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)

NPN Plastic-Encapsulate Transistors

Maximum Ratings @ 25°C Unless Otherwise Specified

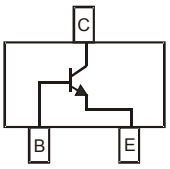
- Operating Junction Temperature Range: -55℃ to +150℃
- Storage Temperature Range: -55℃ to +150℃
- Maximum Thermal Resistance:472℃/W Junction to Ambient(Note 1)

Parameter	Symbol	Rating	Unit
Collector-Base Voltage BC846A-BC846B BC847A-BC847C BC848A-BC848C	V_{CBO}	80 50 30	V
Collector-Emitter Voltage BC846A-BC846B BC847A-BC847C BC848A-BC848C	V_{CEO}	65 45 30	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	100	mA
Collector Power Dissipation@T_A=25°C(Note1)	P_C	265	mW

Note:

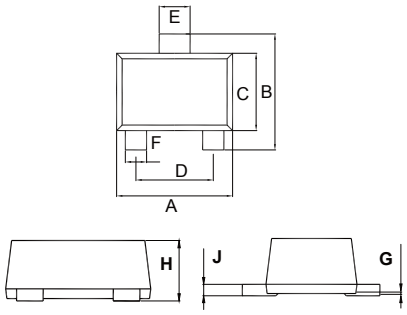
1. Device Mounted on FR−5: 1.0 X 0.75 X 0.062 inch.

Internal Structure



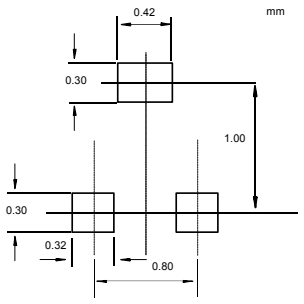
Marking:
BC846A:1A; BC846B:1B;
BC847A:1E; BC847B:1F; BC847C:1G;
BC848A:1J; BC848B:1K; BC848C:1L;

SOT-723



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.043	0.051	1.10	1.30	
B	0.043	0.051	1.10	1.30	
C	0.028	0.035	0.70	0.90	
D	0.031		0.80		TYP.
E	0.009	0.017	0.22	0.42	
F	0.005	0.013	0.12	0.32	
G	0.000	0.002	0.00	0.05	
H	0.017	0.021	0.43	0.54	
J	0.003	0.006	0.08	0.15	

Suggested Solder Pad Layout



Electrical Characteristics @ T_A=25°C Unless Otherwise Specified

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage						
BC846A-BC846B	$V_{(BR)CBO}$	80			V	I_C=10μA, I_E=0
BC847A-BC847C		50				
BC848A-BC848C		30				
Collector-Emitter Breakdown Voltage						
BC846A-BC846B	$V_{(BR)CEO}$	65			V	I_C=10mA, I_B=0
BC847A-BC847C		45				
BC848A-BC848C		30				
Emitter-Base Breakdown Voltage						
BC846A-BC846B	$V_{(BR)EBO}$	6			V	I_E=10μA, I_C=0
BC847A-BC847C		6				
BC848A-BC848C		5				
Collector Cut-off Current	I_{CBO}			15	nA	V_{CB}=30V, I_E=0
Emitter Cutoff Current	I_{EBO}			100	nA	V_{EB}=5V, I_C=0
Emitter Cutoff Current	I_{CEO}			1	mA	V_{CE}=30V, I_B=0
DC Current Gain						
BC846A/BC847A/BC848A	$h_{FE(1)}$		110			V_{CE}=5V, I_C=10μA
BC846B/BC847B/BC848B			250			
BC847C/BC848C			480			
DC Current Gain						
BC846A/BC847A/BC848A	$h_{FE(2)}$	110		220		V_{CE}=5V, I_C=2mA
BC846B/BC847B/BC848B		200		450		
BC847C/BC848C		420		800		
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		0.09	0.3	V	I_C=10mA, I_B=0.5mA
			0.2	0.6		I_C=100mA, I_B=5mA
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		0.7	0.9	V	I_C=10mA, I_B=0.5mA
			0.9	1.1		I_C=100mA, I_B=5mA
Base-Emitter On Voltage	$V_{BE(on)}$	0.58	0.66	0.7	V	V_{CE}=5V, I_C=2mA
				0.77		V_{CE}=5V, I_C=10mA
Transition Frequency	f_T	100			MHz	V_{CE}=5V, I_C=10mA, f=100MHz

Curve Characteristics

Fig. 1 - Static Characteristics

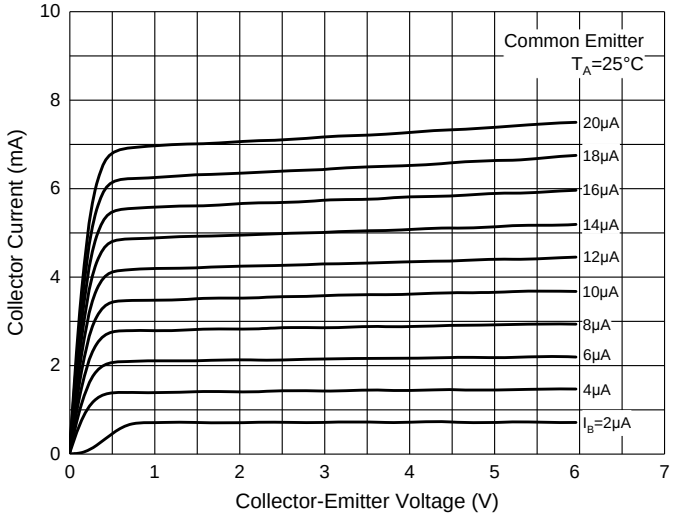


Fig. 2 - DC Current Gain Characteristics

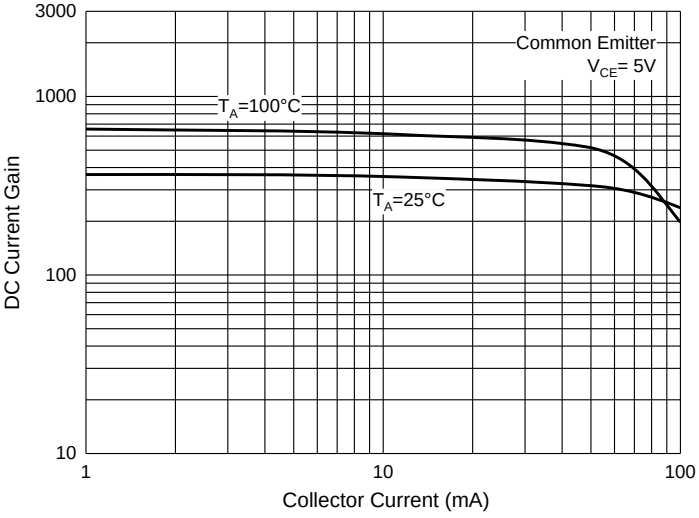


Fig. 3 - Base-Emitter Saturation Voltage Characteristics

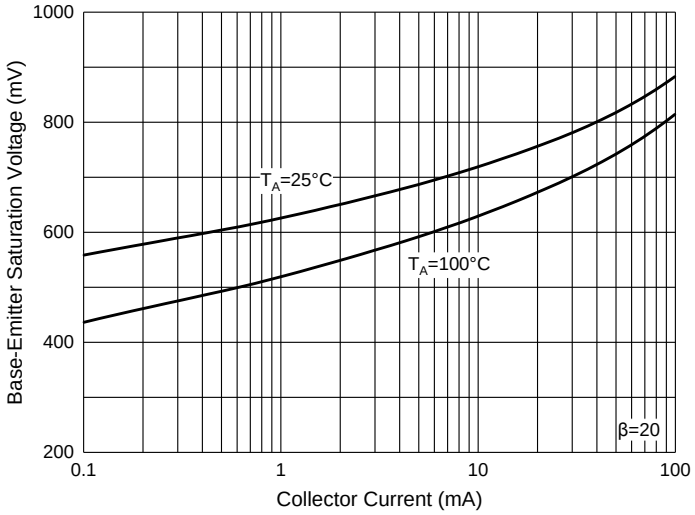


Fig. 4 - Collector-Emitter Saturation Voltage Characteristics

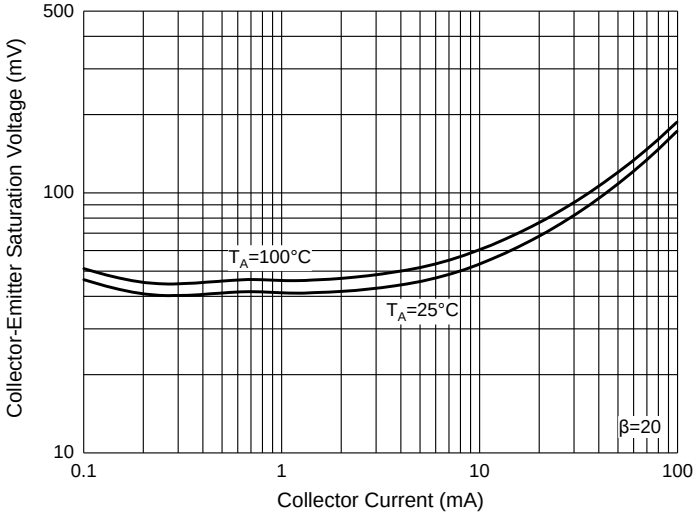


Fig. 5 - Base-Emitter Voltage Characteristics

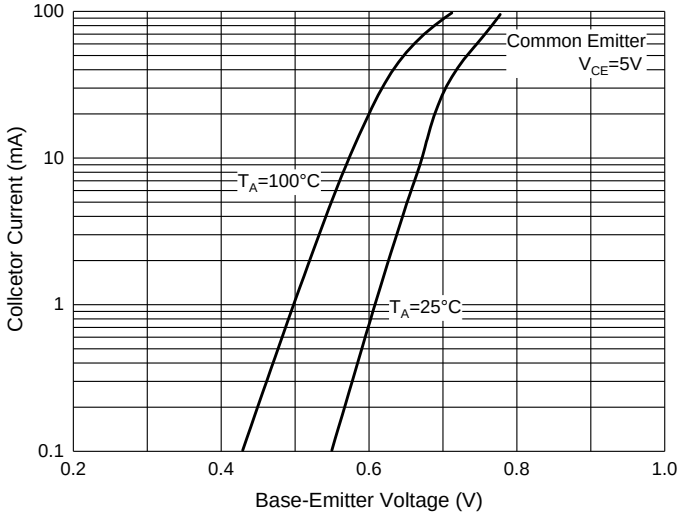
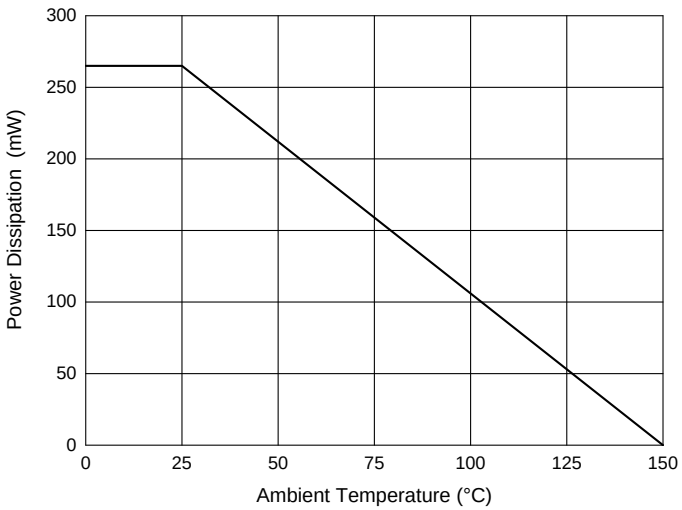


Fig. 6 - Power Derating Curve



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 8Kpcs/Reel

Note : Adding "-HF" Suffix For Halogen Free, eg. Part Number-TP-HF