



## BC846AW/BW BC847AW/BW/CW BC848AW/BW/CW

### Features

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Low current (max. 100mA)
- Low voltage (max. 65V)
- Epoxy meets UL 94 V-0 flammability rating
- Moisure Sensitivity Level 1
- Halogen free available upon request by adding suffix "-HF"

### Maximum Ratings

- Operating temperature : -65°C to +150°C
- Storage temperature : -65°C to +150°C
- Thermal resistance from junction to ambient\*: 625K/W
- Marking: BC846AW---1A ; BC846BW---1B  
BC847AW---1E ; BC847BW---1F ; BC847CW---1G  
BC848AW---1JS/1J ; BC848BW---1KS/1K ; BC848CW---1LS/1L

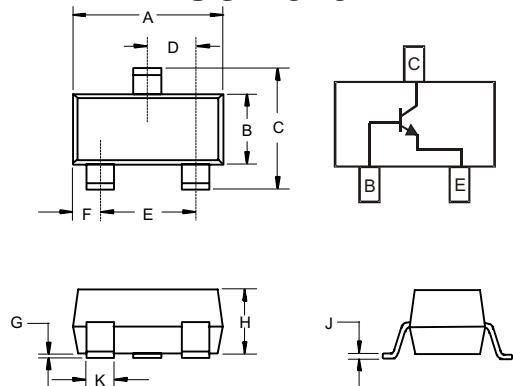
### Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
<b>OFF CHARACTERISTICS</b>				
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ( $I_c=10\mu Adc$ , $I_b=0$ )			Vdc
	BC846AW/BW	---	80	
	BC847AW/BW/CW	---	50	
	BC848AW/BW/CW	---	30	
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage ( $I_c=10mAdc$ , $I_b=0$ )			Vdc
	BC846AW/BW	---	65	
	BC847AW/BW/CW	---	45	
	BC848AW/BW/CW	---	30	
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ( $I_e=1\mu Adc$ , $I_c=0$ )			Vdc
	BC846AW/BW, BC847AW/BW/CW	---	6	
	BC848AW/BW/CW	---	5	
$I_c$	Collector Current (DC)	---	100	mAdc
$I_{cm}$	Peak Collector Current	---	200	mAdc
$I_{bm}$	Peak Base Current	---	200	mAdc

\* Transistor mounted on an FR4 printed-circuit board

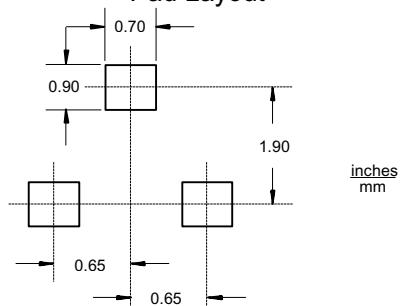
### NPN General Purpose Transistors

#### SOT-323



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.071	.087	1.80	2.20	
B	.045	.053	1.15	1.35	
C	.083	.096	2.10	2.45	
D	.026 Nominal		0.65Nominal		
E	.047	.055	1.20	1.40	
F	.012	.016	.30	.40	
G	.000	.004	.000	.100	
H	.035	.039	.90	1.00	
J	.004	.010	.100	.250	
K	.006	.016	.15	.40	

#### Suggested Solder Pad Layout



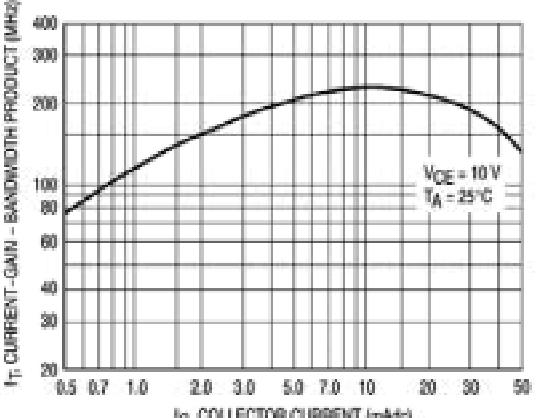
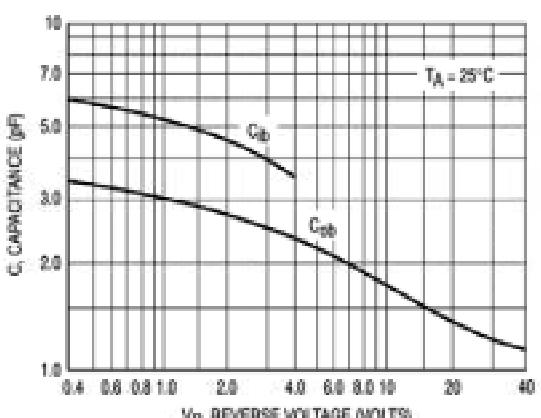
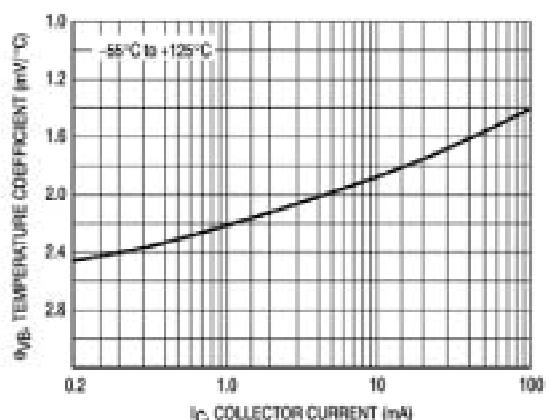
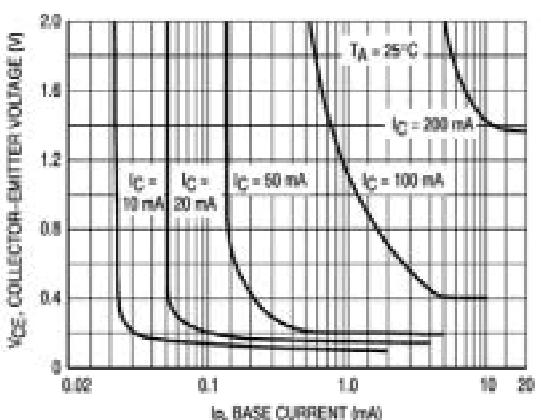
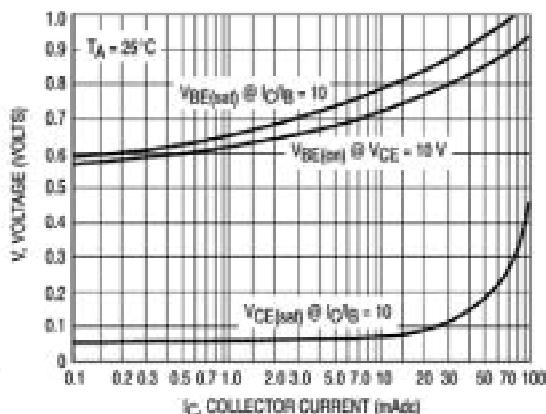
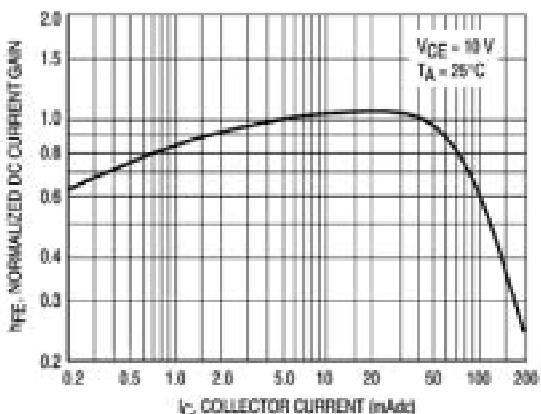
## ON CHARACTERISTICS

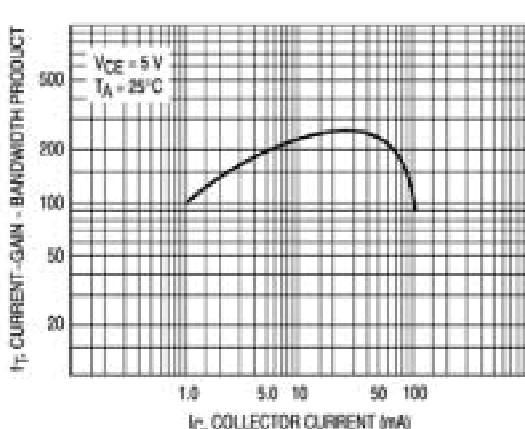
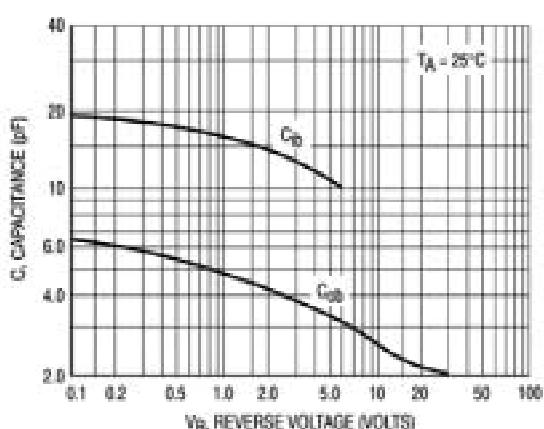
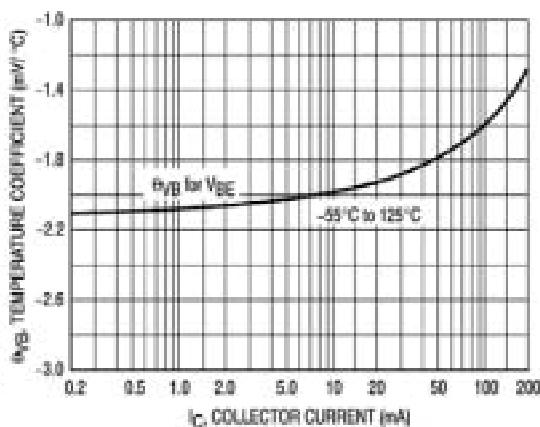
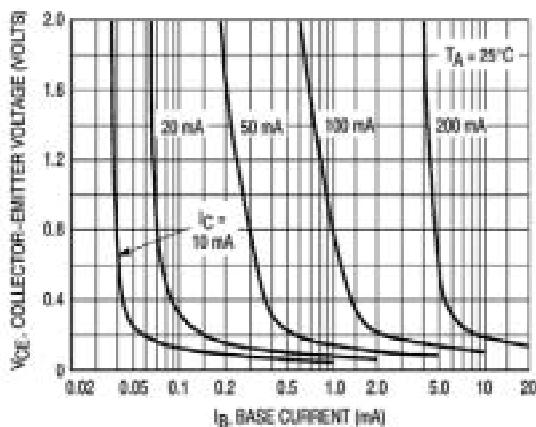
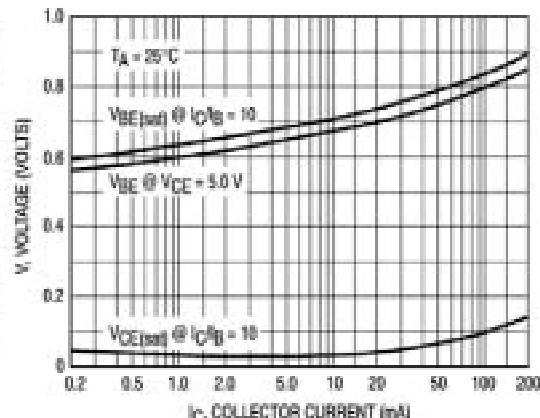
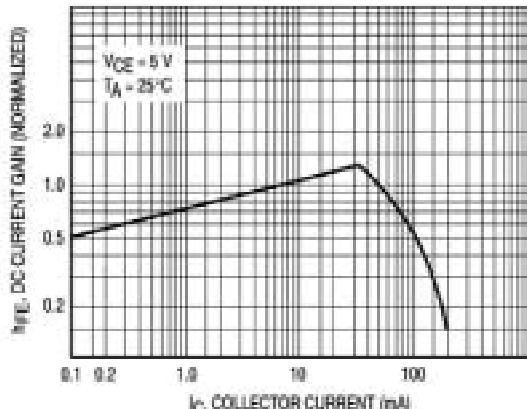
Symbol	Parameter	Min	Typ	Max	Units
$I_{CBO}$	Collector-base Cut-off Current ( $I_{CE}=0$ , $V_{CB}=30V_{dc}$ ) ( $I_{CE}=0$ , $V_{CB}=30V_{dc}$ , $T_j=150^\circ C$ )	---	---	15 5	nA $\mu A$
$I_{CEO}$	Emitter-base Cut-off Current ( $I_C=0$ , $V_{EB}=5V_{dc}$ )	---	---	100	nA
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ( $I_C=10mA_{dc}$ , $I_B=0.5mA_{dc}$ ) ( $I_C=100mA_{dc}$ , $I_B=5mA_{dc}^*$ )	---	90 200	250 600	mVdc mVdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage ( $I_C=10mA_{dc}$ , $I_B=0.5mA_{dc}$ ) ( $I_C=100mA_{dc}$ , $I_B=5mA_{dc}^*$ )	---	700 900	---	mVdc mVdc
$h_{FE}$	DC Current Gain ( $I_C=10\mu A$ ; $V_{CE}=5V$ ) BC846AW; BC847AW; BC848AW BC846BW; BC847BW; BC848BW BC847CW; BC848CW DC Current Gain ( $I_C=2mA$ ; $V_{CE}=5V$ ) BC846AW; BC847AW; BC848AW BC846BW; BC847BW; BC848BW BC847CW; BC848CW	---	90 150 270	---	
$V_{BE}$	Base-emitter Voltage ( $I_C=2mA_{dc}$ , $V_{CE}=5V$ ) ( $I_C=10mA_{dc}$ , $V_{CE}=5V$ )	580 ---	660 ---	700 770	mVdc mVdc
$C_C$	Collector Capacitance ( $V_{CB}=10V$ ; $I_E=I_e=0$ ; $f=1MHz$ )	---	---	4.5	pF
$f_T$	Transition Frequency ( $V_{CE}=5V$ ; $I_C=10mA$ ; $f=100MHz$ )	100	---	---	MHz
$F$	Noise Figure ( $V_{CE}=5V$ ; $I_C=200\mu A$ ; $f=1KHz$ ; $B=200Hz$ ; $R_s=2K\Omega$ )	---	---	10	dB

\* Pulse test:  $t_p \leq 300\mu s$ ;  $\delta \leq 0.02$

## Typical Characteristics

846AW,BW;BC847AW, BW, CW;BC848AW, BW, CW





## Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel; 3Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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