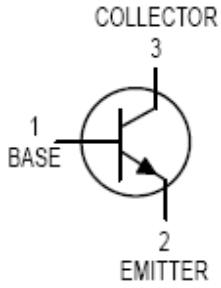
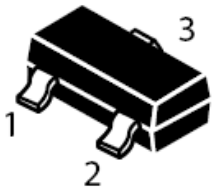
LITE-ON SEMICONDUCTORS

BC847

NPN General Purpose Transistor





FEATURES

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

MECHANICAL DATA

- Case: SOT-23 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℃

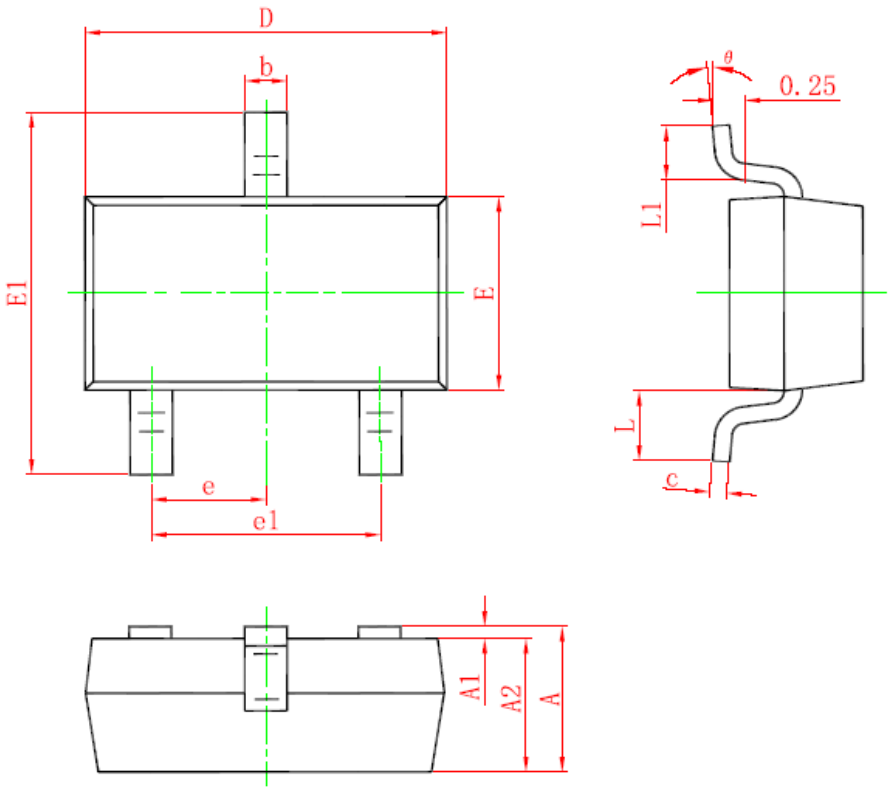
Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	45	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current -Continuous	I_C	100	mA
Collector Power Dissipation	P_C	200	mW
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{STG}	-65~+150	℃

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=10μA,I_C=0	V_{EBO}	6			V
Collector-base cut-off current	V_{CB}=50V,I_E=0	I_{CBO}			0.1	uA
Collector-emitter cut-off current	V_{CE}=45V,I_B=0	I_{CEO}			0.1	uA
Emitter-base cut-off current	V_{EB}=5V,I_C=0	I_{EBO}			0.1	uA
DC current gain	V_{CE}=5V,I_C=2mA A B C	h_{FE}	110 200 420		220 450 800	
Collector-emitter saturation voltage	I_C=100mA,I_B=5mA	V_{CE}(sat)			0.5	V
Base-emitter saturation voltage	I_C=100mA,I_B=5mA	V_{BE}(sat)			1.1	V
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

REV.2, Jun-2012, KSNR05

SOT-23 Outline Dimension



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	6°

Device Marking :

Device P/N	Classification of h_{FE}	Marking code
BC847A	110-220	1E
BC847B	200-450	1F
BC847C	420-800	1G

Electrical characteristic curves

Fig.1 DC Current Gain

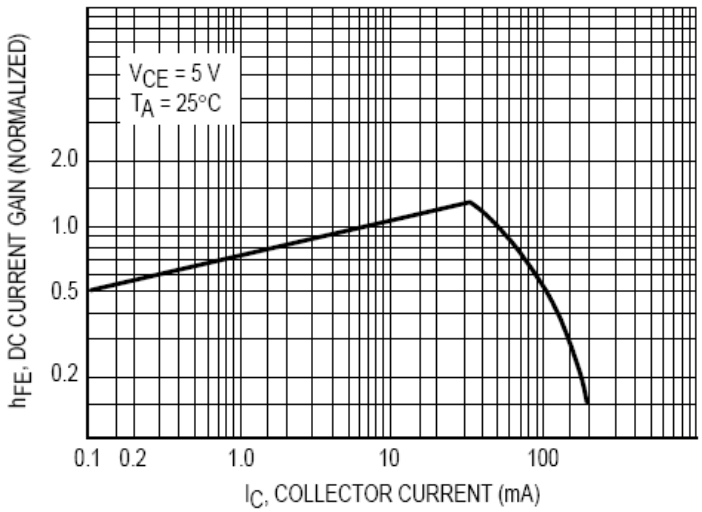


Fig.2 "Saturation" and "On" Voltages

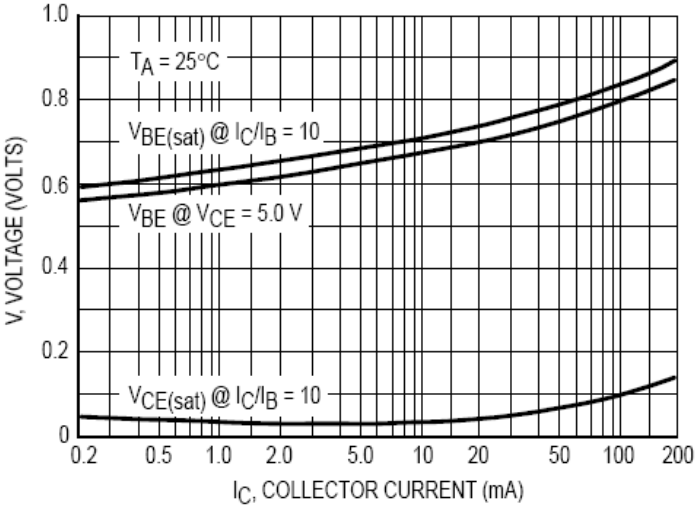


Fig.3 Collector Saturation Region

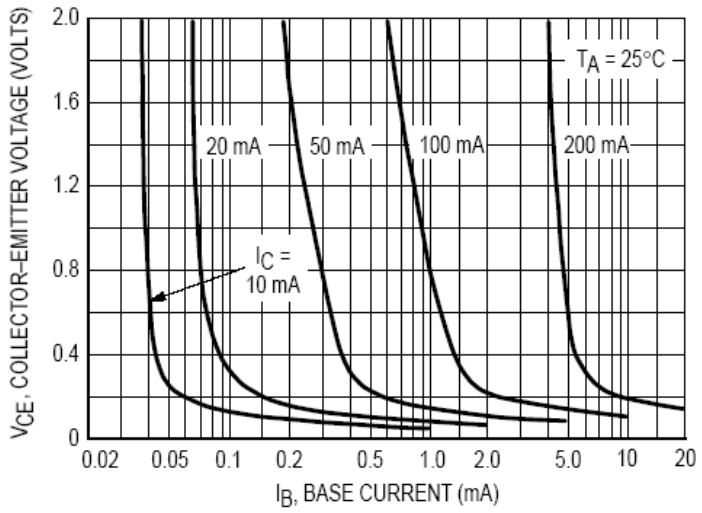


Fig.4 Base–Emitter Temperature Coefficient

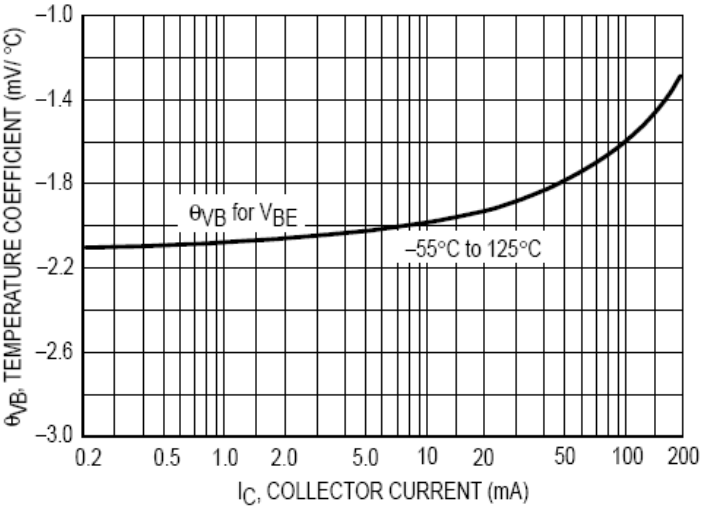


Fig.5 Capacitances

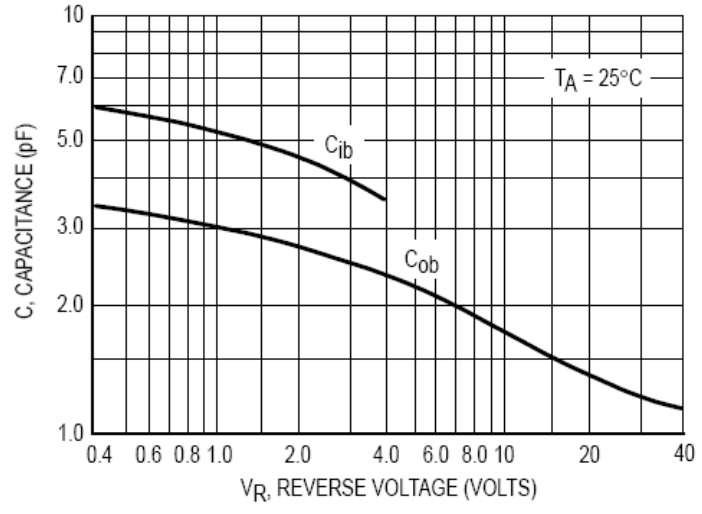
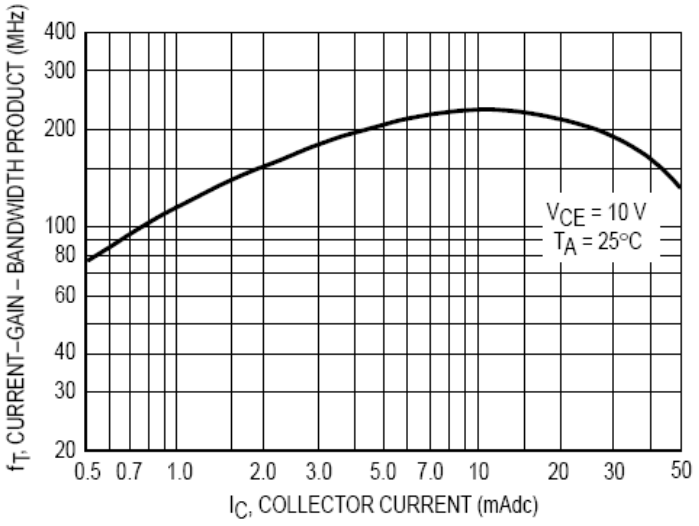


Fig.6 Current–Gain – Bandwidth Product



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