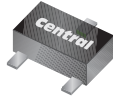


BC846T SERIES  
BC847T SERIES

SURFACE MOUNT  
NPN SILICON TRANSISTOR

ULTRAmulti™



SOT-523 CASE



www.centralesemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR BC846T and BC847T Series types are NPN Silicon Transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for general purpose switching and amplifier applications.

MARKING CODE: SEE MARKING CODE TABLE  
ON FOLLOWING PAGE

MAXIMUM RATINGS: ( $T_A=25^\circ\text{C}$ )

Collector-Base Voltage  
Collector-Emitter Voltage  
Emitter-Base Voltage  
Continuous Collector Current  
Peak Collector Current  
Peak Base Current  
Power Dissipation  
Operating and Storage Junction Temperature  
Thermal Resistance

SYMBOL	BC847T	BC846T	UNITS
$V_{CB0}$	50	80	V
$V_{CEO}$	45	65	V
$V_{EBO}$		5.0	V
$I_C$		100	mA
$I_{CM}$		200	mA
$I_{BM}$		100	mA
$P_D$		250	mW
$T_J, T_{stg}$		-65 to +150	$^\circ\text{C}$
$\theta_{JA}$		500	$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS: ( $T_A=25^\circ\text{C}$  unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$I_{CBO}$	$V_{CB}=30\text{V}$			15	nA
$I_{CBO}$	$V_{CB}=30\text{V}, T_A=150^\circ\text{C}$			5.0	$\mu\text{A}$
$I_{EBO}$	$V_{EB}=5.0\text{V}$			100	nA
$BV_{CBO}$	$I_C=10\mu\text{A}$ (BC847T)	50			V
$BV_{CBO}$	$I_C=10\mu\text{A}$ (BC846T)	80			V
$BV_{CEO}$	$I_C=10\text{mA}$ (BC847T)	45			V
$BV_{CEO}$	$I_C=10\text{mA}$ (BC846T)	65			V
$BV_{EBO}$	$I_E=10\mu\text{A}$	5.0			V
$V_{CE(SAT)}$	$I_C=10\text{mA}, I_B=0.5\text{mA}$			0.20	V
$V_{CE(SAT)}$	$I_C=100\text{mA}, I_B=5.0\text{mA}$			0.40	V
$V_{BE(ON)}$	$I_C=2.0\text{mA}, V_{CE}=5.0\text{V}$	0.58		0.70	V
$V_{BE(ON)}$	$I_C=10\text{mA}, V_{CE}=5.0\text{V}$			0.77	V
$f_T$	$V_{CE}=5.0\text{V}, I_C=10\text{mA}, f=100\text{MHz}$	100			MHz
$C_c$	$V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$			1.5	pF
$C_e$	$V_{EB}=0.5\text{V}, I_C=0, f=1.0\text{MHz}$		11		pF
NF	$V_{CE}=5.0\text{V}, I_C=200\mu\text{A}, R_S=2.0\text{K}\Omega, f=1.0\text{KHz}, BW=200\text{Hz}$			10	dB
		<u>BC846AT</u>		<u>BC846BT</u>	
		<u>BC847AT</u>		<u>BC847BT</u>	
		MIN	MAX	MIN	MAX
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=2.0\text{mA}$	110	220	200	450
				<u>BC847CT</u>	
				MIN	MAX
				420	800

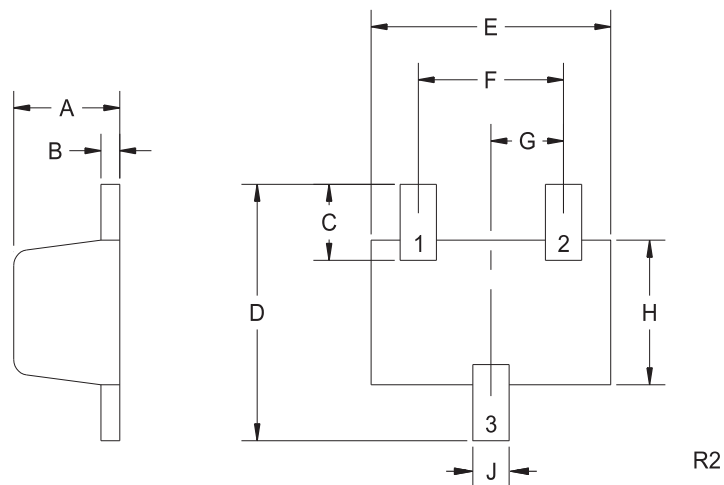
BC846T SERIES  
BC847T SERIES

SURFACE MOUNT  
NPN SILICON TRANSISTOR



SOT-523 CASE - MECHANICAL OUTLINE

BOTTOM VIEW



LEAD CODE:

- 1) BASE
- 2) EMITTER
- 3) COLLECTOR

DEVICE	MARKING CODE
BC846AT	GT1
BC846BT	GT2
BC847AT	GT3
BC847BT	GT4
BC847CT	GT5

DIMENSIONS				
SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.023	0.031	0.58	0.78
B	0.002	0.008	0.04	0.20
C	0.013	0.021	0.34	0.54
D	0.059	0.067	1.50	1.70
E	0.059	0.067	1.50	1.70
F	0.035	0.043	0.90	1.10
G	0.020		0.50	
H	0.031	0.039	0.78	0.98
J	0.010	0.014	0.25	0.35

SOT-523 (REV: R2)

R1 (20-November 2009)

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

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### DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2<sup>nd</sup> day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

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### REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix " TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix " PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

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### CONTACT US

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