



Micro Commercial Components



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

# BC847AT, BT, CT

## Features

- Halogen free available upon request by adding suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epitaxial Die Construction
- Complementary PNP Type Available (BC857AT,BT,CT)
- Ultra-Small Surface Mount Package
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

## Maximum Data

- Case: SOT-523
- Terminals: Solderable per MIL-STD-202, Method 208
- Polarity: See Diagram
- Marking:BC847AT--1E,BC847BT--1F,BC847CT-1G.

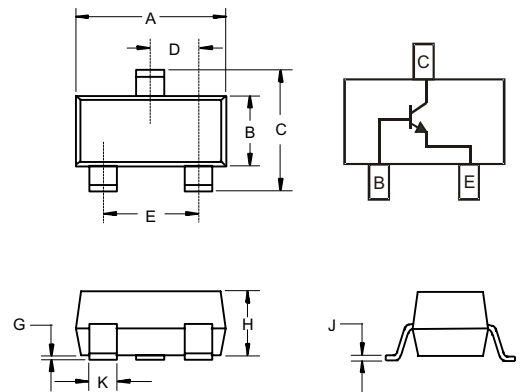
### Maximum Ratings @ 25°C Unless Otherwise Specified

Symbol	Parameter	Value	Units
<b>OFF CHARACTERISTICS</b>			
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	45	Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	50	Vdc
$V_{(BR)EBO}$	Collector-Emitter Breakdown Voltage	6.0	Vdc
$I_C$	Collector Current	100	mAdc
$P_d$	Power Dissipation (Note 1)	150	mW
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient(Note 1)	833	°C/W
$T_J, T_{STG}$	Operating & Storage Temperature	-55~+150	°C

Note: 1. Device mounted on FR-4 PCB with recommended pad layout

## NPN Surface Mount Small Signal Transistor 150mW

### SOT-523



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.059	.067	1.50	1.70	
B	.030	.033	0.75	0.85	
C	.057	.069	1.45	1.75	
D	.020 Nominal		0.50Nominal		
E	.035	.043	0.90	1.10	
G	.000	.004	.000	.100	
H	.028	.031	.70	0.80	
J	.004	.008	.100	.200	
K	.010	.014	.25	.35	

## Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Typ	Max	Units	Test Condition
<b>OFF CHARACTERISTICS</b>						
$h_{FE}$	DC Current Gain (Note 2)					$V_{CE}=5.0V, I_C=2.0mA$
	Current Gain A	110	---	222	---	
	B	200	290	450	---	
	C	420	520	800	---	
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage (Note 2)	---	---	250 600	mV	$I_C=10mA, I_B=0.5mA$ $I_C=100mA, I_B=5.0mA$
$V_{BE(SAT)}$	Base-Emitter Saturation Voltage (Note 2)	---	700 900	---	mV	$I_C=10mA, I_B=0.5mA$ $I_C=100mA, I_B=5.0mA$
$V_{BE(ON)}$	Base-Emitter Voltage (Note 2)	580 ---	660 ---	700 770	mV	$V_{CE}=5.0V, I_C=2.0mA$ $V_{CE}=5.0V, I_C=10mA$
$I_{CBO}$ $I_{CBO}$	Collector-Cutoff Current (Note 2)	---	---	15	nA	$V_{CB}=30V, I_E=0$ $V_{CB}=30V, T_J=125^\circ C$
		---	---	5.0	$\mu A$	
$f_T$	Gain Bandwidth Product	100	---	---	MHz	$V_{CE}=5.0V, I_C=10mA,$ $f=100MHz$
$C_{CBO}$	Collector-Base Capacitance	---	---	4.5	pF	$V_{CB}=10V, f=1.0MHz$
NF	Noise Figure	---	---	10	dB	$V_{CE}=5V, R_S=2.0Kohm,$ $f=1.0MHz, BW=200HZ$
		BC847BT	---	---		
	BC847CT	---	---	4.0		

Note: 2. Short duration pulse test used to minimize self-heating effect.



Micro Commercial Components

### Ordering Information :

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

[www.mccsemi.com](http://www.mccsemi.com)