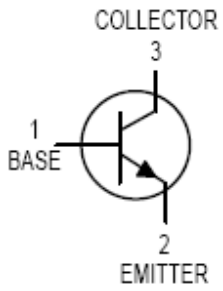
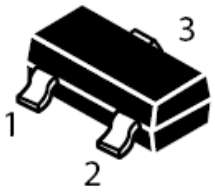
LITE-ON SEMICONDUCTORS

BC847W

NPN General Purpose Transistor





FEATURES

- Ideally suited for automatic insertion
- For Switching and AF Amplifier Applications

MECHANICAL DATA

- Case: SOT-323 Plastic
- Case material: “Green” molding compound, UL flammability classification 94V-0, (No Br. Sb. Cl)
- Lead Free in RoHS 2002/95/EC Compliant

Maximum Ratings @ T_A = 25℃

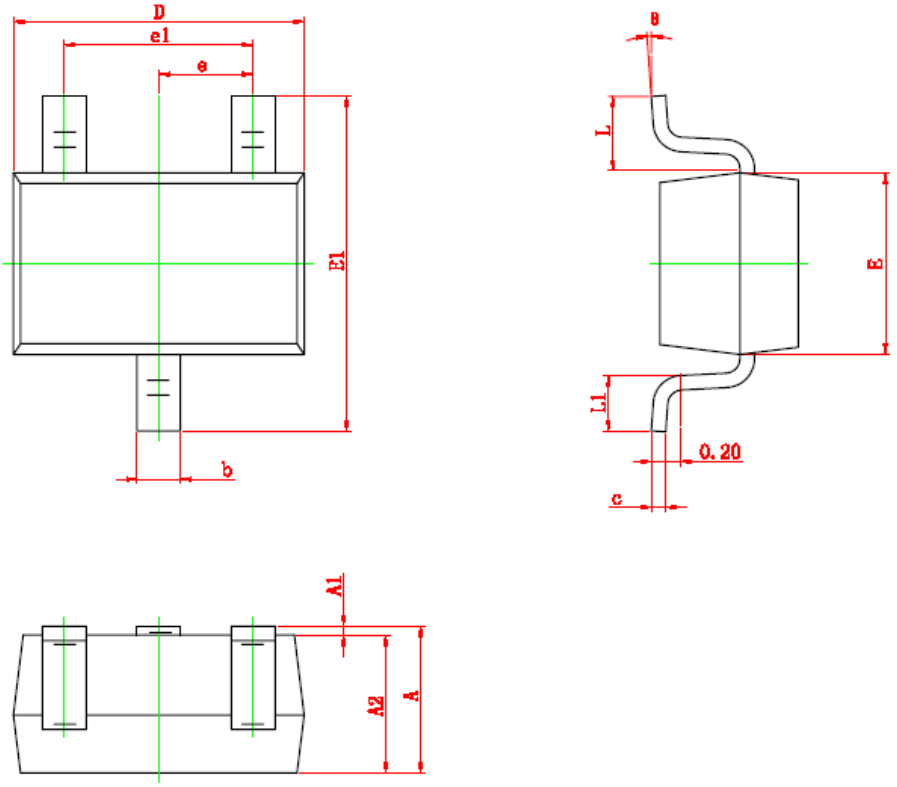
Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	45	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current -Continuous	I_C	100	mA
Collector Power Dissipation	P_C	150	mW
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{STG}	-55~+150	℃

Electrical Characteristics @ T_A = 25℃ unless otherwise specified

Characteristic	Test Condition		Symbol	Min.	Typ.	Max.	Unit
Collector-base breakdown voltage	I_C=10μA,I_E=0		V_{CBO}	50			V
Collector-emitter breakdown voltage	I_C=10mA,I_B=0		V_{CEO}	45			V
Emitter-base breakdown voltage	I_E=1μA,I_C=0		V_{EBO}	6			V
Collector-base cut-off current	V_{CB}=30V		I_{CBO}			15	nA
DC current gain	V_{CE}=5V,I_C=10uA	AW BW CW	h_{FE1}		90 150 270		
	V_{CE}=5V,I_C=2mA	AW BW CW	h_{FE2}	110 200 420		220 450 800	
Collector-emitter saturation voltage	I_C=10mA,I_B=0.5mA I_C=100mA,I_B=5mA		V_{CE}(sat)			0.25 0.6	V
Base-emitter saturation voltage	I_C=10mA,I_B=0.5mA I_C=100mA,I_B=5mA		V_{BE}(sat)		0.7 0.9		V
Base-emitter voltage	I_C=2mA,V_{CE}=5V I_C=10mA,V_{CE}=5V		V_{BE}	580	660	700 770	mV
Transition frequency	V_{CE}=5V,I_C=10mA, f=100MHz		f_T	100			MHz
Collector output capacitance	V_{CB}=10V,f=1MHz		C_{ob}			4.5	pF
Noise figure	VCE=5V,Ic=0.2mA, f=1KHz,RS=2KΩ Bandwidth=200Hz	BW CW	NF			10 4	dB

REV. 2, Jun-2012, KSNR07

SOT-323 Outline Dimension



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
θ	0°	8°	0°	8°

Device Marking :

Device P/N	Classification of h_{FE}	Marking code
BC847AW	110-220	1E
BC847BW	200-450	1F
BC847CW	420-800	1G

Electrical characteristic curves

Fig.1 DC Current Gain

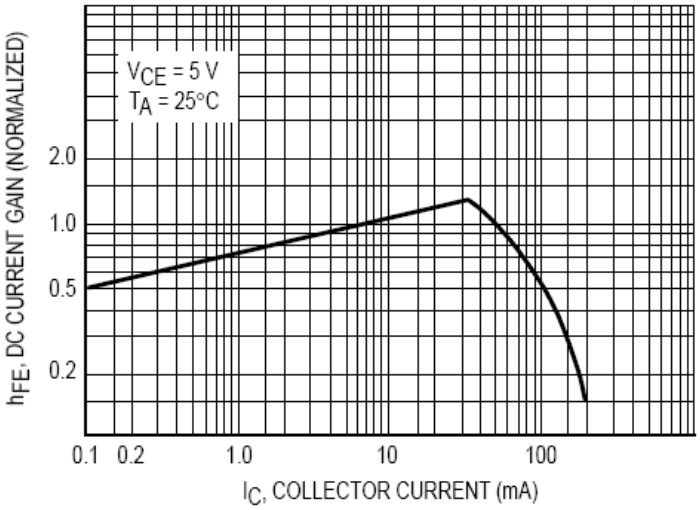


Fig.2 "Saturation" and "On" Voltages

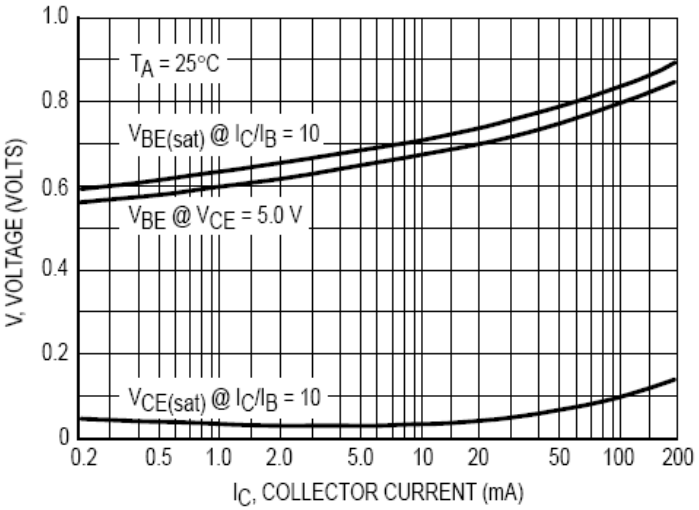


Fig.3 Collector Saturation Region

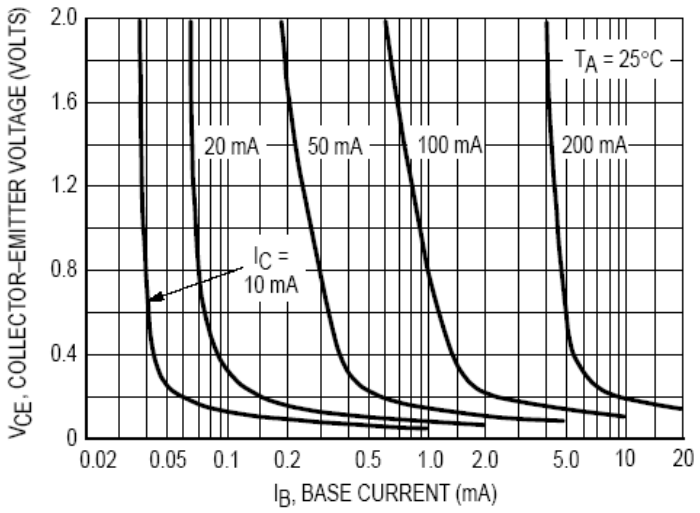


Fig.4 Base–Emitter Temperature Coefficient

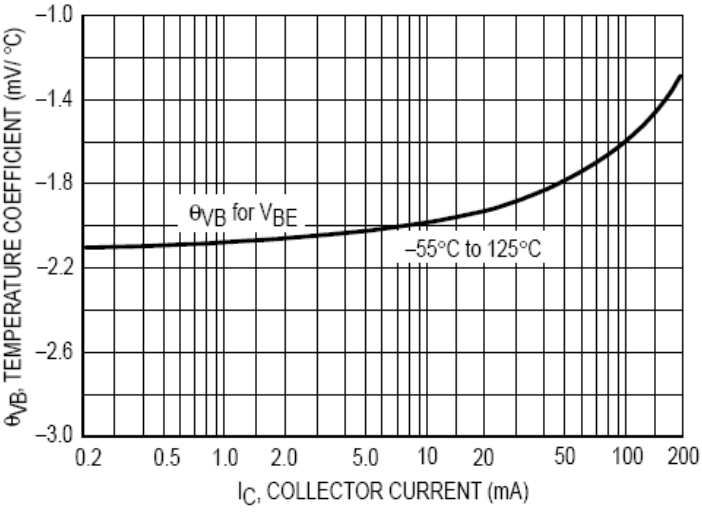


Fig.5 Capacitances

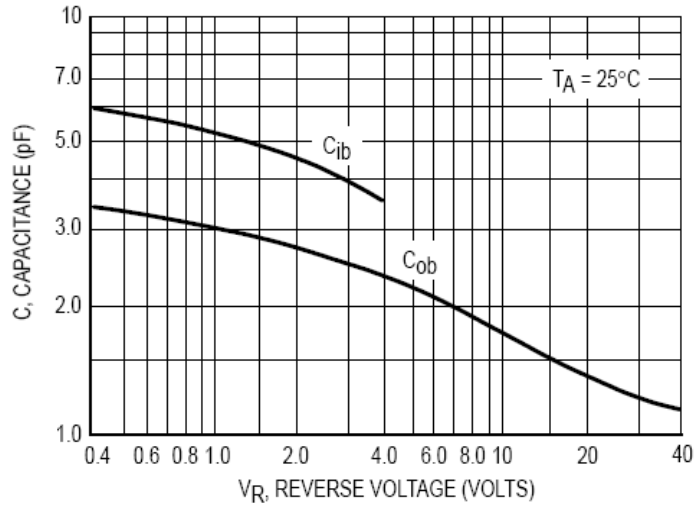
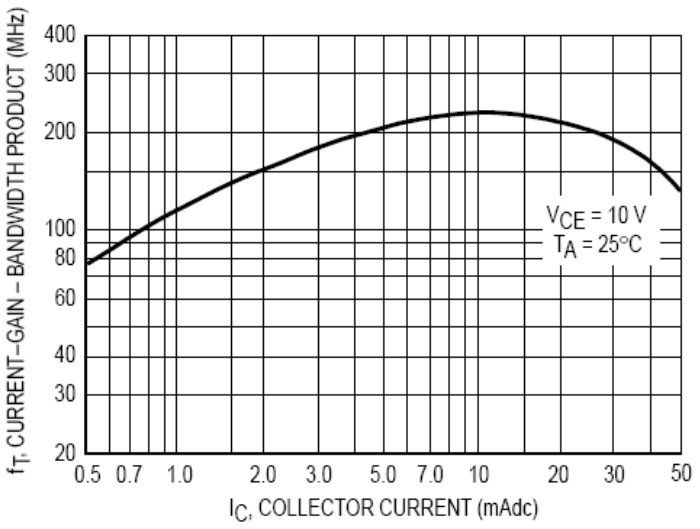


Fig.6 Current–Gain – Bandwidth Product



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