

Features

- Halogen Free. "Green" Device (Note 1)
- 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

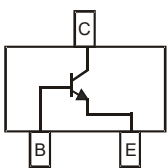
- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Maximum Thermal Resistance: 472°C/W Junction to Ambient^(Note 2)

Parameter	Symbol	Rating	Unit
Collector-Base Voltage BC846AM3-BC846BM3 BC847AM3-BC847CM3 BC848AM3-BC848CM3	V_{CBO}	80 50 30	V
Collector-Emitter Voltage BC846AM3-BC846BM3 BC847AM3-BC847CM3 BC848AM3-BC848CM3	V_{CEO}	65 45 30	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	100	mA
Peak Base Current ^(Note 3)	I_{BM}	200	mA
Collector Power Dissipation @ $T_A=25^\circ\text{C}$ ^(Note 2)	P_C	265	mW

Note:

1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. Device Mounted on FR-5: 1.0 X 0.75 X 0.062 inch.
3. Single pulse; $t_p < 1$ ms.

Internal Structure

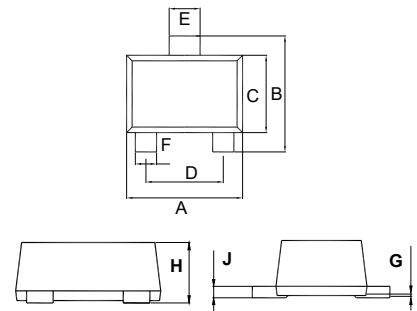


Marking:

BC846AM3:1A; BC846BM3:1B;
BC847AM3:1E; BC847BM3:1F; BC847CM3:1G;
BC848AM3:1J; BC848BM3:1K; BC848CM3:1L;

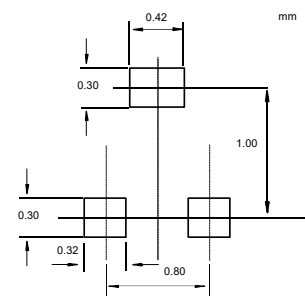
NPN Plastic-Encapsulate Transistors

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	$I_C=10\mu\text{A}, I_E=0$
BC846AM3-BC846BM3		80				
BC847AM3-BC847CM3		50				
BC848AM3-BC848CM3		30				
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$				V	$I_C=10\text{mA}, I_B=0$
BC846AM3-BC846BM3		65				
BC847AM3-BC847CM3		45				
BC848AM3-BC848CM3		30				
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$				V	$I_E=10\mu\text{A}, I_C=0$
BC846AM3-BC846BM3		6				
BC847AM3-BC847CM3		6				
BC848AM3-BC848CM3		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			$V_{CE}=5\text{V}, I_C=10\mu\text{A}$
BC846AM3/BC847AM3/BC848AM3			250			
BC846BM3/BC847BM3/BC848BM3			480			
BC847CM3/BC848CM3						
DC Current Gain	$h_{FE(2)}$					$V_{CE}=5\text{V}, I_C=2\text{mA}$
BC846AM3/BC847AM3/BC848AM3		110		220		
BC846BM3/BC847BM3/BC848BM3		200		450		
BC847CM3/BC848CM3		420		800		
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
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
Base-Emitter On Voltage	$V_{BE(on)}$	0.52	0.66	0.7	V	$V_{CE}=5\text{V}, I_C=2\text{mA}$
				0.77		
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

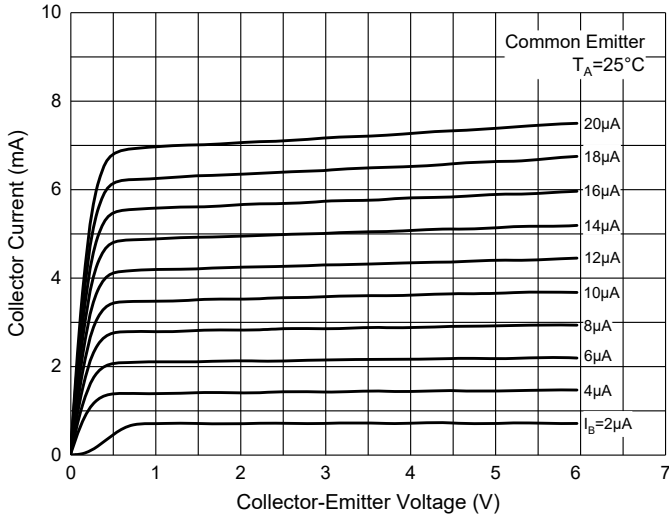


Fig. 2 - DC Current Gain Characteristics

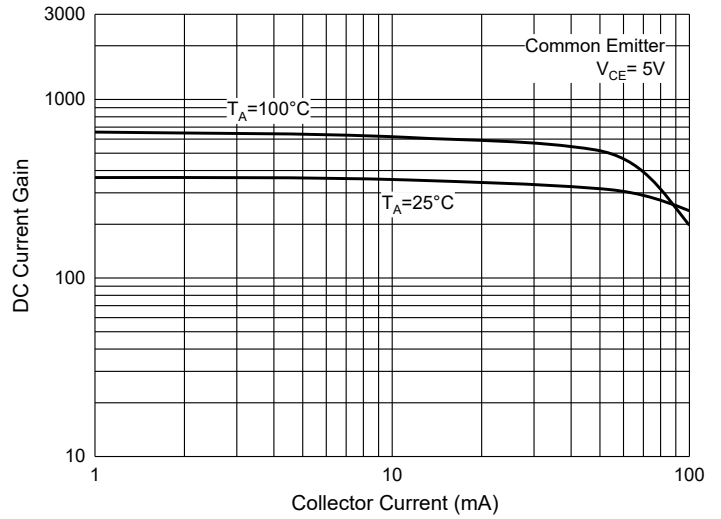


Fig. 3 - Base-Emitter Saturation Voltage Characteristics

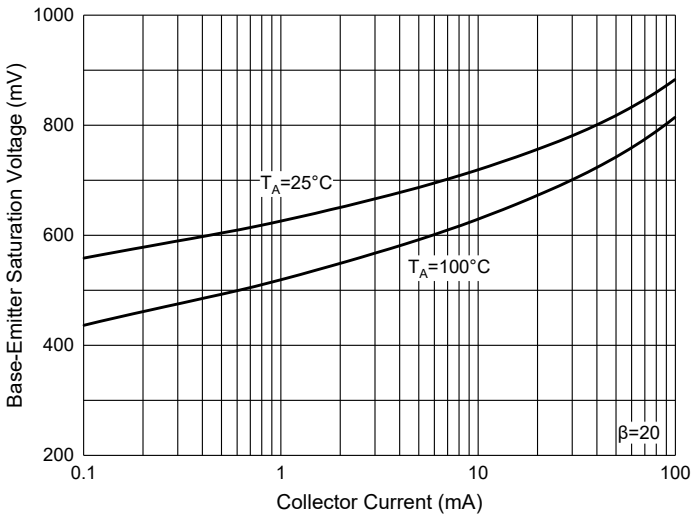


Fig. 4 - Collector-Emitter Saturation Voltage Characteristics

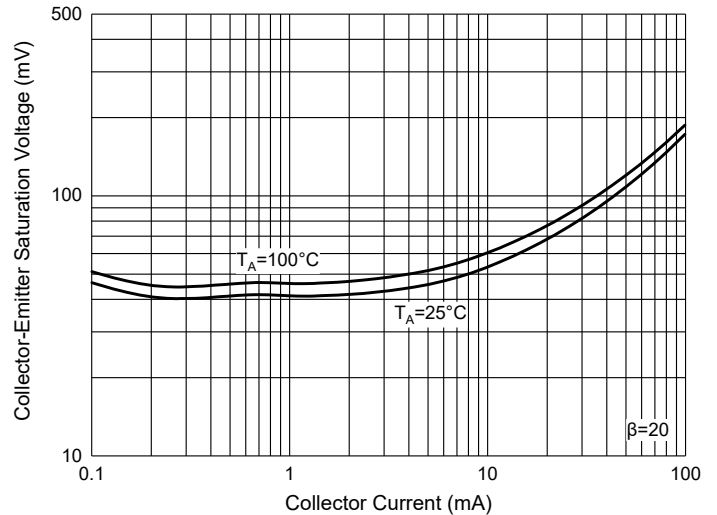


Fig. 5 - Base-Emitter Voltage Characteristics

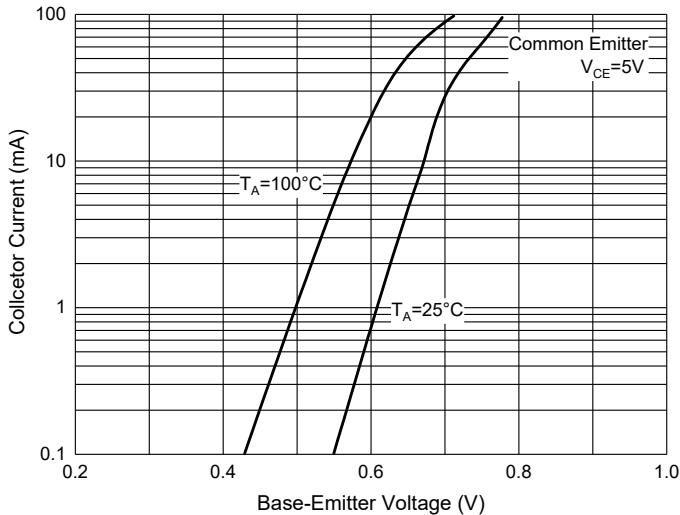
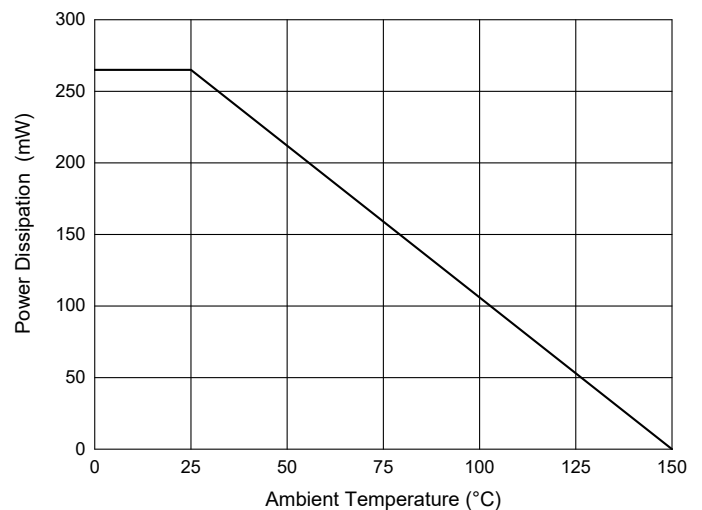


Fig. 6 - Power Derating Curve



Ordering Information

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

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