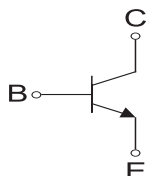
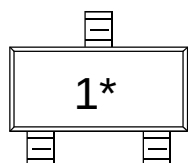


SOT-523 Plastic-Encapsulate Transistors**BC847T**

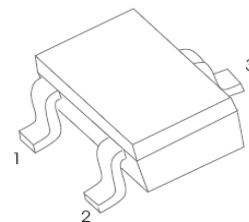
TRANSISTOR (NPN)

FEATURES

- Ideally suited for automatic insertion
- For switching and AF amplifier applicationst

MARKING**Equivalent Circuit**

HFE	110 - 220	200 - 450	420 - 800
MARKING	1E	1F	1G

SOT - 523

1. BASE
2. EMITTER
3. COLLECTOR

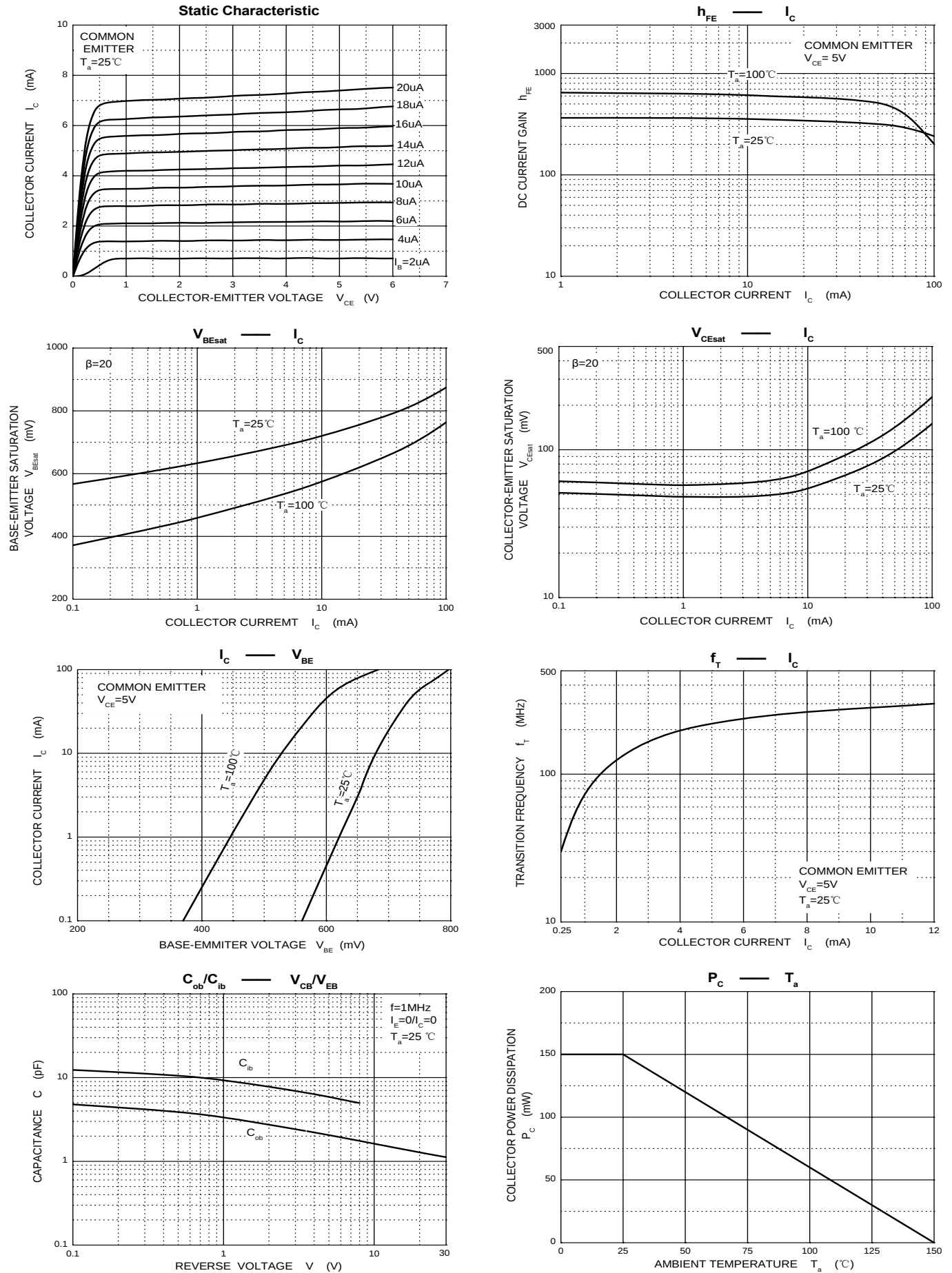
MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	50	V
V_{CEO}	Collector-Emitter Voltage	45	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current –Continuous	0.1	A
P_{C^*}	Collector Power Dissipation	150	mW
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55-150	$^{\circ}\text{C}$

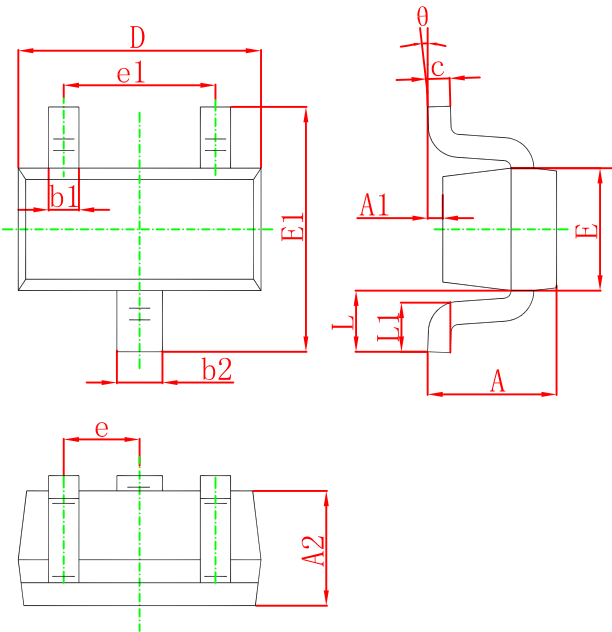
ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=10\mu\text{A}, I_E=0$	50			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=10\text{mA}, I_B=0$	45			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=1\mu\text{A}, I_C=0$	6			V
Collector Cutoff Current	I_{CBO}	$V_{CB}=30\text{V}$			15	nA
DC current gain	BC847AT BC847BT BC847CT	h_{FE} $V_{CE}=5\text{V}, I_C=2\text{mA}$	110 200 420		220 450 800	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=10\text{mA}, I_B=0.5\text{mA}$ $I_C=100\text{mA}, I_B=5\text{mA}$			0.25 0.6	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=10\text{mA}, I_B=0.5\text{mA}$ $I_C=100\text{mA}, I_B=5\text{mA}$		0.7 0.9		V
Base-emitter voltage	$V_{BE(on)}$	$V_{CE}=5\text{V}, I_C=2\text{mA}$ $V_{CE}=5\text{V}, I_C=10\text{mA}$	580	660	700 770	mV
Transition frequency	f_T	$V_{CE}=5\text{V}, I_C=10\text{mA}$ $f=100\text{MHz}$	100			MHz
Collector output capacitance	C_{ob}	$V_{CB}=10\text{V}, f=1\text{MHz}$			4.5	pF
Noise figure	BC847BT BC847CT	NF $V_{CE}=5\text{V}, f=1\text{kHz},$ $R_S=2\text{k}\Omega, BW=200\text{Hz}$			10 4	dB

Typical Characteristics

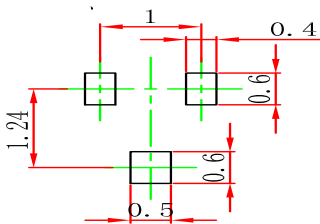


Package Outline Dimensions (SOT-523)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.350	0.010	0.014
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
E	0.700	0.900	0.028	0.035
E1	1.450	1.750	0.057	0.069
e	0.500 TYP.		0.020 TYP.	
e1	0.900	1.100	0.035	0.043
L	0.400 REF.		0.016 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

Suggested Pad Layout (SOT-523)



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.