

**Features**

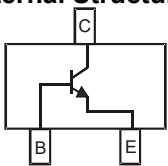
- Halogen free available upon request by adding suffix "-HF"
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

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

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Maximum Thermal Resistance: 625°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$		V
BC846A-BC846B		80	
BC847A-BC847C		50	
BC848A-BC848C, BC849B-BC849C		30	
Collector-Emitter Voltage	$V_{CEO}$		V
BC846A-BC846B		65	
BC847A-BC847C		45	
BC848A-BC848C, BC849B-BC849C		30	
Emitter-Base Voltage	$V_{EBO}$	6	V
Collector Current	$I_C$	100	mA
Collector Power Dissipation @ $T_A=25^\circ\text{C}$ (Note1)	$P_C$	225	mW

**Internal Structure**

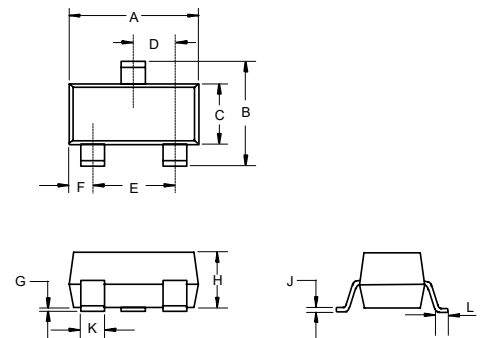


**Marking:**

BC846A:1A; BC846B:1B;  
BC847A:1E; BC847B:1F; BC847C:1G;  
BC848A:1J; BC848B:1K; BC848C:1L;  
BC849B:49B; BC849C:49C;

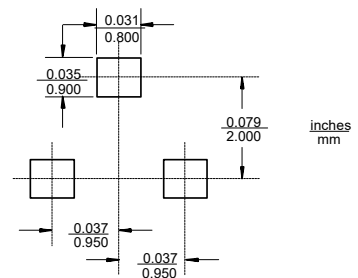
**NPN  
Plastic-Encapsulate  
Transistors**

**SOT-23**



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.110	0.120	2.80	3.04	
B	0.083	0.104	2.10	2.64	
C	0.047	0.055	1.20	1.40	
D	0.034	0.041	0.85	1.05	
E	0.067	0.083	1.70	2.10	
F	0.018	0.024	0.45	0.60	
G	0.0004	0.006	0.01	0.15	
H	0.035	0.043	0.90	1.10	
J	0.003	0.007	0.08	0.18	
K	0.014	0.020	0.35	0.51	
L	0.007	0.020	0.20	0.50	

**Suggested Solder Pad Layout**



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

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage BC846A-BC846B BC847A-BC847C BC848A-BC848C,BC849B-BC849C	$V_{(BR)CBO}$	80 50 30			V	$I_C=10\mu A, I_E=0$
Collector-Emitter Breakdown Voltage BC846A-BC846B BC847A-BC847C BC848A-BC848C,BC849B-BC849C	$V_{(BR)CEO}$	65 45 30			V	$I_C=10mA, I_B=0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	6			V	$I_E=10\mu A, I_C=0$
Collector Cut-off Current BC846A-BC846B BC847A-BC847C BC848A-BC848C,BC849B-BC849C	$I_{CBO}$			0.1	$\mu A$	$V_{CB}=70V, I_E=0$ $V_{CB}=50V, I_E=0$ $V_{CB}=30V, I_E=0$
Collector Cut-off Current BC846A-BC846B BC847A-BC847C BC848A-BC848C,BC849B-BC849C	$I_{CEO}$			0.1	$\mu A$	$V_{CE}=60V, I_B=0$ $V_{CE}=45V, I_B=0$ $V_{CE}=30V, I_B=0$
Emitter Cut-off Current	$I_{EBO}$			0.1	$\mu A$	$V_{EB}=5V, I_C=0$
DC Current Gain BC846A,BC847A, BC848A BC846B,BC847B,BC848B, BC849B BC847C,BC848C,BC849C	$h_{FE}$	110 200 420		220 450 800		$V_{CE}=5V, I_C=2mA$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			0.5	V	$I_C=100mA, I_B=5mA$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$			1.10	V	$I_C=100mA, I_B=5mA$
Transition Frequency	$f_T$	100			MHz	$V_{CE}=5V, I_C=10mA, f=100MHz$
Collector Output Capacitance	$C_{ob}$			4.5	pF	$V_{CB}=10V, f=1MHz$

Note:

1. Transistor mounted on an FR4 printed-circuit board

**Curve Characteristics**

Fig. 1 - Static Characteristics

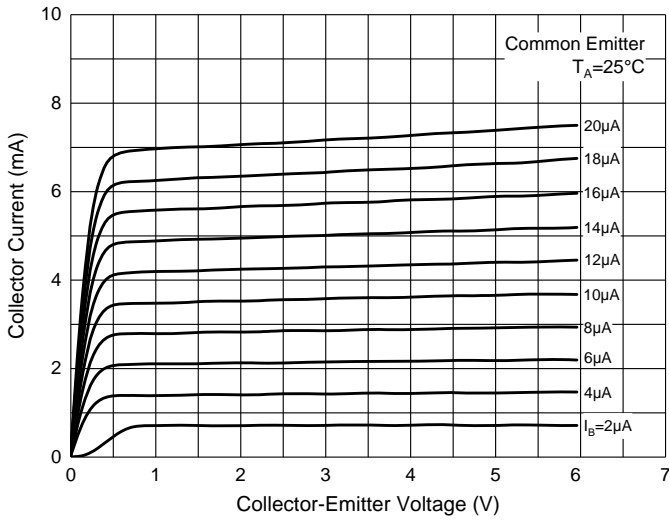


Fig. 2 - DC Current Gain Characteristics

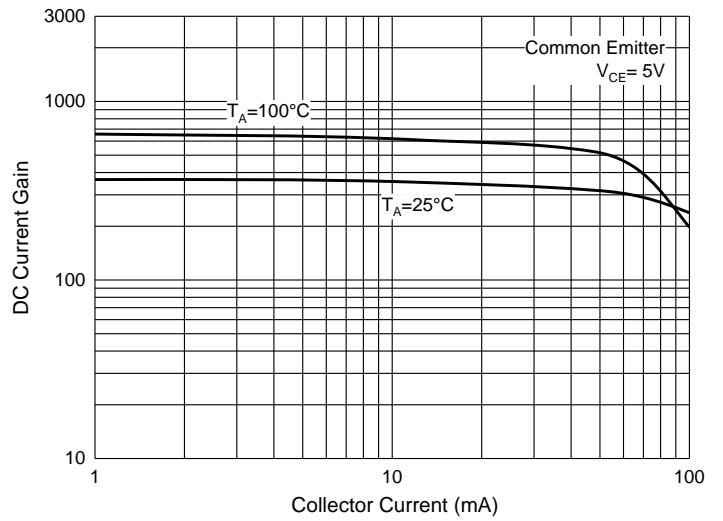


Fig. 3 - Base-Emitter Saturation Voltage Characteristics

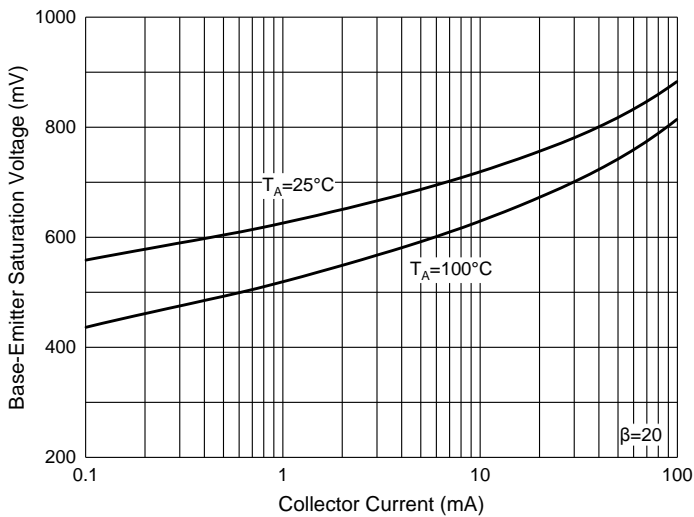


Fig. 4 - Collector-Emitter Saturation Voltage Characteristics

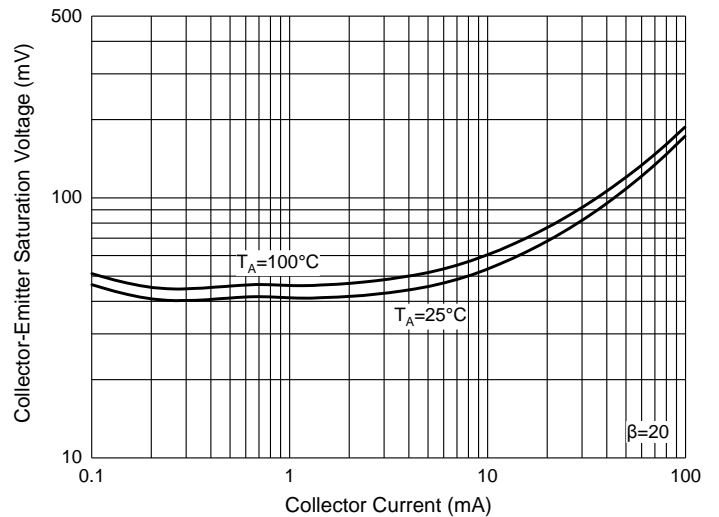


Fig. 5 - Base-Emitter Voltage Characteristics

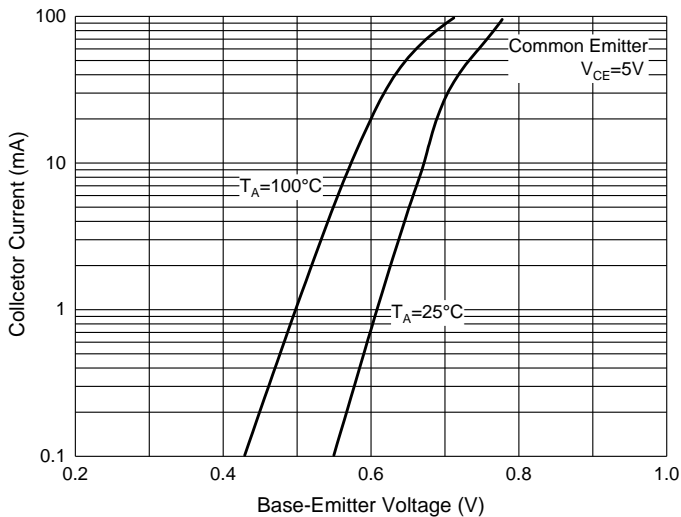
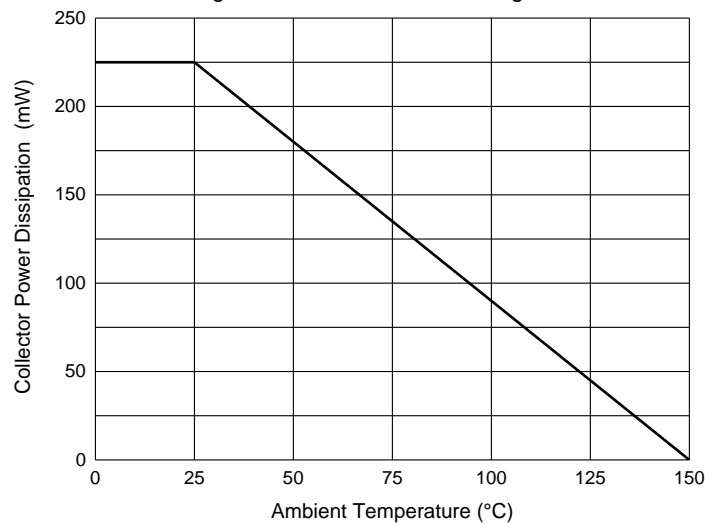


Fig. 6 - Collector Power Derating Curve



## 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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