	–	100	nA
h_{FE}	DC current gain	BC846A BC847A BC848A	V_{CE}=5V,I_C=2mA	110	220	–
		BC846B BC847B BC848B		200	450	–
		BC846C BC847C BC848C		420	800	–
$V_{CE(sat)}$	Collector-emitter saturation voltage	–	I_C=100mA,I_B=5mA	–	0.5	V
$V_{BE(sat)}$	Base-emitter saturation voltage	–		–	1.1	V
C_{ob}	Collector capactiance	–	V_{CB}=10V,f=1MHz	–	4.5	pF
f_T	Transition frequency	–	V_{CE}=5V, I_C=10mA,f=30MHz	100	–	MHz

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BC846/BC847/BC848

NPN Plastic-Encapsulate Transistor

Typical Performance Characteristics(T_J = 25 °C, unless otherwise noted)

Figure 1 :Static Characteristics

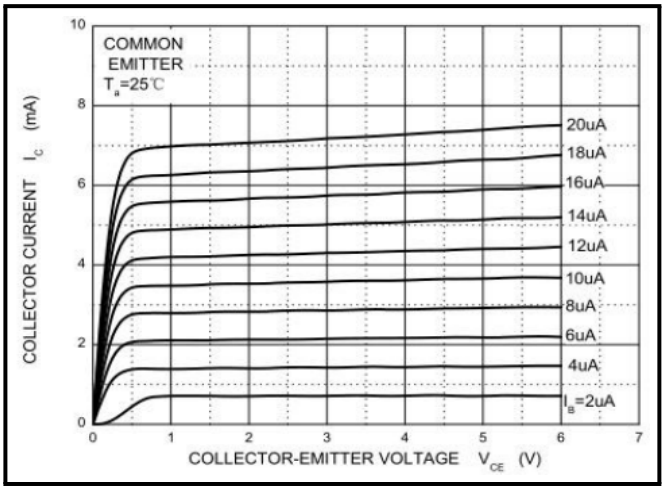


Figure 2 :h_{FE}— I_C

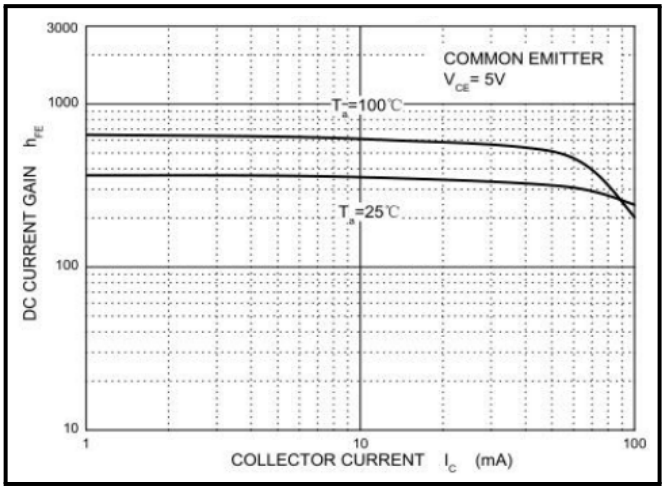


Figure 3 : $V_{BE(sat)}$— I_C

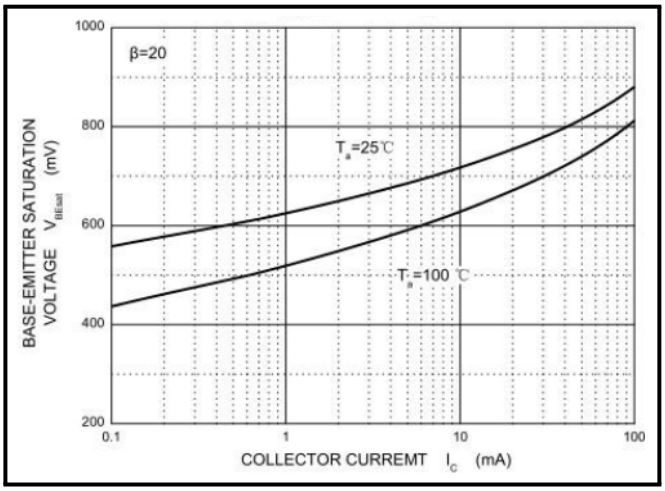
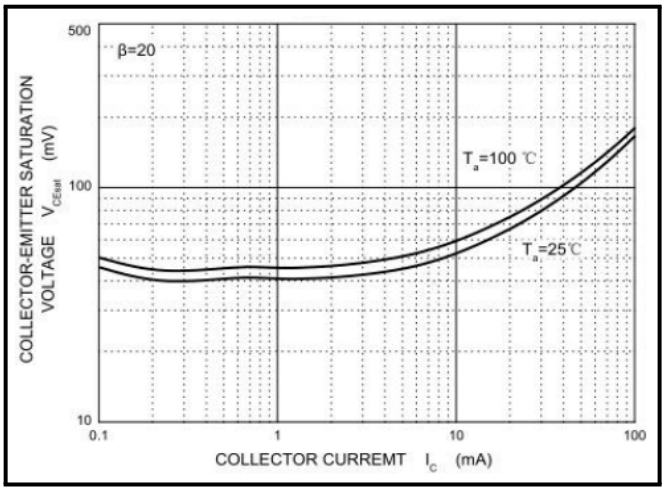


Figure 4 : $V_{CE(sat)}$— I_C



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Typical Performance Characteristics(T_J = 25 °C, unless otherwise noted)

Figure 5 :I_C—— V_{BE}

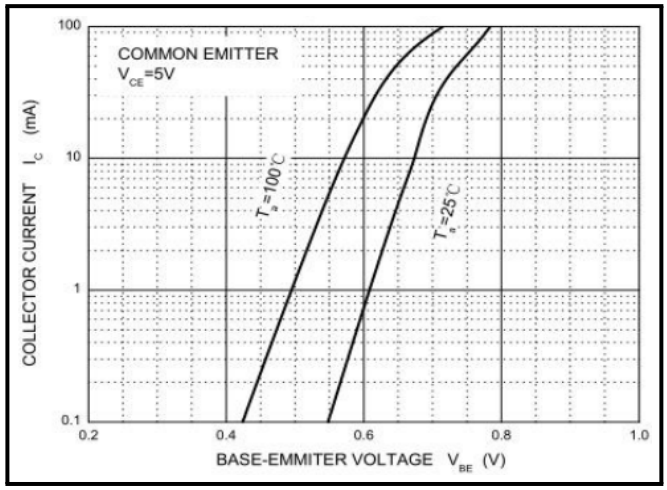


Figure 6 :f_T —— I_C

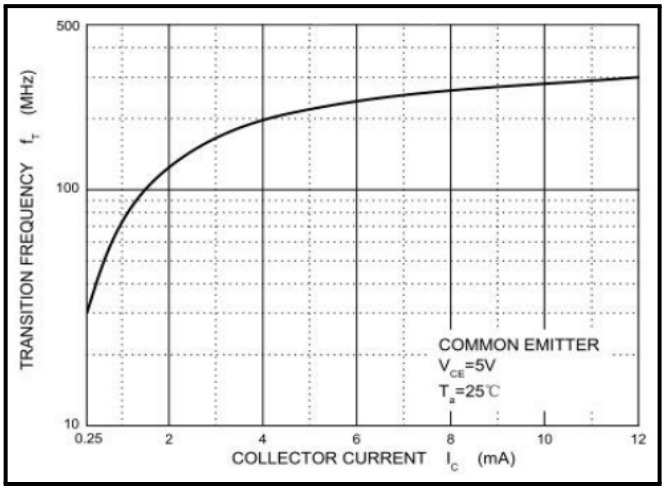


Figure 7:C_{ob}/C_{ib}—— V_{CB}/V_{EB}

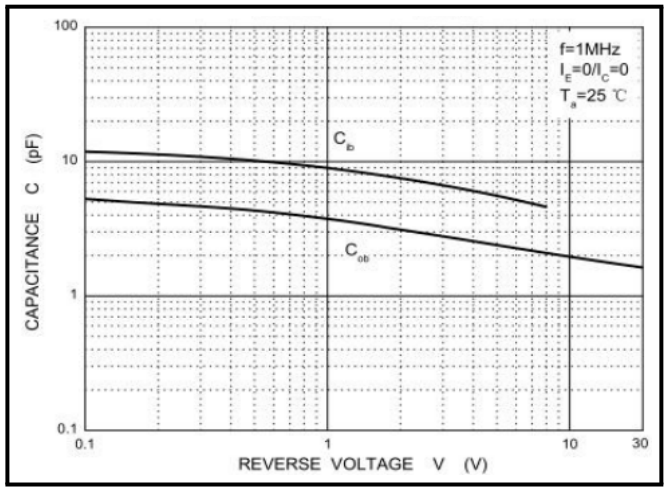
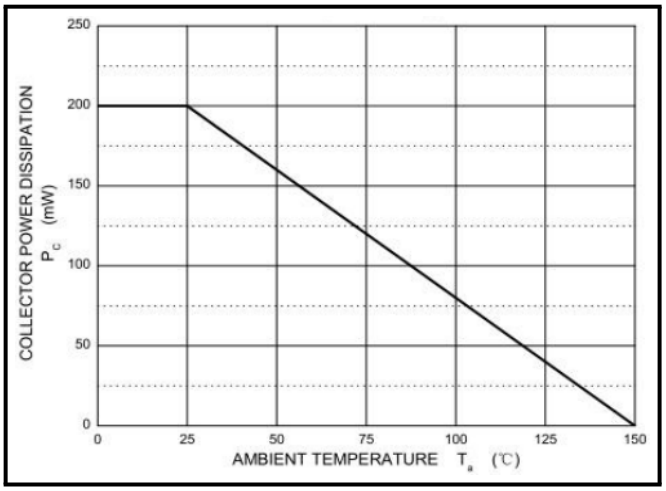


Figure 8:P_C ——T_A



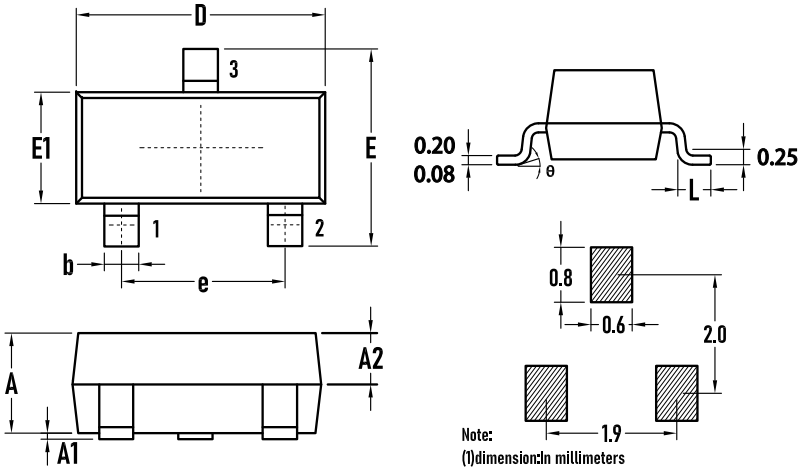
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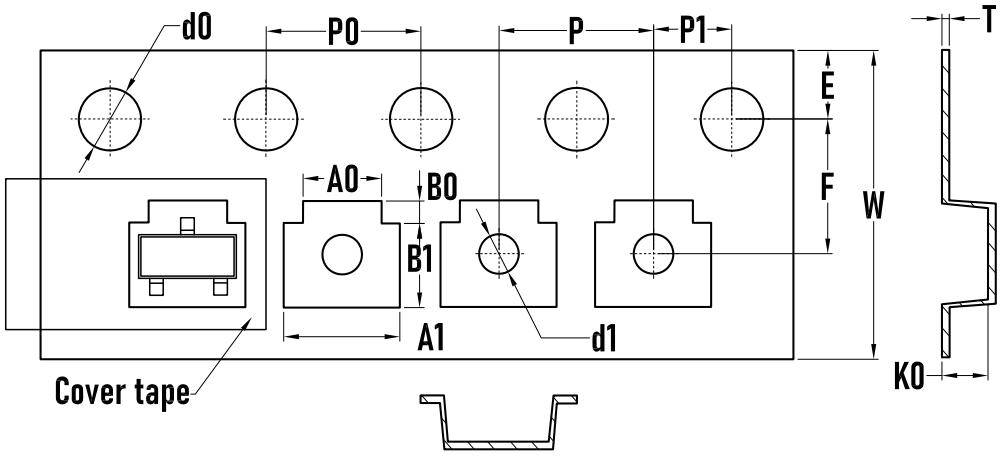
NPN Plastic-Encapsulate Transistor

Outline Drawing - SOT-23



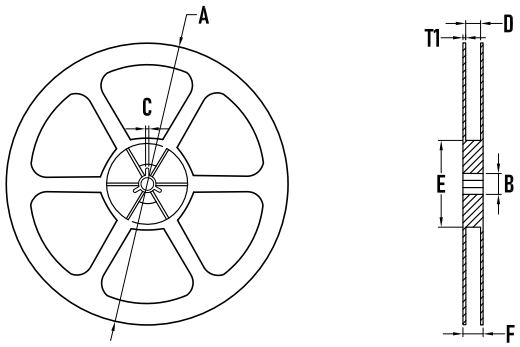
SYMBOL	MILLIMETER		
	MIN.	Typ.	MAX.
A	0.90	1.00	1.10
A1	0.01	–	0.10
A2	0.50	0.60	0.70
D	2.80	2.90	3.00
b	0.25	0.35	0.45
E	2.10	2.30	2.50
E1	1.20	1.30	1.40
e	1.80	1.90	2.00
L	0.25	0.35	0.45
θ	0	–	8°

Packaging Tape - SOT-23



SYMBOL	MILLIMETER
A0	2.10±0.10
A1	3.10±0.10
B0	0.65±0.10
B1	2.75±0.10
d0	1.55±0.10
d1	1.00±0.05
E	1.75±0.10
F	3.50±0.10
K0	1.10±0.10
P	4.00±0.10
P0	4.00±0.10
P1	2.00±0.10
W	8.00±0.30
T	0.20 ±0.05

Packaging Reel



SYMBOL	MILLIMETER
A	177.8±0.2
B	3.1
C	13.50
D	9.6±0.3
E	75±0.2
F	12.3±0.3
T1	1.0±0.2
Quantity	3000PCS

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