

Micro Commercial Components



Micro Commercial Components
20736 Marilla Street Chatsworth
CA 91311
Phone: (818) 701-4933
Fax: (818) 701-4939

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
- Moisture 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

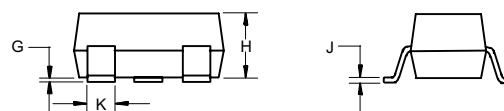
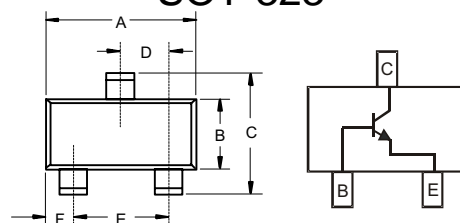
Symbol	Parameter	Min	Max	Units
--------	-----------	-----	-----	-------

OFF CHARACTERISTICS

DC CHARACTERISTICS				
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ($I_C=10\mu A$, $I_E=0$)			Vdc
	BC846AW/BW	---	80	
	BC847AW/BW/CW	---	50	
	BC848AW/BW/CW	---	30	
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage ($I_C=10mA$, $I_B=0$)			Vdc
	BC846AW/BW	---	65	
	BC847AW/BW/CW	---	45	
	BC848AW/BW/CW	---	30	
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ($I_E=1\mu A$, $I_C=0$)			Vdc
	BC846AW/BW, BC847AW/BW/CW	---	6	
	BC848AW/BW/CW	---	5	
I_C	Collector Current (DC)	---	100	mA
I_{CM}	Peak Collector Current	---	200	mA
I_{RM}	Peak Base Current	---	200	mA

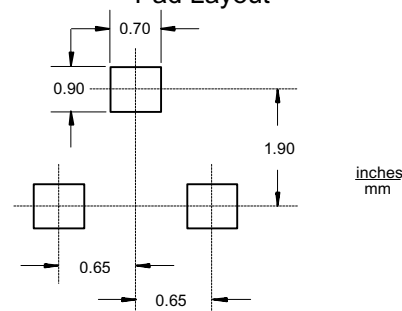
* Transistor mounted on an FR4 printed-circuit board

SOT-323



DIMENSIONS					
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 μA
I_{EBO}	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 ($V_{CB}=10V$; $I_E=I_B=0$; $f=1MHz$)	---	---	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

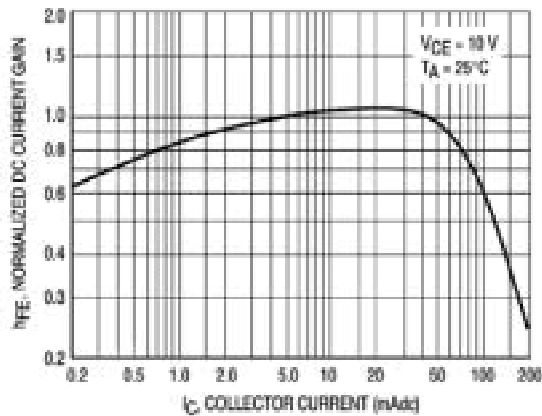


Figure 1. Normalized DC Current Gain

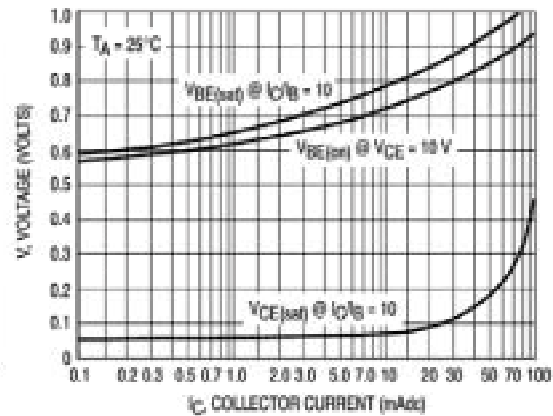


Figure 2. "Saturation" and "On" Voltages

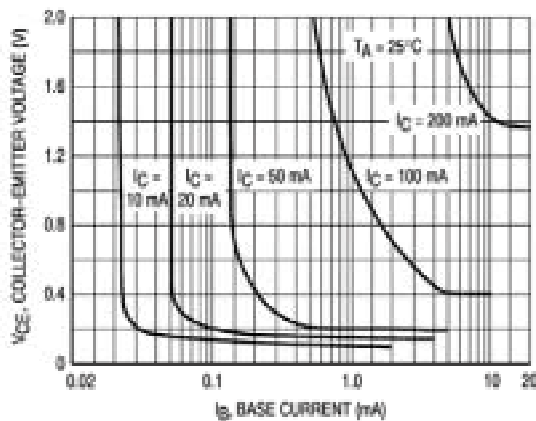


Figure 3. Collector Saturation Region

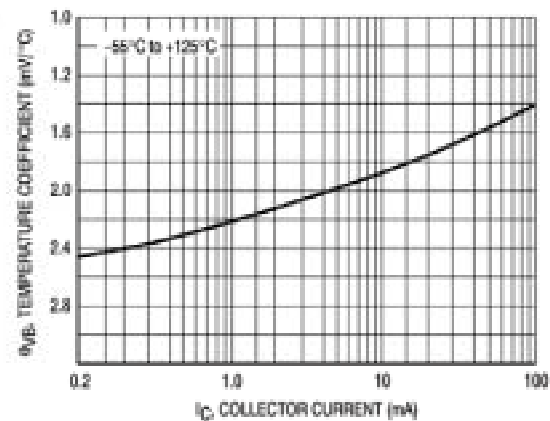


Figure 4. Base-Emitter Temperature Coefficient

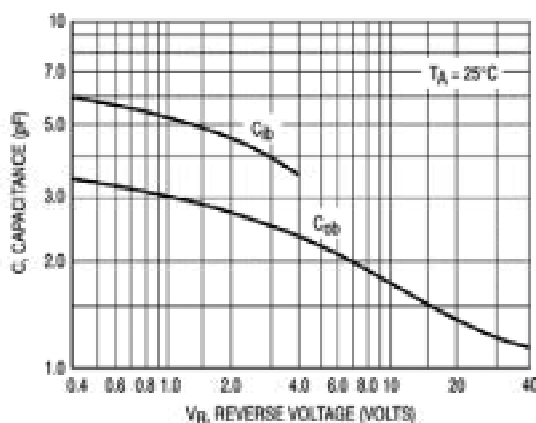


Figure 5. Capacitances

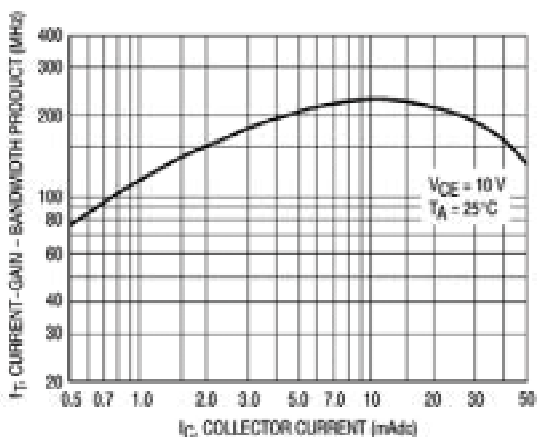


Figure 6. Current-Gain - Bandwidth Product

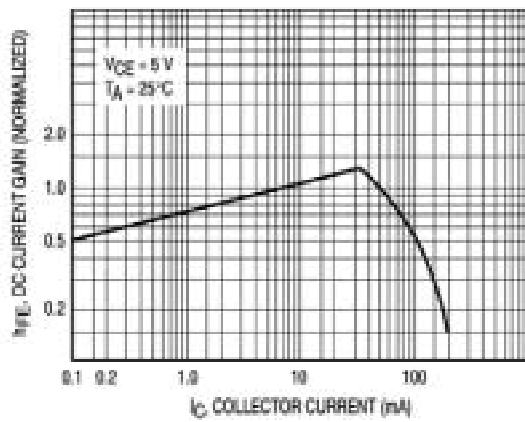


Figure 7. DC Current Gain

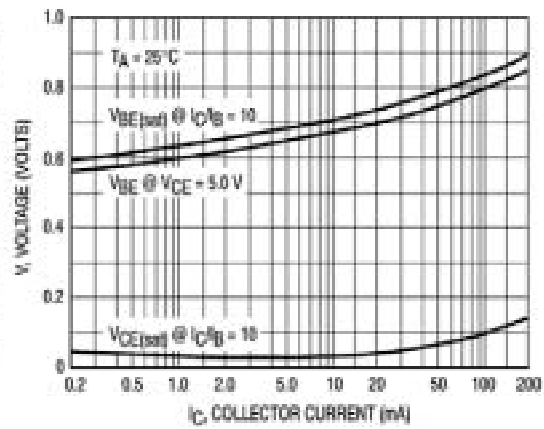


Figure 8. "On" Voltage

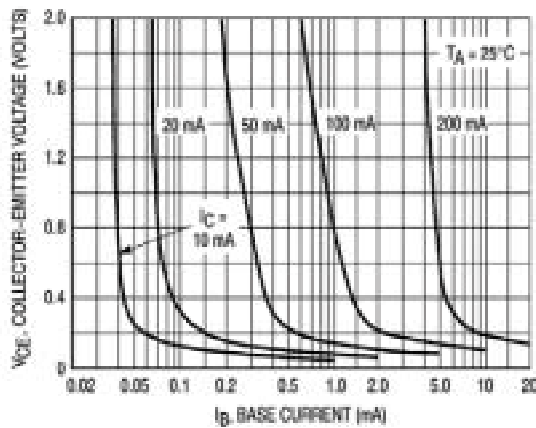


Figure 9. Collector Saturation Region

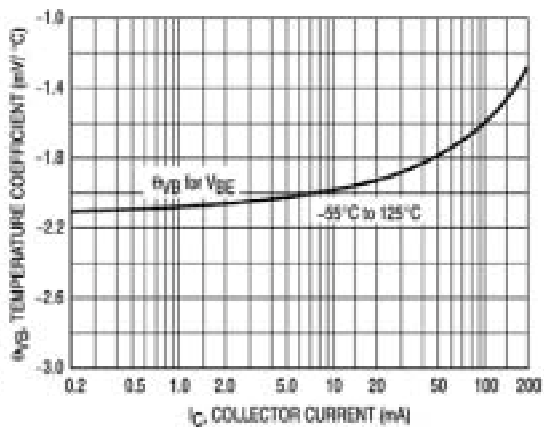


Figure 10. Base-Emitter Temperature Coefficient

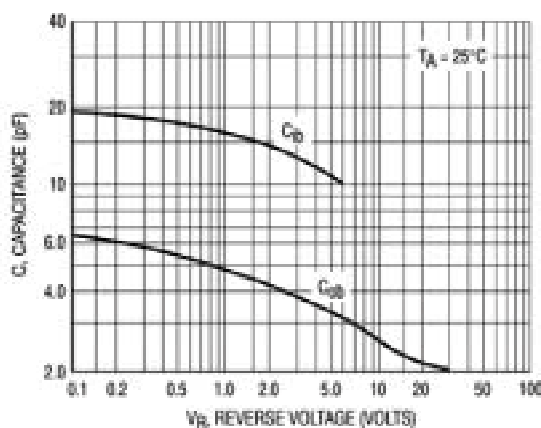


Figure 11. Capacitance

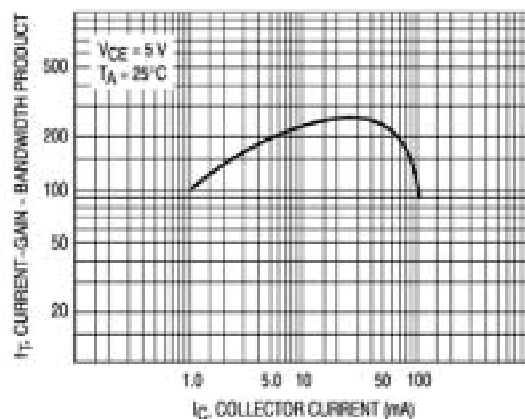


Figure 12. Current-Gain - Bandwidth Product

Ordering Information :

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

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

IMPORTANT NOTICE

Micro Commercial Components Corp. reserves the right to make changes without further notice to any product herein to make corrections, modifications, enhancements, improvements, or other changes. **Micro Commercial Components Corp.** does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold **Micro Commercial Components Corp.** and all the companies whose products are represented on our website, harmless against all damages.

LIFE SUPPORT

MCC's products are not authorized for use as critical components in life support devices or systems without the express written approval of Micro Commercial Components Corporation.

CUSTOMER AWARENESS

Counterfeiting of semiconductor parts is a growing problem in the industry. Micro Commercial Components (MCC) is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. MCC strongly encourages customers to purchase MCC parts either directly from MCC or from Authorized MCC Distributors who are listed by country on our web page cited below. Products customers buy either from MCC directly or from Authorized MCC Distributors are genuine parts, have full traceability, meet MCC's quality standards for handling and storage. **MCC will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources.** MCC is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.