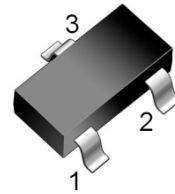


REPLACEMENT TYPE : BC846/BC847/BC848

### 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<sub>A</sub> = 25°C unless otherwise noted)

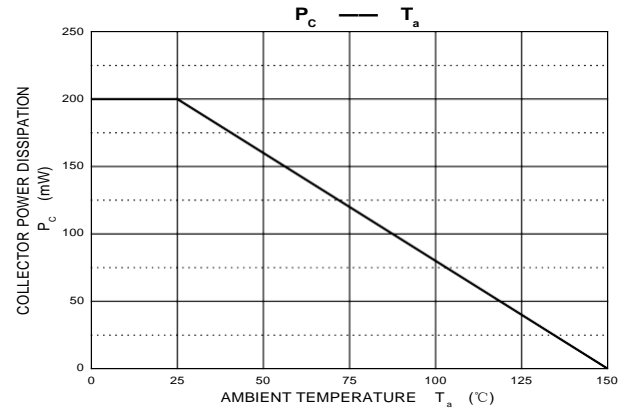
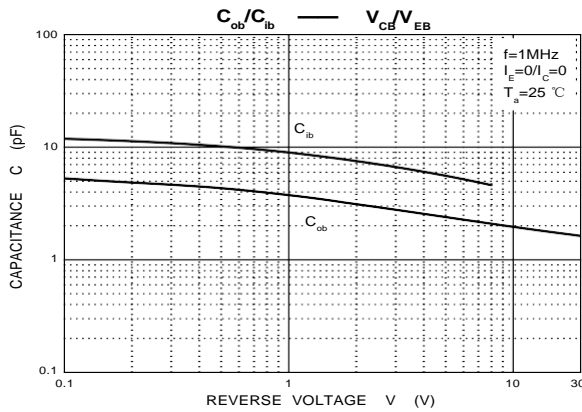
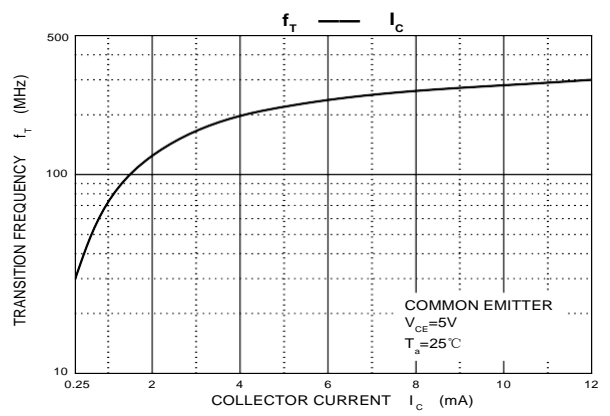
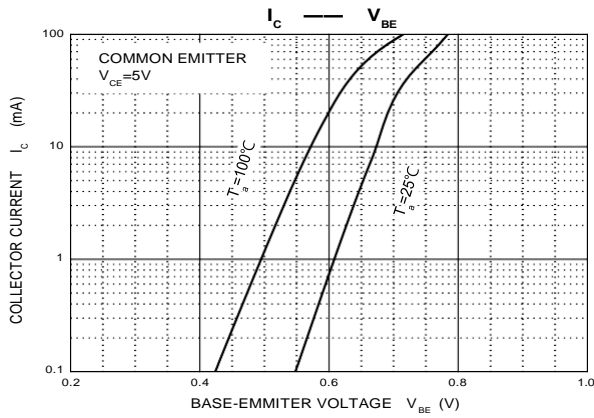
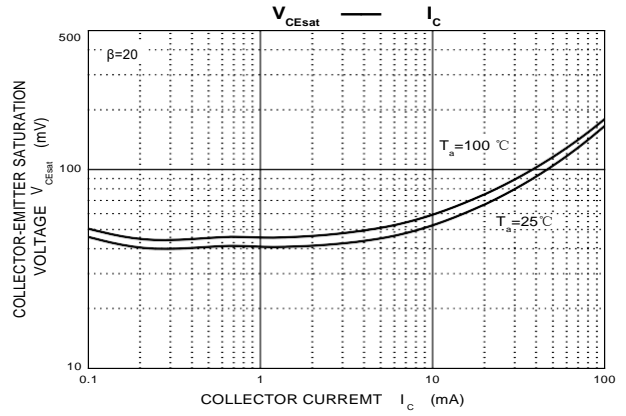
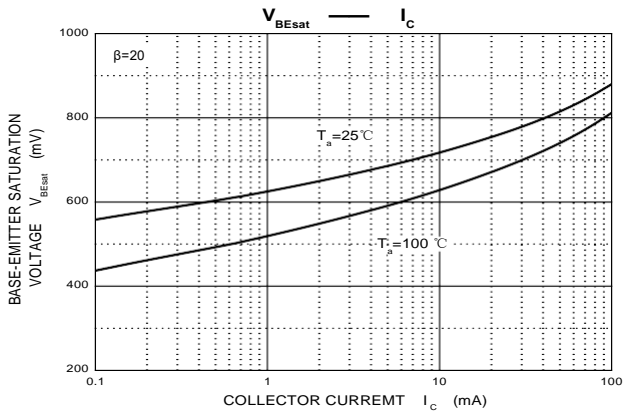
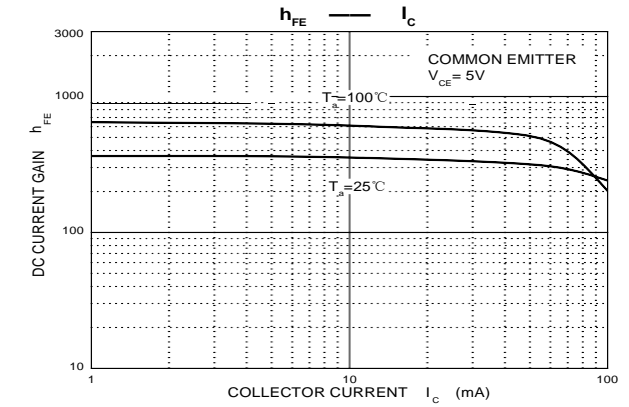
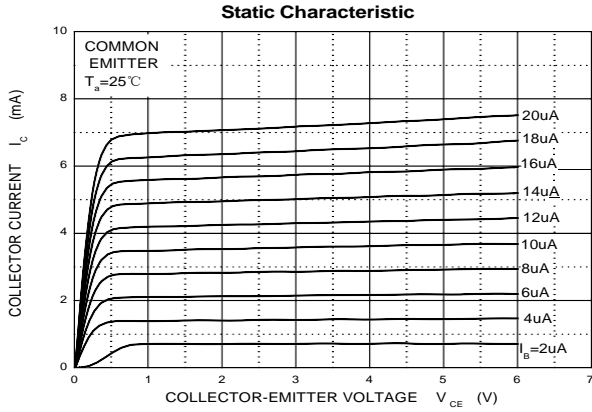
Parameter		Symbol	Value	Unit
Collector-Base Voltage	BC846	V <sub>CBO</sub>	80	V
	BC847	V <sub>CBO</sub>	50	
	BC848	V <sub>CBO</sub>	30	
Collector-Emitter Voltage	BC846	V <sub>CEO</sub>	65	V
	BC847	V <sub>CEO</sub>	45	
	BC848	V <sub>CEO</sub>	30	
Emitter-Base Voltage		V <sub>EBO</sub>	6	V
Collector Current -Continuous		I <sub>C</sub>	0.1	A
Collector Power Dissipation		P <sub>C</sub>	0.2	W
Junction Temperature		T <sub>J</sub>	150	°C
Storage Temperature		T <sub>stg</sub>	-55 to +150	°C

**ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise noted)**

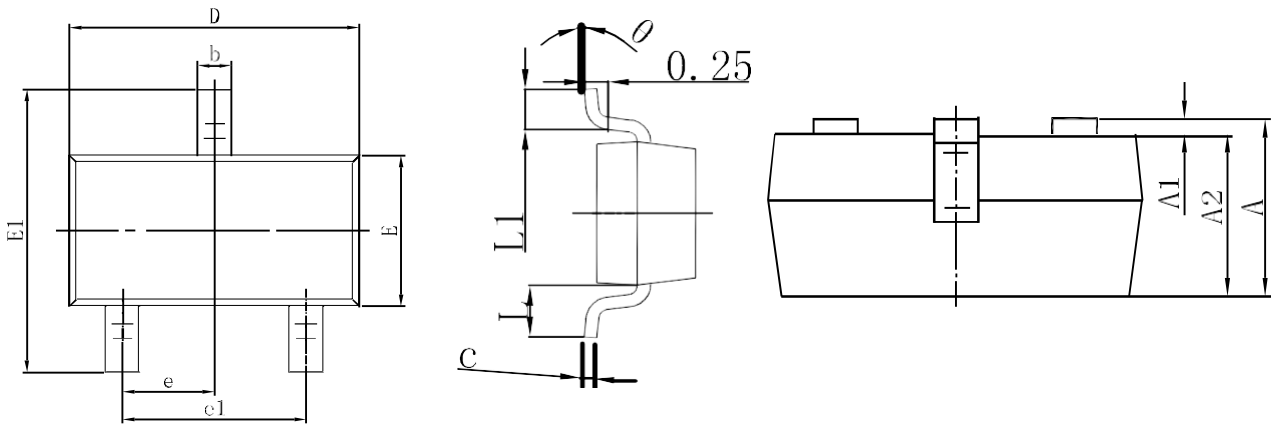
Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-Base Breakdown Voltage	HABC846	I <sub>C</sub> = 10μA, I <sub>E</sub> =0	80		V
	HABC847		50		
	HABC848		30		
Collector-Emitter Breakdown Voltage	HABC846	I <sub>C</sub> = 10mA, I <sub>B</sub> =0	65		V
	HABC847		45		
	HABC848		30		
Emitter-Base Breakdown Voltage	V <sub>EBO</sub>	I <sub>E</sub> = 10μA, I <sub>C</sub> =0	6		V
Collector Cut-off Current	HABC846	V <sub>CB</sub> =70V, I <sub>E</sub> =0		0.1	μA
	HABC847	V <sub>CB</sub> =50V, I <sub>E</sub> =0			
	HABC848	V <sub>CB</sub> =30V, I <sub>E</sub> =0			
Collector Cut-off Current	HABC846	V <sub>CE</sub> =60V, I <sub>B</sub> =0		0.1	μA
	HABC847	V <sub>CE</sub> =45V, I <sub>B</sub> =0			
	HABC848	V <sub>CE</sub> =30V, I <sub>B</sub> =0			
Emitter Cut-off Current	I <sub>EBO</sub>	V <sub>EB</sub> =5V, I <sub>C</sub> =0		0.1	μA
DC Current Gain	HABC846A,847A,848A	V <sub>CE</sub> = 5V, I <sub>C</sub> = 2mA	10	220	
	HABC846B,847B,848B		200	450	
	HABC847C,BC848C		420	800	
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =100mA, I <sub>B</sub> = 5mA		0.5	V
Base-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =100mA, I <sub>B</sub> = 5mA		1.1	V
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> = 5V, I <sub>C</sub> = 10mA f=100MHz	100		MHz
Collector Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, f=1MHz		4.5	pF

Typical Characteristics

GENERAL PURPOSE TRANSISTOR

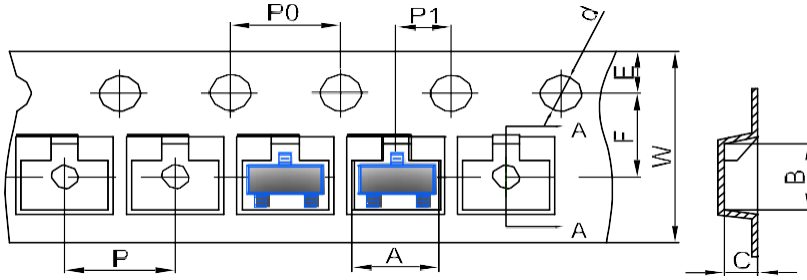


## Typical Characteristics



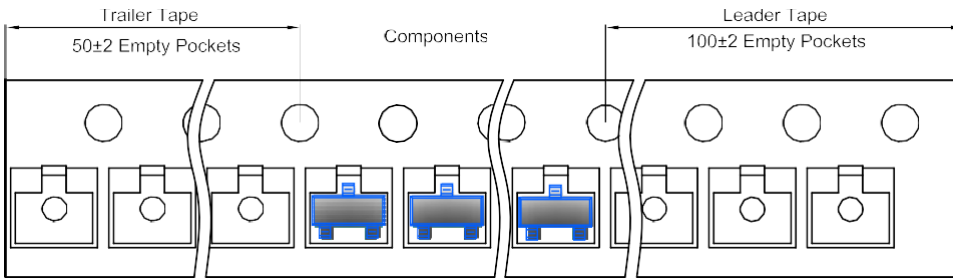
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		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
$\theta$	0°	8°	0°	8°

## SOT-23 Embossed Carrier Tape

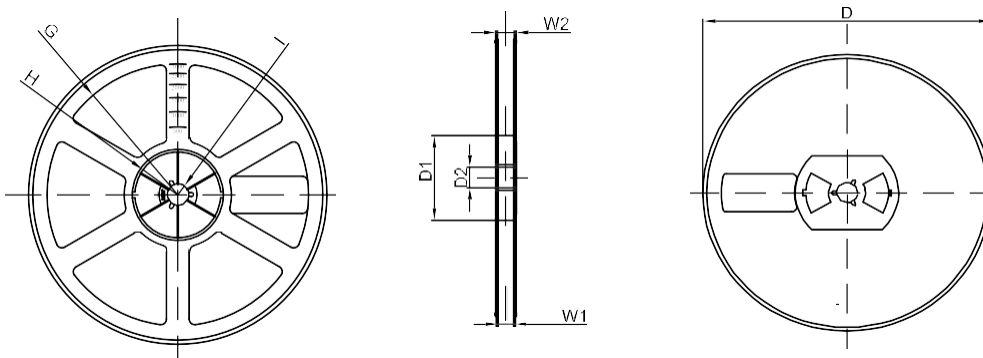


DIMENSIONS ARE IN MILLIMETER										
TYPE	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	φ1.50	1.75	3.50	4.00	4.00	2.00	8.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

## 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