

BC846AM3-TP Datasheet

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DiGi Electronics Part Number	BC846AM3-TP-DG
Manufacturer	Micro Commercial Co
Manufacturer Product Number	BC846AM3-TP
Description	Interface
Detailed Description	Bipolar (BJT) Transistor NPN 65 V 100 mA 100MHz 2 65 mW Surface Mount SOT-723

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Purchase and inquiry

Manufacturer Product Number:

BC846AM3-TP

Series:

-

Transistor Type:

NPN

Voltage - Collector Emitter Breakdown (Max):

65 V

Current - Collector Cutoff (Max):

1mA

Power - Max:

265 mW

Operating Temperature:

-55°C ~ 150°C (TJ)

Package / Case:

SOT-723

Base Product Number:

BC846

Manufacturer:

Micro Commercial Co

Product Status:

Active

Current - Collector (Ic) (Max):

100 mA

Vce Saturation (Max) @ Ib, Ic:

600mV @ 5mA, 100mA

DC Current Gain (hFE) (Min) @ Ic, Vce:

200 @ 2mA, 5V

Frequency - Transition:

100MHz

Mounting Type:

Surface Mount

Supplier Device Package:

SOT-723

Environmental & Export classification

REACH Status:

REACH Unaffected

HTSUS:

8541.21.0075

ECCN:

EAR99

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

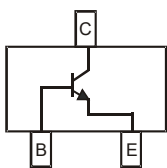
- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Maximum Thermal Resistance: 472°C/W Junction to Ambient^(Note 2)

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

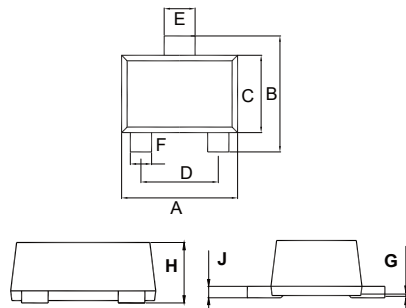


Marking:

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

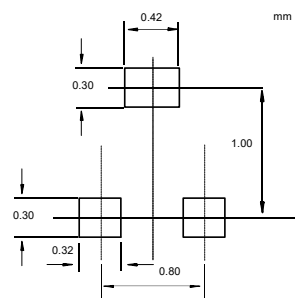
NPN Plastic-Encapsulate Transistors

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 BC846AM3-BC846BM3 BC847AM3-BC847CM3 BC848AM3-BC848CM3	$V_{(BR)CBO}$	80 50 30			V	$I_C=10\mu\text{A}, I_E=0$
Collector-Emitter Breakdown Voltage BC846AM3-BC846BM3 BC847AM3-BC847CM3 BC848AM3-BC848CM3	$V_{(BR)CEO}$	65 45 30			V	$I_C=10\text{mA}, I_B=0$
Emitter-Base Breakdown Voltage BC846AM3-BC846BM3 BC847AM3-BC847CM3 BC848AM3-BC848CM3	$V_{(BR)EBO}$	6 6 5			V	$I_E=10\mu\text{A}, I_C=0$
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 BC846AM3/BC847AM3/BC848AM3 BC846BM3/BC847BM3/BC848BM3 BC847CM3/BC848CM3	$h_{FE(1)}$		110 250 480			$V_{CE}=5\text{V}, I_C=10\mu\text{A}$
DC Current Gain BC846AM3/BC847AM3/BC848AM3 BC846BM3/BC847BM3/BC848BM3 BC847CM3/BC848CM3	$h_{FE(2)}$	110 200 420		220 450 800		$V_{CE}=5\text{V}, I_C=2\text{mA}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		0.09 0.2	0.3 0.6	V	$I_C=10\text{mA}, I_B=0.5\text{mA}$ $I_C=100\text{mA}, I_B=5\text{mA}$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		0.7 0.9	0.9 1.1	V	$I_C=10\text{mA}, I_B=0.5\text{mA}$ $I_C=100\text{mA}, I_B=5\text{mA}$
Base-Emitter On Voltage	$V_{BE(on)}$	0.52	0.66	0.7 0.77	V	$V_{CE}=5\text{V}, I_C=2\text{mA}$ $V_{CE}=5\text{V}, I_C=10\text{mA}$
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

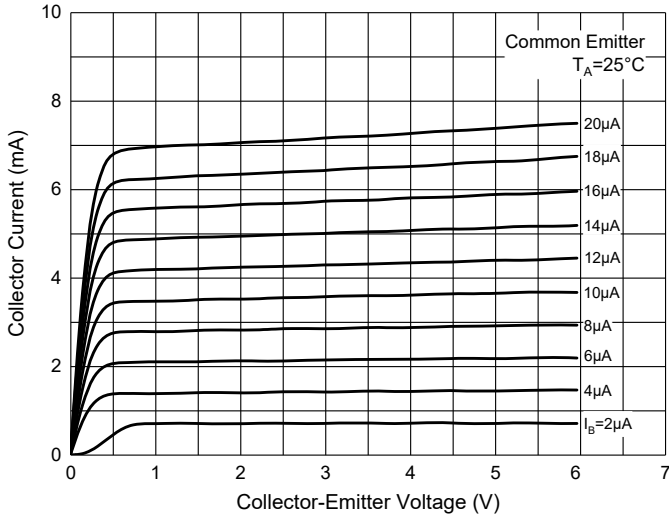


Fig. 2 - DC Current Gain Characteristics

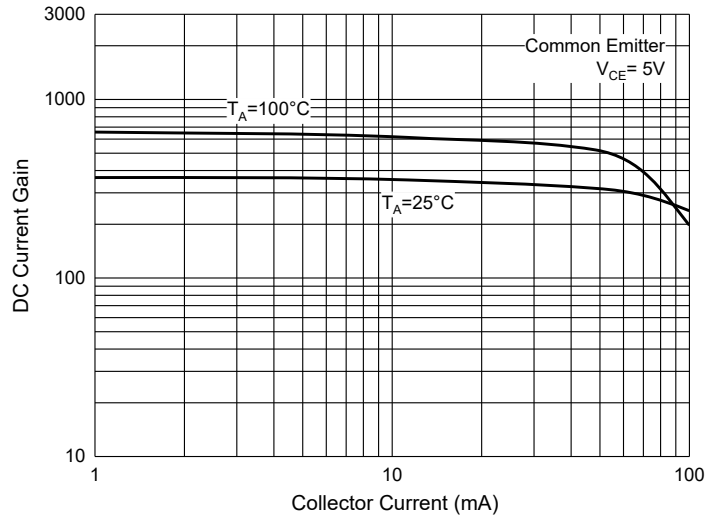


Fig. 3 - Base-Emitter Saturation Voltage Characteristics

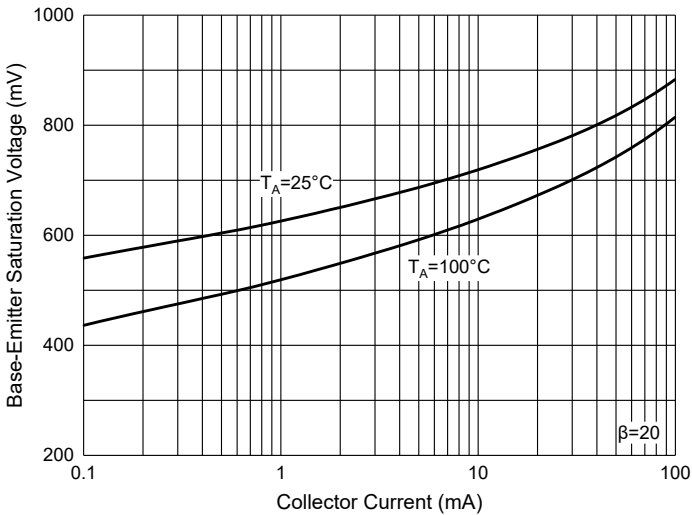


Fig. 4 - Collector-Emitter Saturation Voltage Characteristics

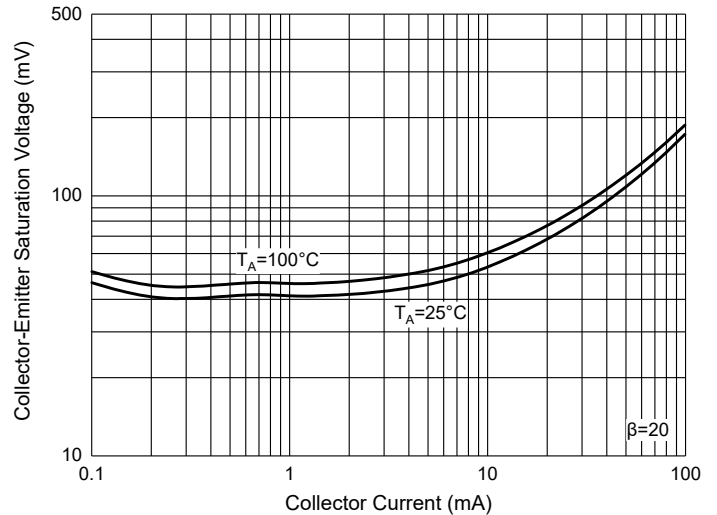


Fig. 5 - Base-Emitter Voltage Characteristics

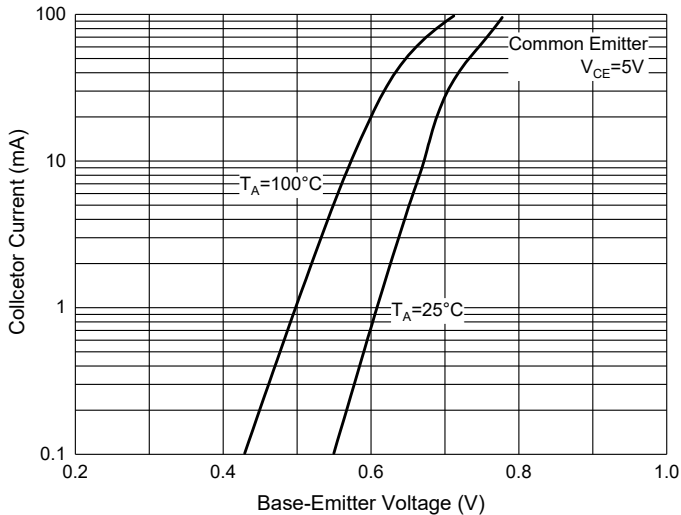
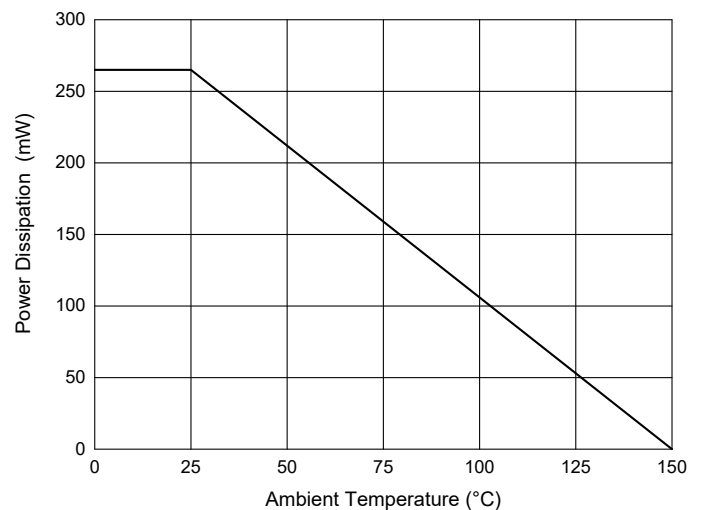


Fig. 6 - Power Derating Curve





Ordering Information

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

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