

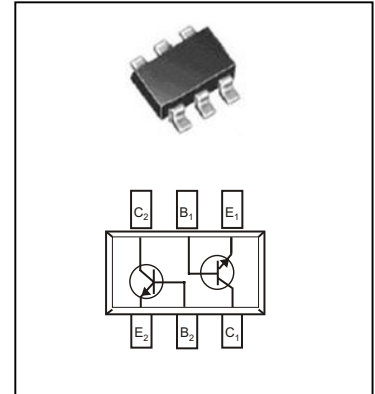
Features

- Ideally Suited for Automatic Insertion
- For Switching and AF Amplifier Applications
- Ultra-Small Surface Mount Package

Mechanical Data

- Case: SOT-363, Molded Plastic
- Case material - UL Flammability Rating Classification 94V - 0
- Moisture sensitivity: Level 1 per J-STD-020A
- Terminals: Solderable per MIL-STD-202, Method 208
- Terminal Connections: See Diagram
- Marking: K1F (See Page 2)
- Weight: 0.006 grams
- Ordering & Date Code Information: See Page 2

BC847BS (NPN)



SOT-363

Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

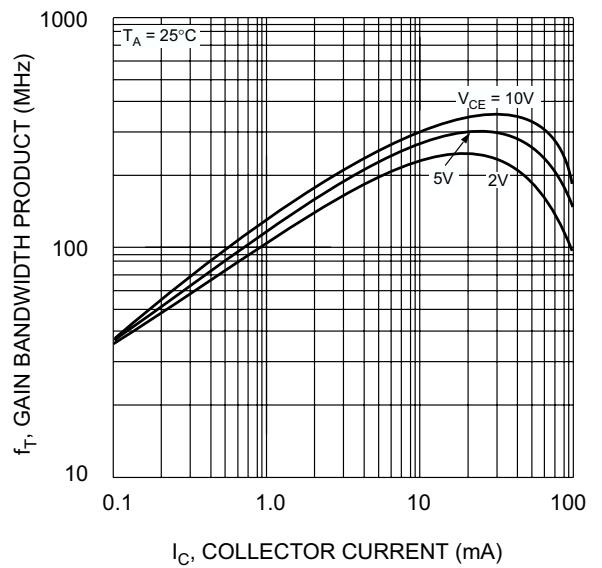
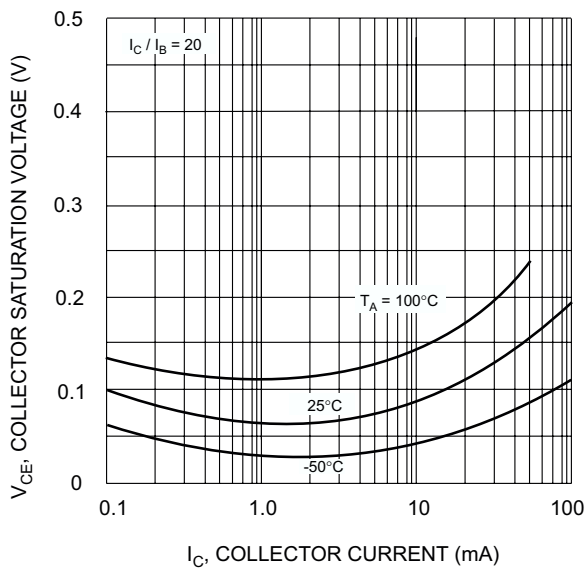
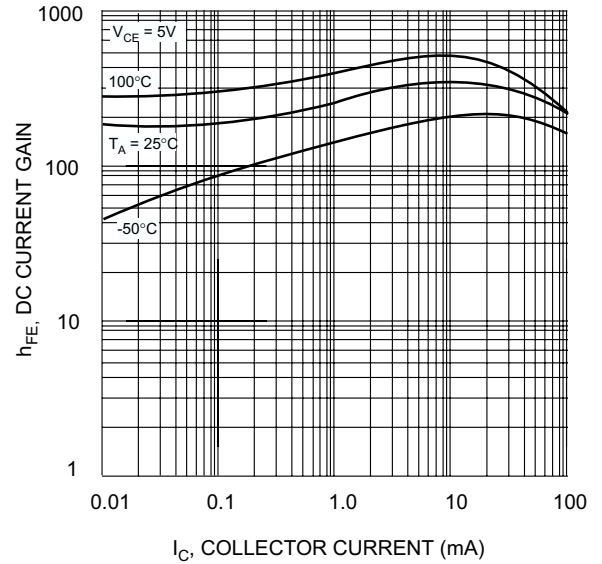
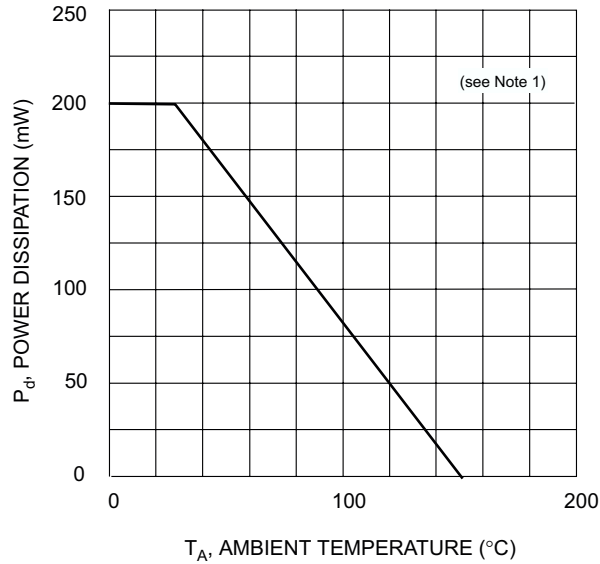
Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	45	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	100	mA
Peak Collector Current	I_{CM}	200	mA
Peak Base Current	I_{BM}	200	mA
Power Dissipation (Note 1)	P_d	200	mW
Thermal Resistance, Junction to Ambient (Note 1)	$R_{\theta JA}$	500	$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_j, T_{STG}	-55 to +125	$^\circ\text{C}$

Notes: 1. Device mounted on FR-4 PCB, 1 inch x 0.85 inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.

Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
DC Current Gain (Note 2)	h_{FE}	200	—	450	—	$V_{CE} = 5.0\text{V}, I_C = 2.0\text{mA}$
Collector-Emitter Saturation Voltage (Note 2)	$V_{CE(SAT)}$	—	—	100 400	mV	$I_C = 10\text{mA}, I_B = 0.5\text{mA}$ $I_C = 100\text{mA}, I_B = 5.0\text{mA}$
Base-Emitter Saturation Voltage (Note 2)	$V_{BE(SAT)}$	—	755	—	mV	$I_C = 10\text{mA}, I_B = 0.5\text{mA}$
Base-Emitter Voltage (Note 2)	V_{BE}	580	665	700	mV	$V_{CE} = 5.0\text{V}, I_C = 2.0\text{mA}$
Collector Cutoff Current (Note 2)	I_{CBO} I_{CBO}	—	—	15 5.0	nA μA	$V_{CB} = 30\text{V}, I_E = 0$ $V_{CB} = 30\text{V}, T_j = 125^\circ\text{C}$
Emitter Cutoff Current (Note 2)	I_{EBO}	—	—	100	nA	$V_{EB} = 5.0\text{V}, I_C = 0$
Gain Bandwidth Product	f_T	100	—	—	MHz	$V_{CE} = 5.0\text{V}, I_C = 10\text{mA}, f = 100\text{MHz}$
Collector-Base Capacitance	C_{CBO}	—	—	1.5	pF	$V_{CB} = 10\text{V}, f = 1.0\text{MHz}$
Emitter-Base Capacitance	C_{EBO}	—	11	—	pF	$V_{EB} = 0.5\text{V}, f = 1.0\text{MHz}$

BC847BS Typical Characteristics



Notes: 1. Device mounted on FR4 printed circuit board.