

NPN Transistor

30~65V 300mW SOT-23

BC846~BC850

MERITEK

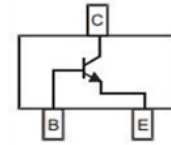
FEATURE

- Low Power Loss, High Efficiency
- Application: Signal Processing, Switching and Amplifier.
- Suffix "A", "B" or "C" Indicates DC Current Gain Group, Ex. BC847B



MECHANICAL DATA

- Case: SOT-23, molded plastic
- Terminals: Solderable per MIL-STD-750, Method 2026



MAXIMUM RATING

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	BC846	80
		BC847, BC850	50
		BC848, BC849	30
Collector-Emitter Voltage	V_{CEO}	BC846	65
		BC847, BC850	45
		BC848, BC849	30
Emitter-Base Voltage	V_{EBO}	BC846, BC847	6.0
		BC848, BC849, BC850	5.0
Collector Current	I_C	100	mA
Peak Collector Current	I_{CM}	200	mA
Power Dissipation	P_{tot}	300	mW
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{stg}	-55 ~+150	°C

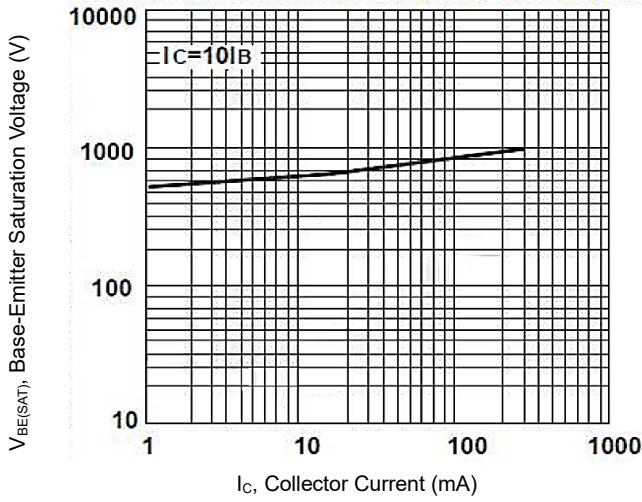
ELECTRICAL CHARACTERISTICS

Parameter- ON Characteristic	Conditions	Symbol	Min.	Typ.	Max.	Unit	
DC Current Gain	$V_{CE}=5V, I_C=2mA$	h_{FE}	Group A	110	-	220	-
			Group B	200	-	450	
			Group C	420	-	800	
Collector-Emitter Saturation Voltage	$I_C=10mA, I_B=0.5mA$	$V_{CE(SAT)}$	-	-	0.25	V	
	$I_C=100mA, I_B=5mA$		-	-	0.60		
Base-Emitter Saturation Voltage	$V_{CE}=5V, I_C=2mA$	$V_{BE(SAT)}$	0.58	-	0.70	V	
	$V_{CE}=5V, I_C=10mA$		-	-	0.72		
Collector-Base Breakdown Voltage	$I_C=100\mu A$	$V_{(BR)CBO}$	BC846	80	-	-	V
			BC847, BC850	50	-	-	
			BC848, BC849	30	-	-	
Collector-Emitter Breakdown Voltage	$I_C=2mA$	$V_{(BR)CEO}$	BC846	65	-	-	V
			BC847, BC850	45	-	-	
			BC848, BC849	30	-	-	
Emitter-Base Breakdown Voltage	$I_E=100\mu A$	$V_{(BR)EBO}$	BC846, BC857	6.0	-	-	V
			BC848, BC849, BC850	5.0	-	-	
Collector Base Cut-Off Current	$V_{CB}=30V$	I_{CBO}	-	-	15	nA	
Output Capacitance	$V_{CB}=10V, f=1MHz$	C_{ob}	-	-	6.0	pF	
Input Capacitance	$V_{CB}=0.5V, f=1MHz$	C_{ib}	-	9.0	-	pF	
Current-Gain – Bandwidth Product	$I_C=10mA, V_{CE}=5V, f=100MHz$	f_T	-	300	-	MHz	

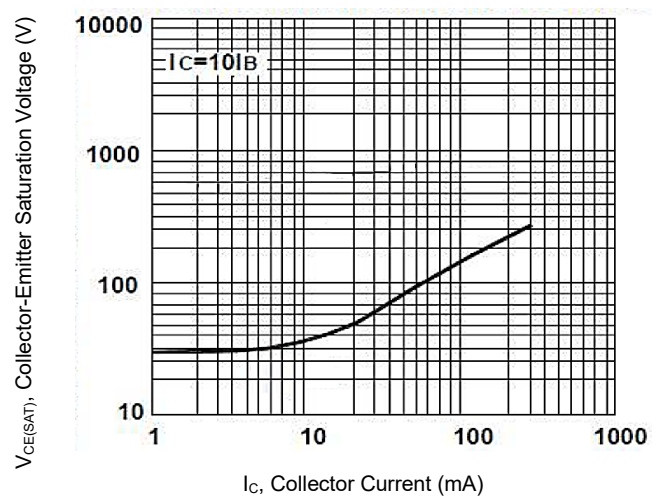
Note: $T_A=25^\circ C$ unless otherwise noted

CHARACTERISTIC CURVES

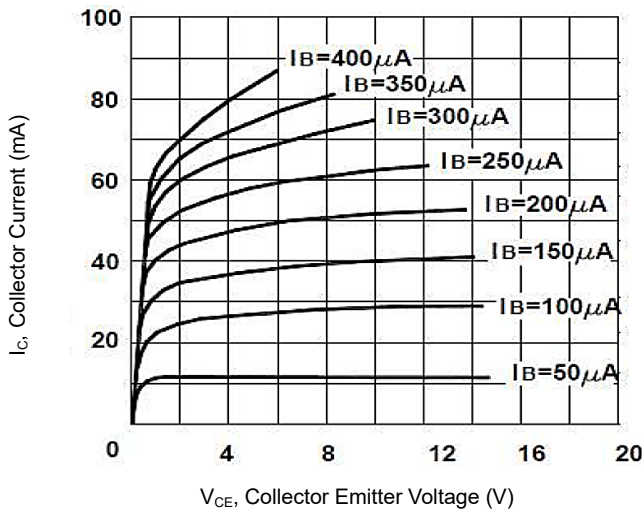
Base-Emitter Saturation Voltage



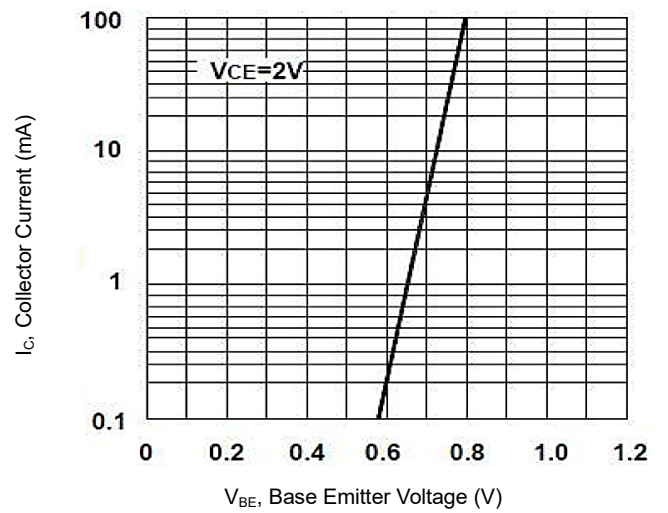
Collector-Emitter Saturation Voltage



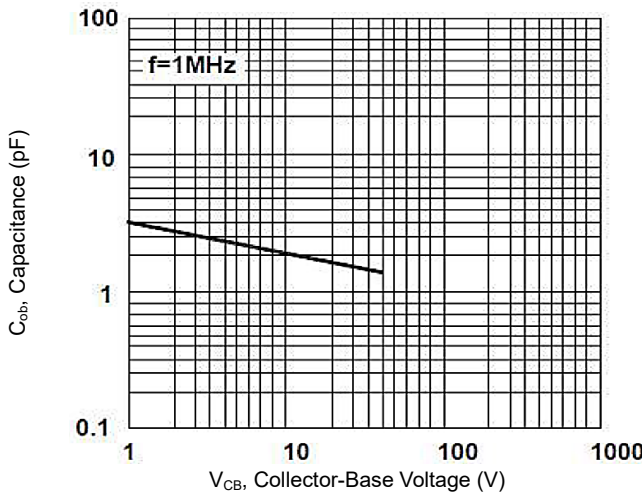
Static Characteristic



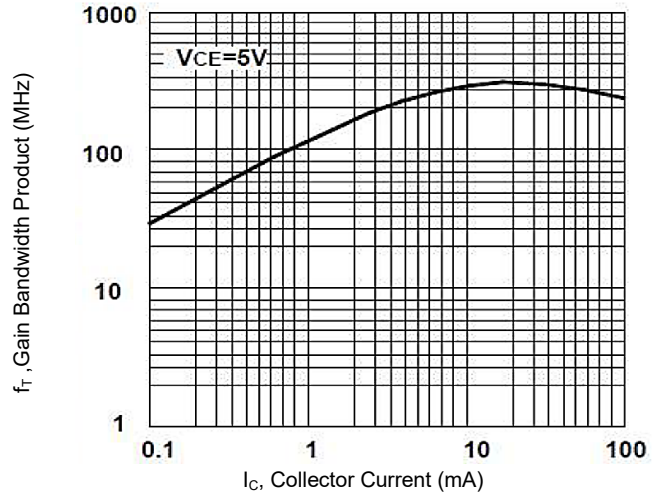
Base Emitter On Voltage



Output Capacitance



Gain Bandwidth Product

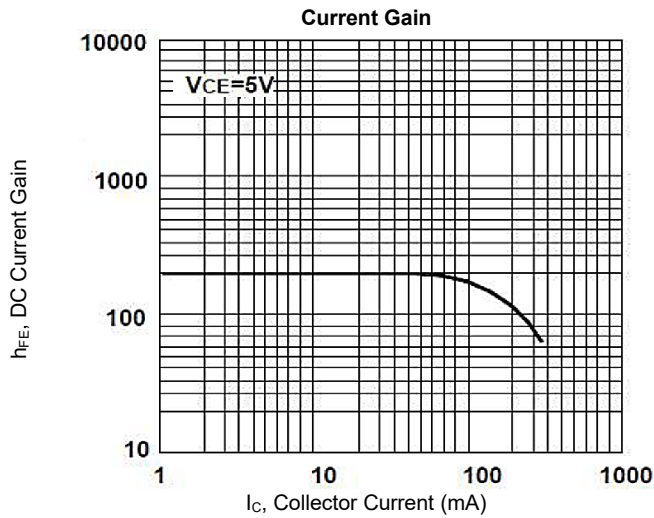


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CHARACTERISTIC CURVES



DIMENSIONS

SOT-23	Min (mm)	Max (mm)
A1	--	0.10
A2	0.79	1.40
b	0.30	0.50
c	0.08	0.20
D	2.70	3.10
e	0.89	1.02
e1	1.78	2.04
E	2.10	2.80
E1	1.20	1.60
L	0.15	--
X		0.80
X1		0.95
Y		1.22
Y1		0.80
Y2		2.82

