

BC846A-BC848C

NPN SURFACE MOUNT SMALL SIGNAL TRANSISTOR IN SOT23

Features

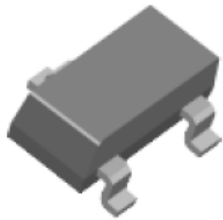
- Ideally Suited for Automatic Insertion
- Complementary PNP Types Available
- For switching and AF Amplifier
- RoHS compliant package

Mechanical Data

- Case: SOT-23 Molded plastic
- Epoxy: UL94V-O rate flame retardant

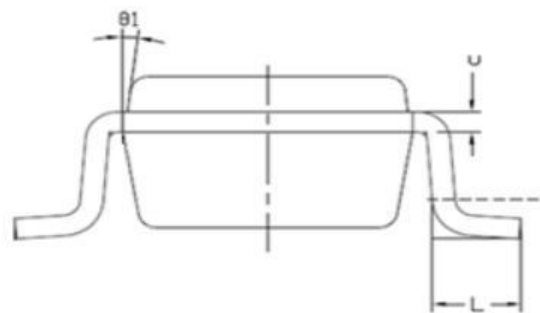
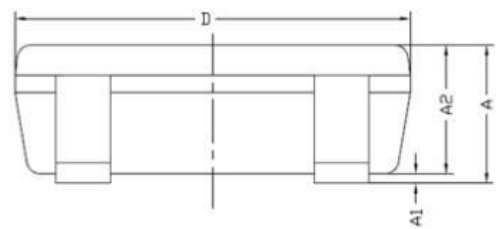
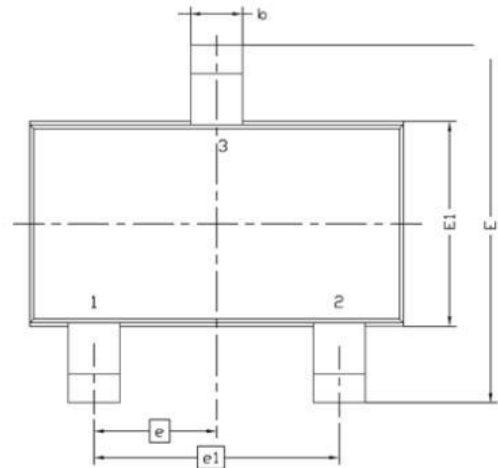
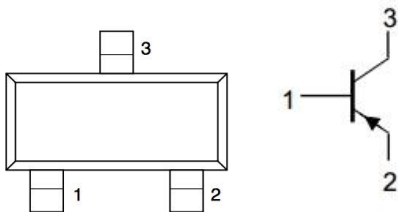
Packing & Order Information

3,000/Reel



**RoHS
COMPLIANT**

Graphic symbol



Symbol	MILLIMETERS	
	MIN	MAX
A	0.8	1.2
A1	0	0.1
A2	0.7	1.1
b	0.3	0.5
c	0.1	0.2
D	2.7	3.1
E	2.6	3
E1	1.4	1.8
e	0.95 BSC	
e1	1.9 BSC	
L	0.3	0.6
theta1	7° NOM	

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MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Maximum Ratings (Tc=25°C unless otherwise noted)

Symbol	Parameter	BC846A,B	BC847A,B	BC848A,B,C	Unit
VCEO	Collector-Emitter Voltage	65	45	30	Vdc
VCBO	Collector-Base Voltage	80	50	30	Vdc
VEBO	Emitter-Base Voltage	6	6	-5	Vdc
Ic	Collector Current Continuous	100	100	100	mAdc

THERMAL CHARACTERISTICS

Symbol	Parameter	Max	Unit
PD(Ta=25°C)	Total Device Dissipation	225	mW
	FR-5 Board(1), TA=25° Derate above 25°	1.8	mW/°C
PD(Ta=25°C)	Total Device Dissipation	300	mW
	Alumina Substrate, TA=25° Derate above 25°	2.4	mW/°C
RθJA	Thermal Resistance Junction to Ambient	80	V
TJ ,Tstg	Junction and Storage Temperature	55 to +150	°C

Electrical characteristics (Tc=25°C unless otherwise noted)

OFF CHARACTERISTICS

Symbol	Parameter		MIN	TYP	MAX	UNIT
V(BR)CEO	Collector-Emitter Breakdown Voltage (Ic=-10mAdc,IB=0)	BC846A,B	65			V
		BC847A,B	45			V
		BC848A,B,C	30			V
V(BR)CBO	Collector-Base Breakdown Voltage (Ic=-10μAdc,IE=0)	BC846A,B	80			V
		BC847A,B	50			V
		BC848A,B,C	30			V
V(BR)EBO	Emitter-Base Breakdown Voltage (IE=-10μAdc,Ic=0)	BC846A,B	6			V
		BC847A,B	6			V
		BC848A,B,C	5			V
IBO	Collector Cutoff Current V					V
	(VCB=-30v)				15	nA
	(VcB=-30Vdc,TA=150°C)				5	uA

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ON CHARACTERISTICS

Symbol	Parameter		MIN	TYP	MAX	UNIT
VCE(sat)	Collector-Emitter Saturation Voltage					V
	(Ic=10mA, IB=-0.5mA)				0.25	V
	(Ic=100mA, IB=-5.0mA)				0.6	V
HFE	DC Current Gain	BC846A,B		90		
	(Ic=10uA, VCE=-5.0V)	BC847A,B		150		
		BC848A,B,C		270		
	(Ic=2.0mA, VCE=-5.0V)	BC846A,B	125	180	250	
		BC847A,B	220	290	475	
BC848A,B,C		420	520	800		
VBE(sat)	Base-Emitter Saturation Voltage					V
	(Ic=10mA, IB=-0.5mA)			0.7		V
	(Ic=100mA, IB=-5.0mA)			0.9		V
VBE(on)	Base-Emitter Voltage					V
	(Ic=2.0mA, VCE=-5.0V)		580	660	700	mV
	(Ic=10mA, VCE=-5.0V)				770	mV

ON CHARACTERISTICS

Symbol	Parameter		MIN	TYP	MAX	UNIT
fT	Current-Gain-Bandwidth Product (Ic=10mA, VCE=-5.0V, f=100MHz)		100			MHz
Cobo	Output Capacitance (VCB=-10V, IE=0, f=1.0MHz)				4.5	pF
NF	Noise Figure (VCE=-5.0V, IC=200uA, Rs=2.0k, f=1.0KHz, BW=200Hz)				10	dB

DEVICE MARK

BC846A	1A
BC846B	1B
BC847A	1E
BC847B	1F
BC848A	1J
BC848B	1K
BC848C	

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RATINGS AND CHARACTERISTIC CURVES

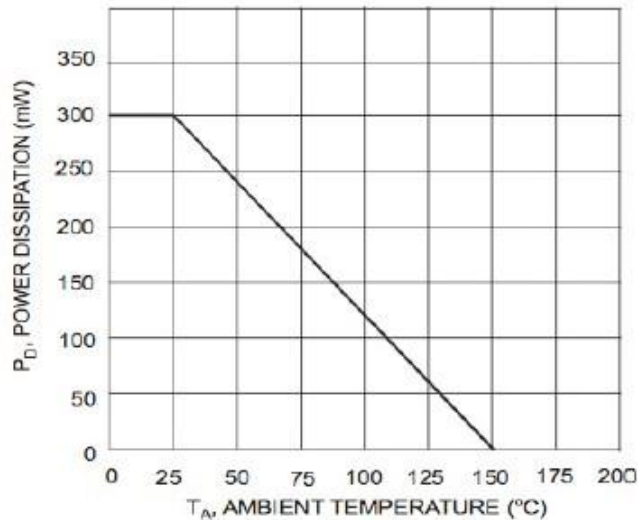


Fig. 1, Max Power Dissipation vs Ambient Temperature

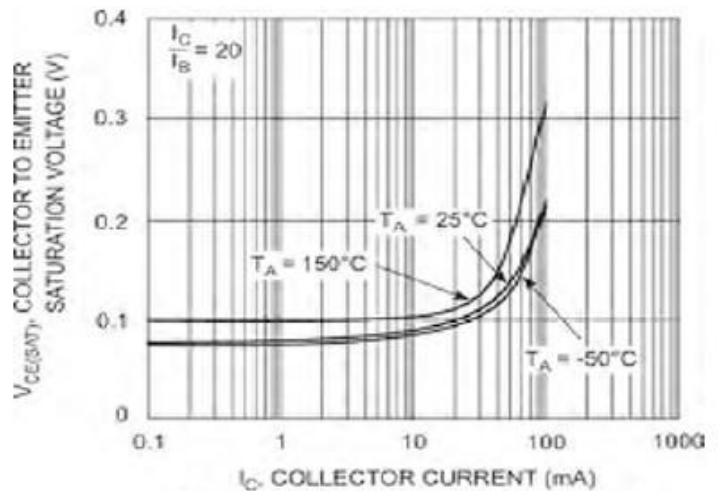


Fig. 2, Collector Emitter Saturation Voltage vs. Collector Current

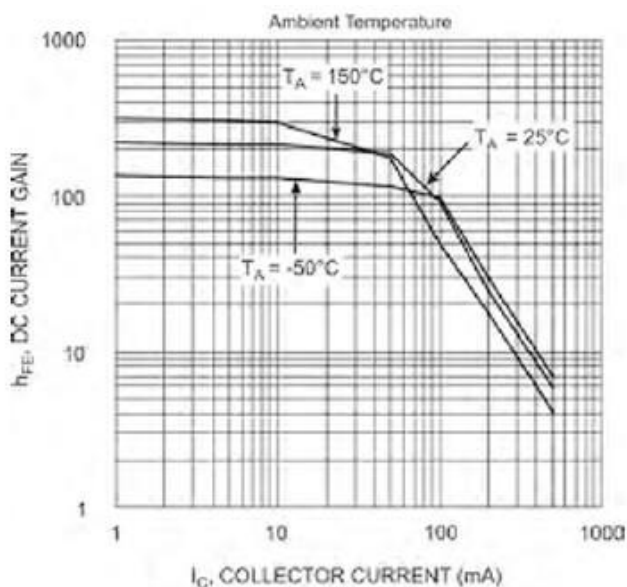


Fig. 3, DC Current Gain vs. Collector Current

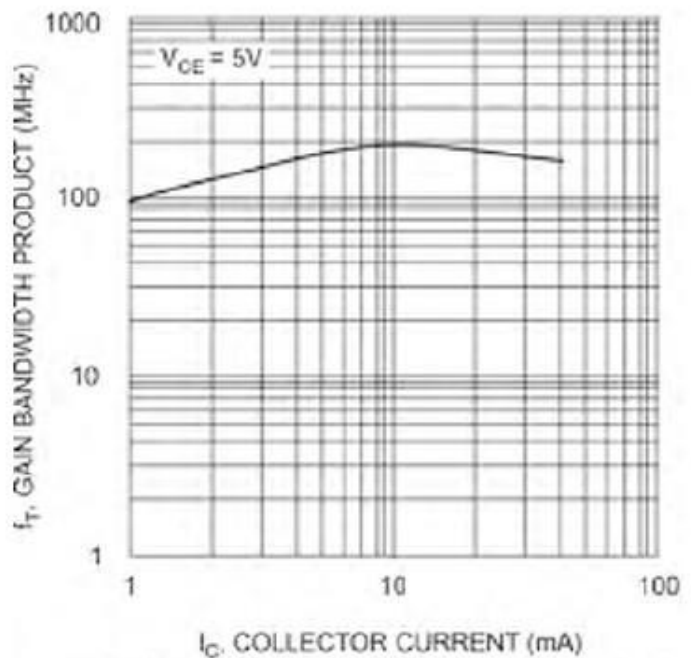


Fig. 4, Gain Bandwidth Product vs Collector Current

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