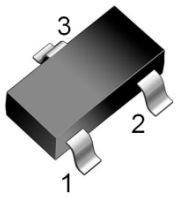
GENERAL PURPOSE TRANSISTOR

REPLACEMENT TYPE : BC846/BC847/BC848

FEATURES

- For general AF applications
- High collector current
- High current gain
- Low collector-emitter saturation voltage



SOT-23

1: BASE 2: EMITTER 3: COLLECTOR

MARKING:

HABC846A 1A HABC846B 1B

HABC847A 1E HABC847B 1F HABC847C 1G

HABC848A 1J HABC848B 1K HABC848C 1L

MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

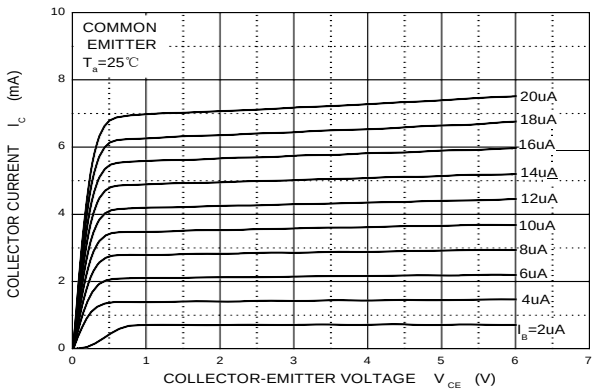
Parameter		Symbol	Value	Unit
Collector-Base Voltage	BC846	V_{CBO}	80	V
	BC847	V_{CBO}	50	
	BC848	V_{CBO}	30	
Collector-Emitter Voltage	BC846	V_{CEO}	65	V
	BC847	V_{CEO}	45	
	BC848	V_{CEO}	30	
Emitter-Base Voltage		V_{EBO}	6	V
Collector Current -Continuous		I_C	0.1	A
Collector Power Dissipation		P_C	0.2	W
Junction Temperature		T_J	150	°C
Storage Temperature		T_{stg}	-55 to +150	°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

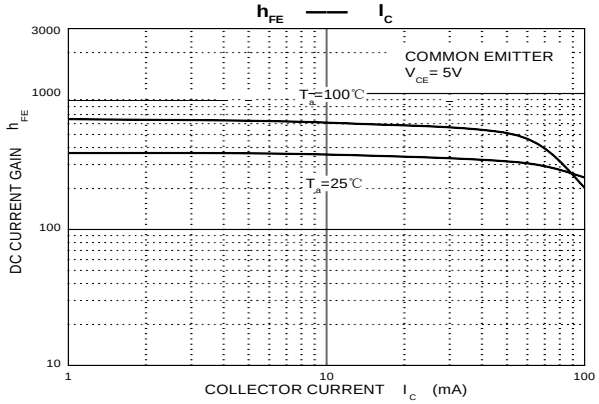
Parameter		Symbol	Test conditions	Min	Max	Unit
Collector-Base Breakdown Voltage	HABC846 HABC847 HABC848	V_{CBO}	I_C= 10μA,I_E=0	80 50 30		V
Collector-Emitter Breakdown Voltage	HABC846 HABC847 HABC848	V_{CEO}	I_C= 10mA,I_B=0	65 45 30		V
Emitter-Base Breakdown Voltage		V_{EBO}	I_E= 10μA,I_C=0	6		V
Collector Cut-off Current	HABC846 HABC847 HABC848	I_{CBO}	V_{CB}=70V, I_E=0 V_{CB}=50V, I_E=0 V_{CB}=30V, I_E=0		0.1	μA
Collector Cut-off Current	HABC846 HABC847 HABC848	I_{CEO}	V_{CE}=60V,I_B=0 V_{CE}=45V,I_B=0 V_{CE}=30V,I_B=0		0.1	μA
Emitter Cut-off Current		I_{EBO}	V_{EB}=5V, I_C=0		0.1	μA
DC Current Gain	HABC846A,847A,848A HABC846B,847B,848B HABC847C,BC848C	h_{FE}	V_{CE}= 5V, I_C= 2mA	1 0 200 420	220 450 800	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	I_C=100mA,I_B= 5mA		0.5	V
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	I_C=100mA,IB= 5mA		1.1	V
Transition Frequency		f_T	V_{CE}= 5V,I_C= 10mA f=100MHz	100		MHz
Collector Output Capacitance		C_{ob}	V_{CB}=10V, f=1MHz		4.5	pF

Typical Characteristics

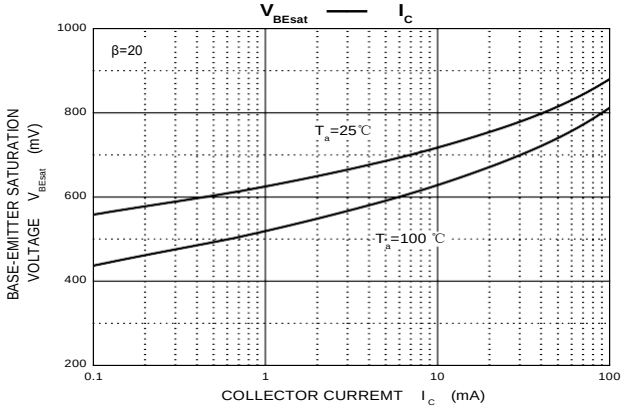
Static Characteristic



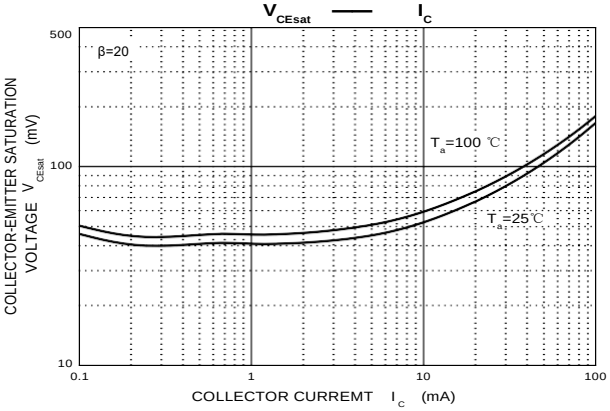
h_{FE} —— I_C



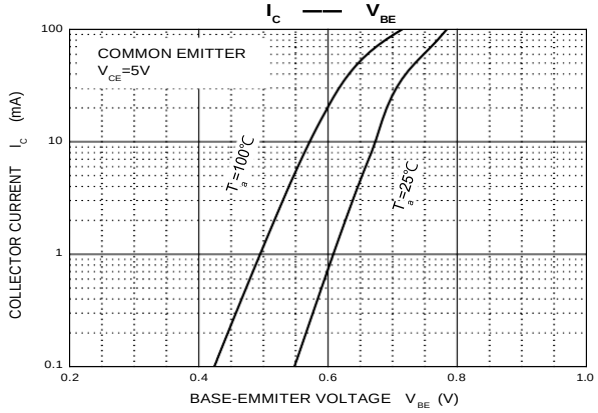
V_{BEsat} —— I_C



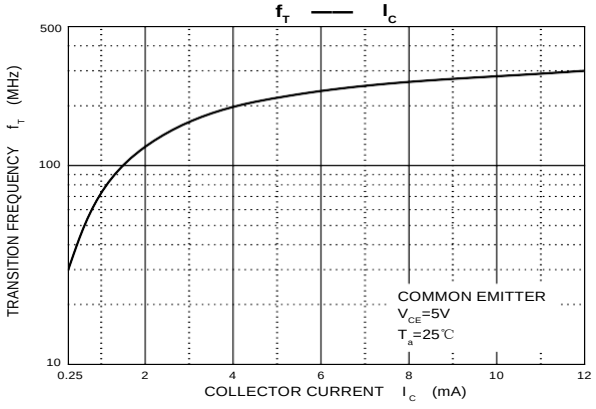
V_{CEsat} —— I_C



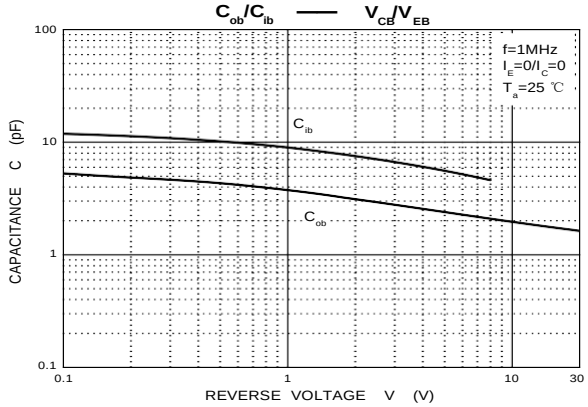
I_C —— V_{BE}



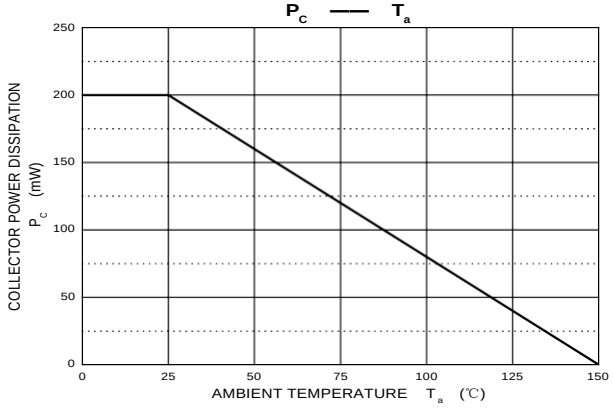
f_T —— I_C



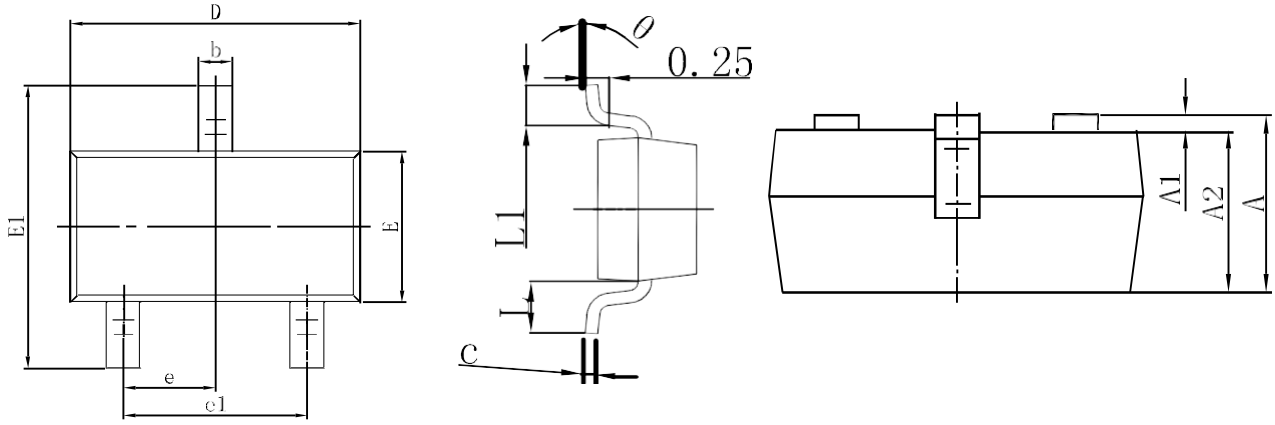
C_{ob}/C_{ib} —— V_{CB}/V_{EB}



P_C —— T_a

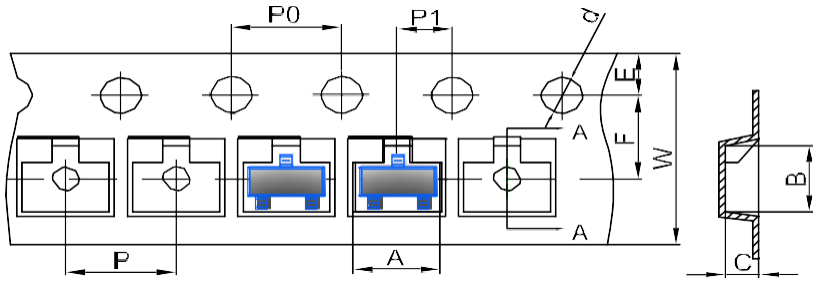


Typical Characteristics



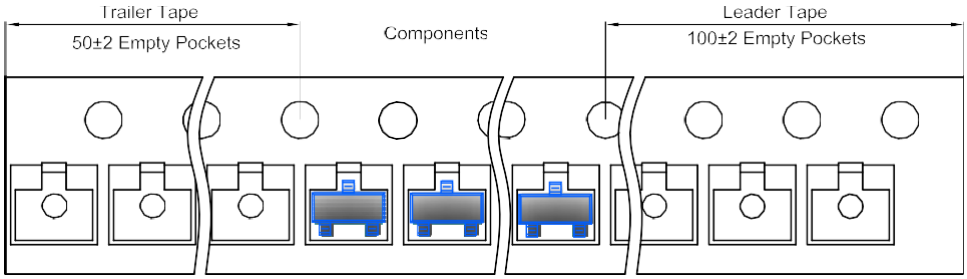
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		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°	8°

SOT-23 Embossed Carrier Tape

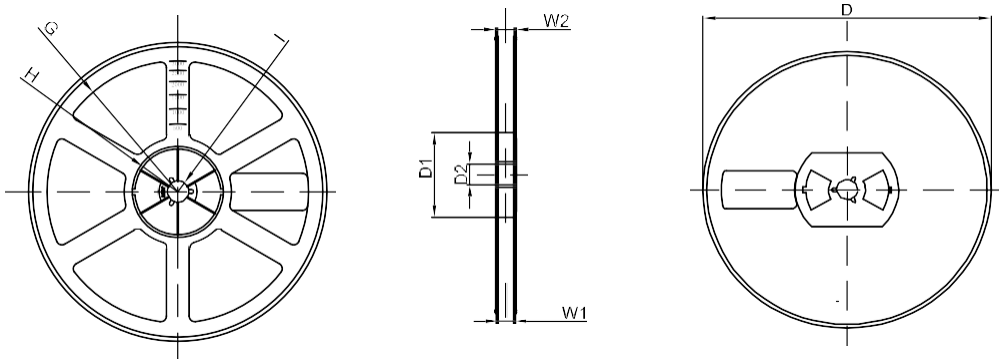


	DIMENSIONS ARE IN MILLIMETER									
TYPE	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	φ1.50	1.75	3.50	4.00	4.00	2.00	8.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

SOT-23 Tape Leader and Traller



SOT-23 Reel



	DIMENSIONS ARE IN MILLIMETER							
REEL OPTION	D	D1	D2	G	H	I	W1	W2
7'' DIA	φ178	54.40	13.00	R78	R25.60	R6.50	9.50	12.30
TOLERANCE	±2	±1	±1	±1	±1	±1	±1	±1