

RoHS Compliant Product

A suffix of "-C" specifies halogen & lead-free

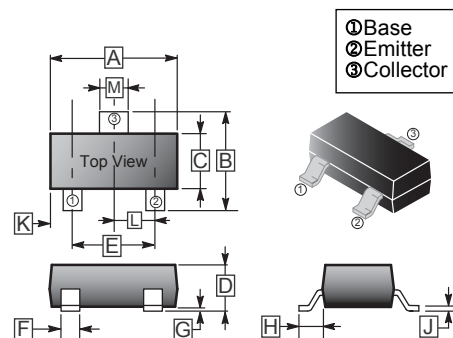
FEATURES

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

SOT-523

MARKING

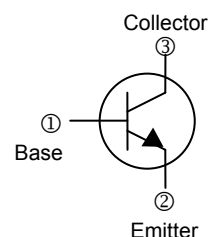
Product	Marking Code
BC847AT	1E
BC847BT	1F
BC847CT	1G



PACKAGE INFORMATION

Package	MPQ	LeaderSize
SOT-523	3K	7' inch

REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.5	1.7	G	-	0.1
B	1.45	1.75	H	0.55 REF.	
C	0.75	0.85	J	0.1	0.2
D	0.7	0.9	K	-	
E	0.9	1.1	L	0.5 TYP.	
F	0.15	0.25	M	0.25	0.325



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

Parameter	Symbol	Ratings	Unit
Collector to Base Voltage	V_{CBO}	50	V
Collector to Emitter Voltage	V_{CEO}	45	V
Emitter to Base Voltage	V_{EBO}	6	V
Collector Current - Continuous	I_C	0.1	A
Collector Power Dissipation	P_C	150	mW
Junction, Storage Temperature	T_J, T_{STG}	150, -55 ~ 150	$^\circ\text{C}$

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions	
Collector to Base Breakdown Voltage	V_{CBO}	50	-	-	V	$I_C = 10 \mu\text{A}, I_E = 0$	
Collector to Emitter Breakdown Voltage	V_{CEO}	45	-	-	V	$I_C = 10 \text{mA}, I_B = 0$	
Emitter to Base Breakdown Voltage	V_{EBO}	6	-	-	V	$I_E = 1 \mu\text{A}, I_C = 0$	
Collector Cutoff Current	I_{CBO}	-	-	15	nA	$V_{CB} = 30 \text{V}$	
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	-	-	0.25	V	$I_C = 10\text{mA}, I_B = 0.5 \text{mA}$	
		-	-	0.6		$I_C = 100\text{mA}, I_B = 5 \text{mA}$	
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	-	0.7	-	V	$I_C = 10\text{mA}, I_B = 0.5 \text{mA}$	
		-	0.9	-		$I_C = 100\text{mA}, I_B = 5 \text{mA}$	
Base to Emitter Voltage	$V_{BE(on)}$	580	660	700	mV	$V_{CE} = 5 \text{V}, I_C = 2 \text{mA}$	
		-	-	770		$V_{CE} = 5 \text{V}, I_C = 10 \text{mA}$	
DC Current Gain	BC847AT	h_{FE}	110	-	220	V _{CE} = 5 V, I _C = 2 mA	
	BC847BT		200	-	450		
	BC847CT		420	-	800		
Transition Frequency	f_T	100	-	-	MHz	$V_{CE} = 5 \text{V}, I_C = 10 \text{mA}$ $f = 100\text{MHz}$	
Collector Output Capacitance	C_{Ob}	-	-	4.5	pF	$V_{CB} = 10 \text{V}, f=1\text{MHz}$	
Noise Figure	BC847BT	NF	-	-	10	dB	$V_{CE}= 5\text{V}, \text{BW}= 200\text{HZ},$ $f= 1\text{KHz}, R_s= 2 \text{k}\Omega$
	BC847CT		-	-	4		

CHARACTERISTIC CURVES

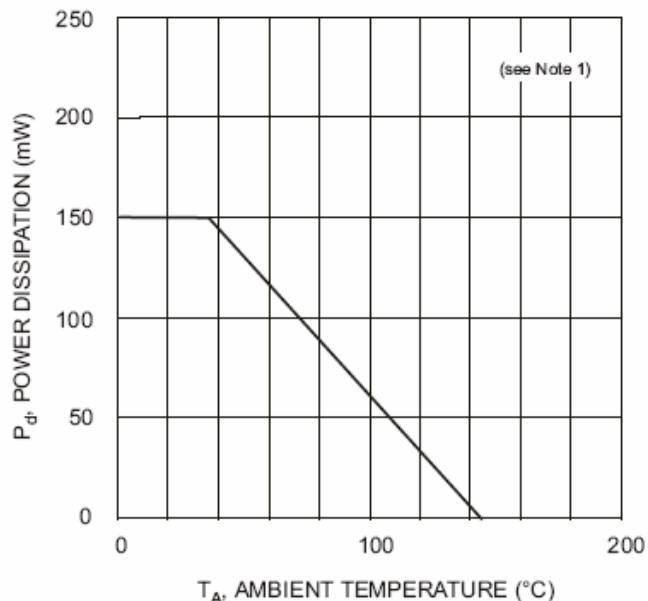


Fig. 1, Power Derating Curve

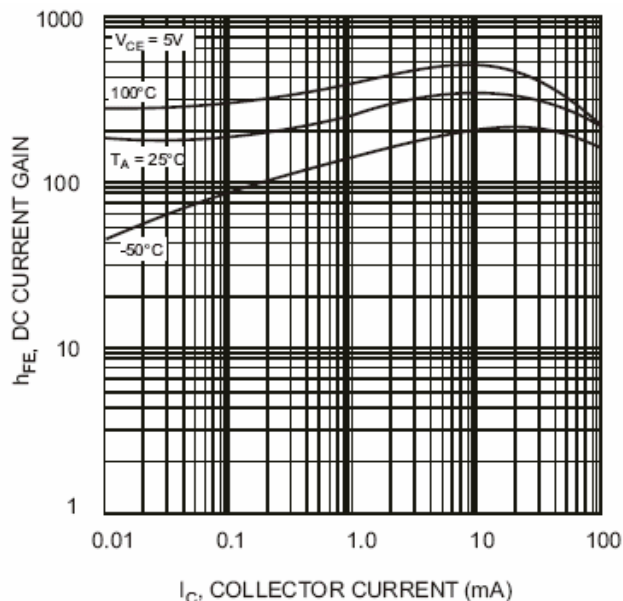


Fig. 2, DC Current Gain vs Collector Current

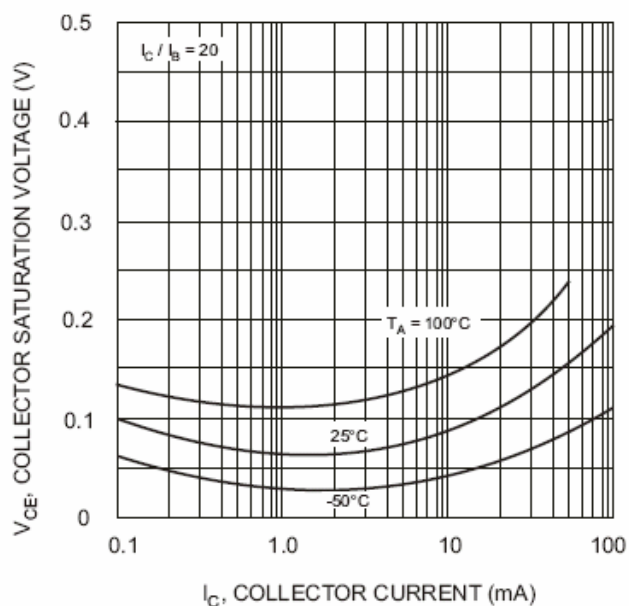


Fig. 3, Collector Saturation Voltage vs Collector Current

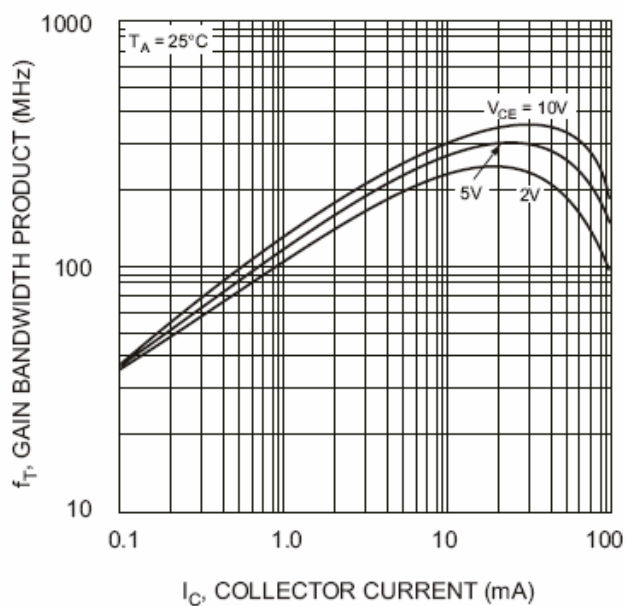


Fig. 4, Gain Bandwidth Product vs Collector Current