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Features

- Moisture sensitivity level 1
- Halogen free and RoHS compliant
- Surface mount package ideally suited for automatic insertion

Application

- Signal amplification
- Switching circuit

Mechanical data

- **Package** SOT-723
- **Terminals** Tin plated leads, solderable per J-STD-002 and JESD22-B102

Maximum Ratings ($T_a=25$ Unless otherwise specified)

	Collector-base voltage	Collector-emitter voltage	Collector current (continuous)	Collector current (pulsed)	Storage temperature
Device marking code			BC846AM3		1A
			BC846BM3		1B
			BC847AM3		1E
			BC847BM3		1F
			BC847CM3		1G
			BC848AM3		1J
			BC848BM3		1K
			BC848CM3		1L
Collector-base voltage	V_{CBO}	V	BC846	BC846	$I_C=10\mu A, I_E=0$
					80



BC846AM3 THRU BC848CM3

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Item	Symbol	Unit	Conditions	Value
Emitter-base voltage	V_{EBO}	^{CB} V	$I_E=10\mu A, I_C=0$	6
Collector current	I_C	mA		100
Power dissipation	P_D	mW		100
Junction temperature	T_J			-55 to +150
Storage temperature	T_{STG}			-55 to +150

Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-base breakdown voltage	$V_{(BR)CBO}$	V	BC846	$I_C=10\mu A, I_E=0$	80	
			BC847		50	
			BC848		30	
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	V	BC846	$I_C=10mA, I_B=0$	65	
			BC847		45	
			BC848		30	
Emitter-base breakdown voltage	$V_{(BR)EBO}$	V	$I_E=10\mu A, I_C=0$	6		
Collector cut-off current	I_{CBO}	uA	BC846	$V_{CB}=70V, I_E=0$		0.1
			BC847	$V_{CB}=50V, I_E=0$		0.1
			BC848	$V_{CB}=30V, I_E=0$		0.1
Emitter-base cutoff current	I_{EBO}	uA	$V_{EB}=5V, I_C=0$			0.1
DC current gain	h_{FE}		BC846A,847A,848A	$V_{CE}=5V, I_C=2mA$ = .5	110	220
			BC846B,847B,848B		200	450
			BC847C,BC848C		420	800
Collector-emitter saturation voltage	$V_{CE(sat)}$	V	$I_C=100mA, I_B=5mA$			0.5

$I_C=100mA, I_B=5mA$

$f_c=10MHz, f_{400}, I_C=100mA, I_B=5mA$

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Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	R J-A ⁽¹⁾	/W	1250
Thermal resistance, junction-to-case	R J-C ⁽¹⁾	/W	1000

Note:

1 Thermal resistance from junction to ambient and from junction to case mounted on P.C.B. with 25.4mm*25.4mm copper pad areas

Characteristics

Fig 1 Static Characteristics

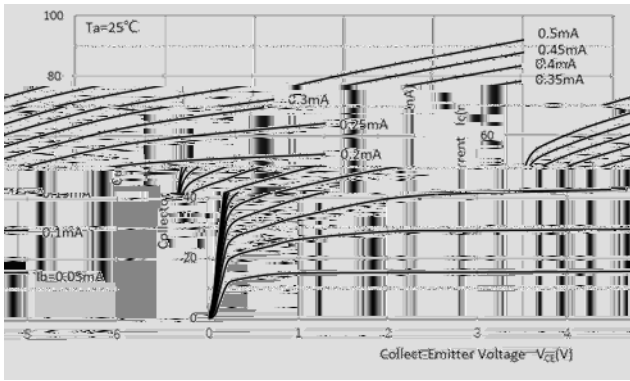


Fig 2 DC Current Gain Characteristics



Fig 3 Collector-Emitter Saturation Voltage

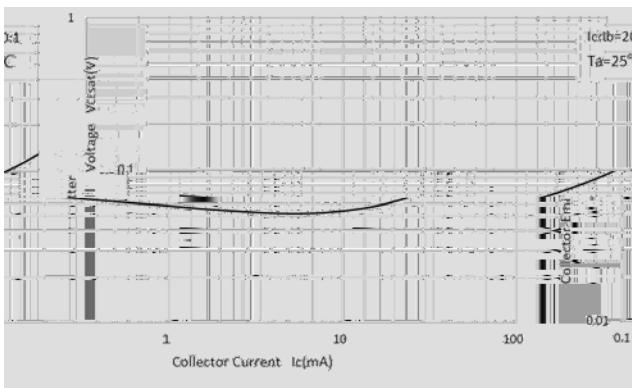
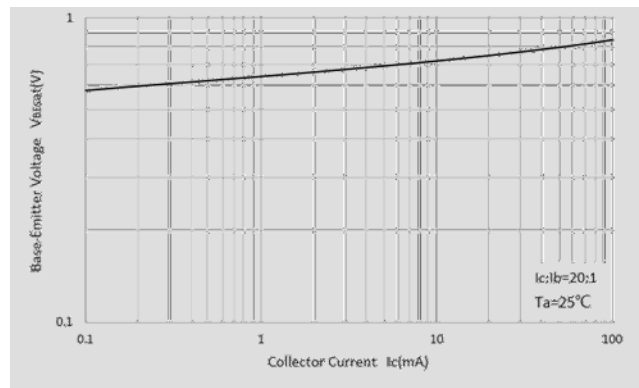


Fig 4 Base-Emitter Saturation Voltage





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Fig 5 Base-Emitter on Voltage

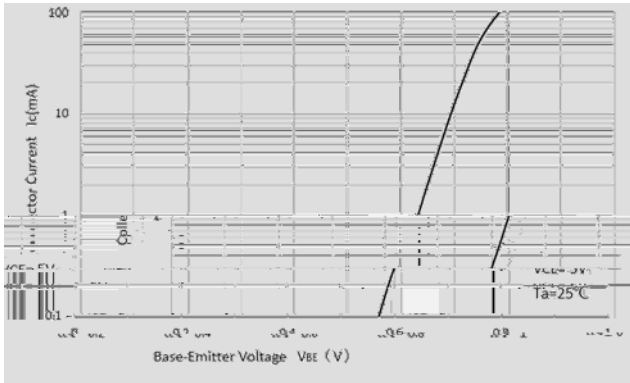


Fig 6 C_{ob}/C_{ib}-V_{CB}/V_{EB}

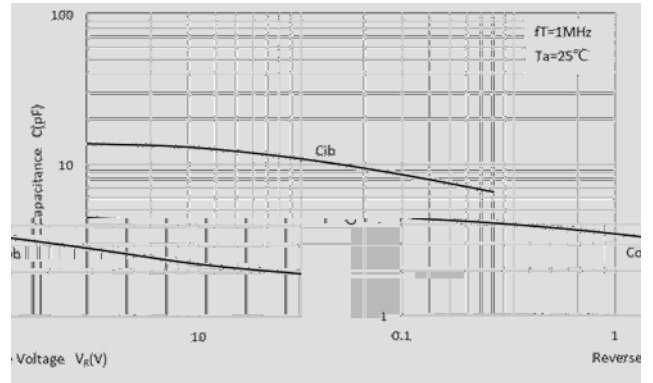
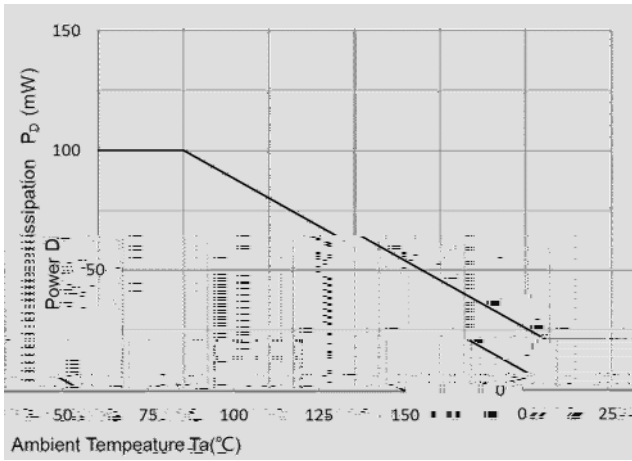


Fig 7 P_D-T_a Curve





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Ordering Information

Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
BC846AM3 THRU BC848CM3	F2	Approximate 0.0013	8000	80000	320000	7" reel

Outline Dimensions

DIMENSIONS				
PARAMETER	MIN	MAX	UNIT	MIN
b1	0.022	0.430		0.017
D		0.550	A	
e				
c				
A1				
θ		7°REF		7°

Suggested Pad Layout

