

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

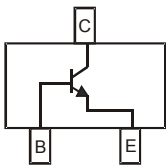
- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Maximum Thermal Resistance: 472°C/W Junction to Ambient^(Note 1)

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	80	V
BC846A-BC846B		50	
BC847A-BC847C		30	
Collector-Base Voltage	V_{CEO}	65	V
BC846A-BC846B		45	
BC847A-BC847C		30	
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	100	mA
Collector Power Dissipation@ $T_A=25^\circ\text{C}$ ^(Note 1)	P_C	265	mW

Note:

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

Internal Structure

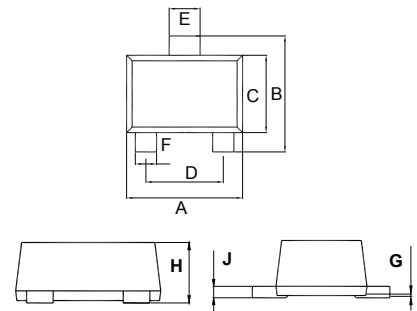


Marking:

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

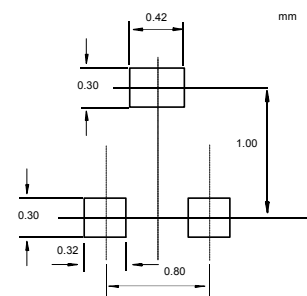
NPN Plastic-Encapsulate Transistors

SOT-723



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 @ $T_A=25^\circ\text{C}$ Unless Otherwise Specified

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

Curve Characteristics

Fig. 1 - Static Characteristics

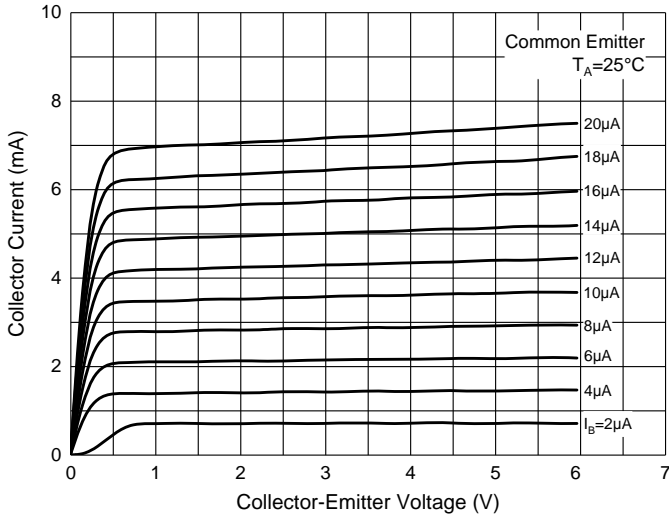


Fig. 2 - DC Current Gain Characteristics

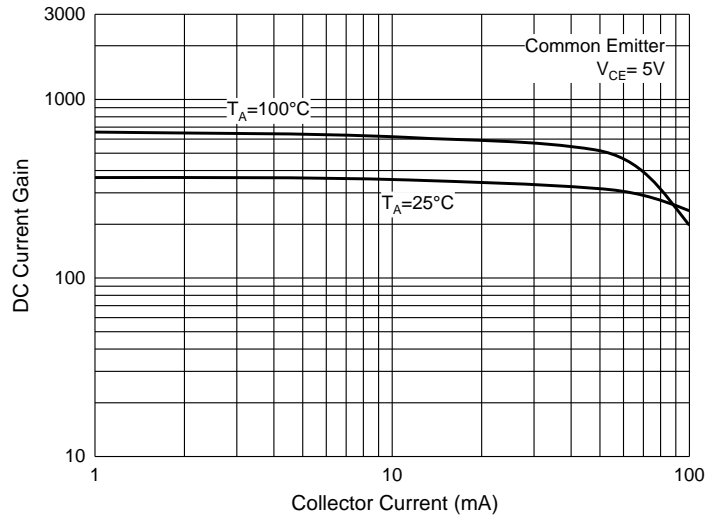


Fig. 3 - Base-Emitter Saturation Voltage Characteristics

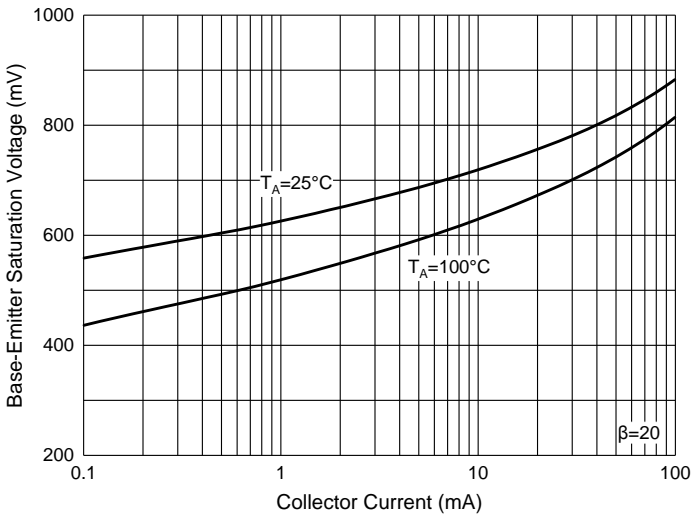


Fig. 4 - Collector-Emitter Saturation Voltage Characteristics

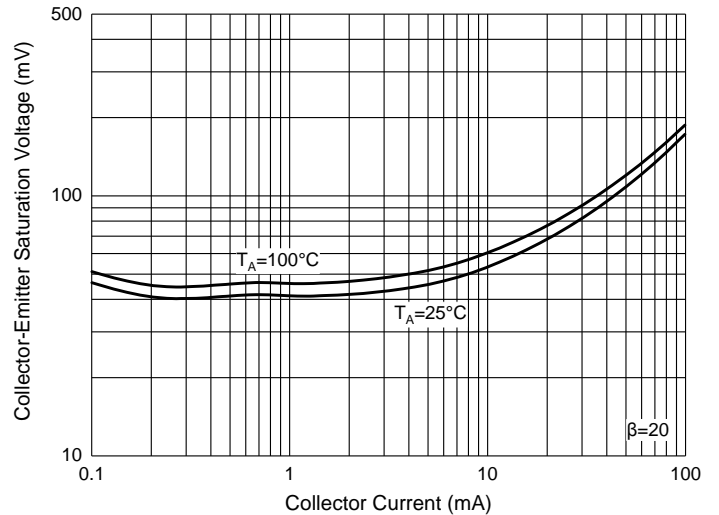


Fig. 5 - Base-Emitter Voltage Characteristics

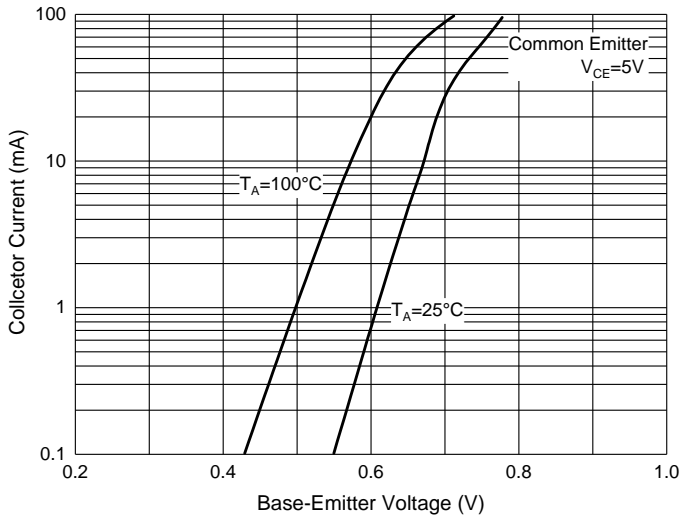
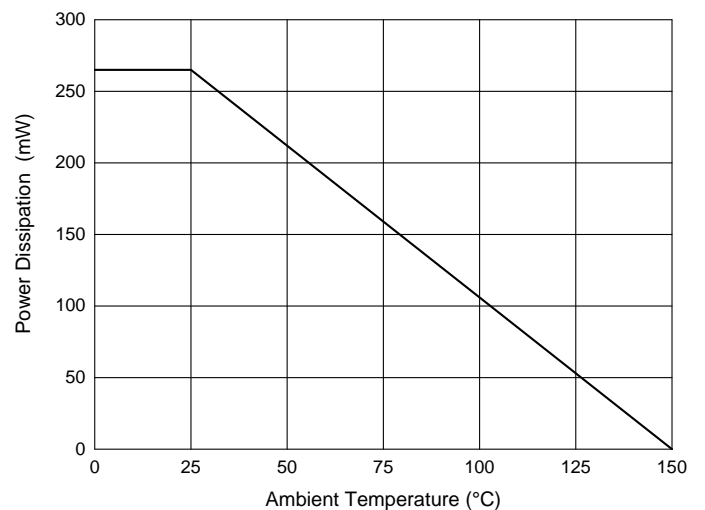


Fig. 6 - Power Derating Curve



Ordering Information

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

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

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