

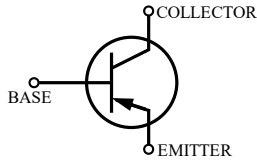


# AMMBT3906H

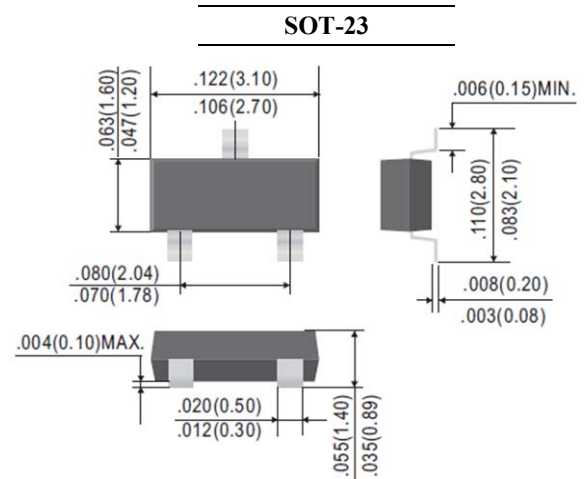
## PNP TRANSISTOR

### FEATURES

- AEC-Q101 qualified
- Suffix "H" indicates Halogen-free parts, ex. AMMBT3906H



B	Base
C	Collector
E	Emitter



Dimensions in inches and (millimeter)

### Maximum Ratings ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector Base Voltage	$V_{CBO}$	-40	V
Collector Emitter Voltage	$V_{CEO}$	-40	V
Emitter Base Voltage	$V_{EBO}$	-6	V
Collector Current	$I_C$	-200	mA
Power Dissipation	$P_D$	350	mW
Thermal Resistance from Junction to Ambient (Note 1)	$R_{\theta JA}$	357	$^\circ\text{C}/\text{W}$
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	- 55 to + 150	$^\circ\text{C}$

Note :

1. Device mounted on FR-4 substrate PC board, with minimum recommended pad layout



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### *Electrical Characteristics*( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise specified)

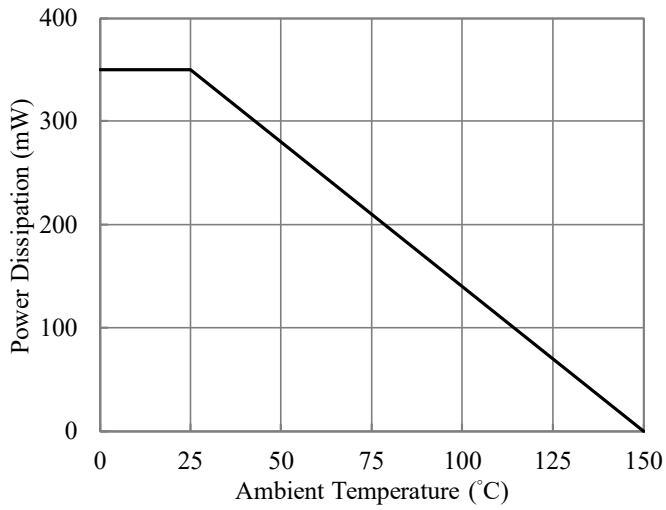
Parameter	Conditions	Symbol	Min.	Max.	Unit
DC Current Gain	$I_C = -0.1\text{mA}$ , $V_{CE} = -1\text{V}$	$h_{FE}$	60	-	-
	$I_C = -1\text{mA}$ , $V_{CE} = -1\text{V}$		80	-	
	$I_C = -10\text{mA}$ , $V_{CE} = -1\text{V}$		100	300	
	$I_C = -50\text{mA}$ , $V_{CE} = -1\text{V}$		60	-	
	$I_C = -100\text{mA}$ , $V_{CE} = -1\text{V}$		30	-	
Collector Base Cutoff Current	$V_{CB} = -30\text{V}$	$I_{CBO}$	-	-50	nA
Emitter Base Cutoff Current	$V_{EB} = -6\text{V}$	$I_{EBO}$	-	-50	nA
Collector Base Breakdown Voltage	$I_C = -10\mu\text{A}$	$V_{(BR)CBO}$	-40	-	V
Collector Emitter Breakdown Voltage	$I_C = -1\text{mA}$	$V_{(BR)CEO}$	-40	-	V
Emitter Base Breakdown Voltage	$I_E = -10\mu\text{A}$	$V_{(BR)EBO}$	-6	-	V
Collector Emitter Saturation Voltage	$I_C = -10\text{mA}$ , $I_B = -1\text{mA}$	$V_{CE(sat)}$	-	-0.25	V
	$I_C = -50\text{mA}$ , $I_B = -5\text{mA}$		-	-0.40	
Base Emitter Saturation Voltage	$I_C = -10\text{mA}$ , $I_B = -1\text{mA}$	$V_{BE(sat)}$	-0.65	-0.85	V
	$I_C = -50\text{mA}$ , $I_B = -5\text{mA}$		-	-0.95	
Transition Frequency	$I_C = -10\text{mA}$ , $V_{CE} = -20\text{V}$ , $f = 100\text{MHz}$	$f_T$	250	-	MHz
Output Capacitance	$V_{CB} = -5\text{V}$ , $f = 1\text{MHz}$	$C_{ob}$	-	4.5	pF
Delay Time	$V_{CC} = -3\text{V}$ , $V_{BE} = -0.5\text{V}$ , $I_C = -10\text{mA}$ , $I_{B1} = -1\text{mA}$	$t_d$	-	35	ns
Rise Time		$t_r$	-	35	
Storage Time		$t_s$	-	225	
Fall Time		$t_f$	-	75	



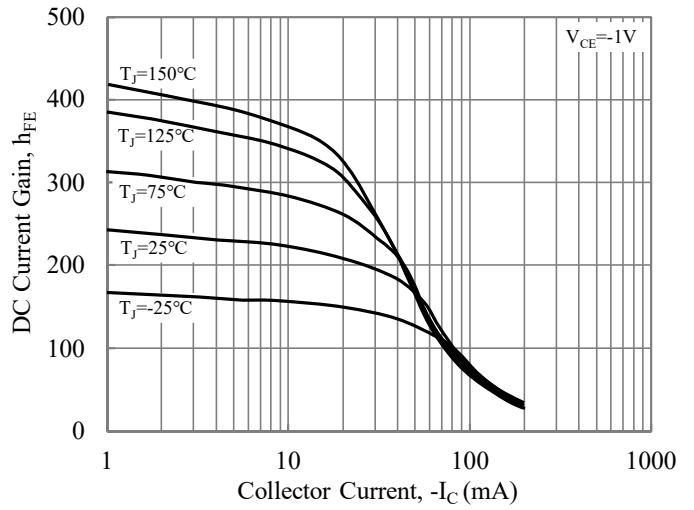
# AMMBT3906H

## PNP TRANSISTOR

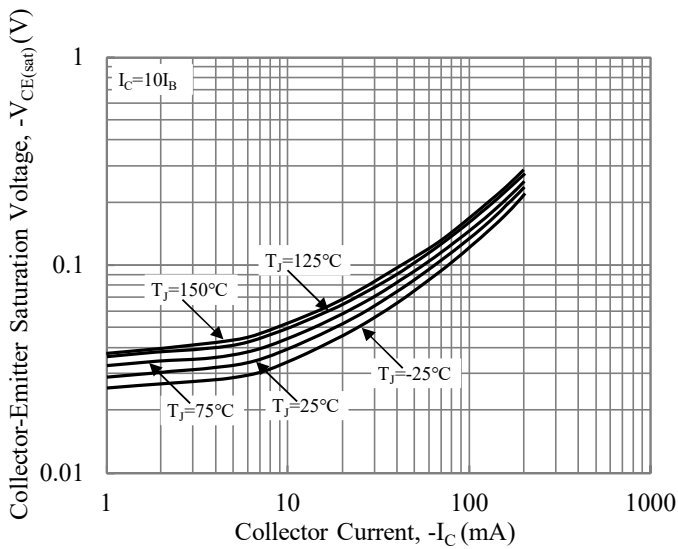
### RATINGS AND CHARACTERISTIC CURVES



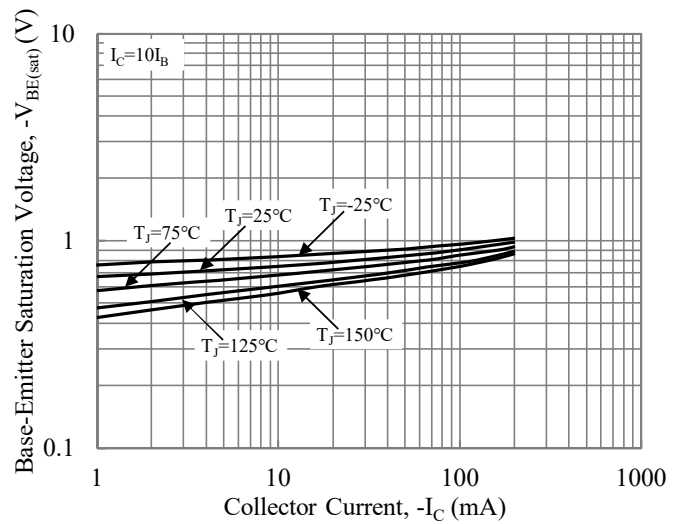
**Fig. 1 Power Derating Curves**



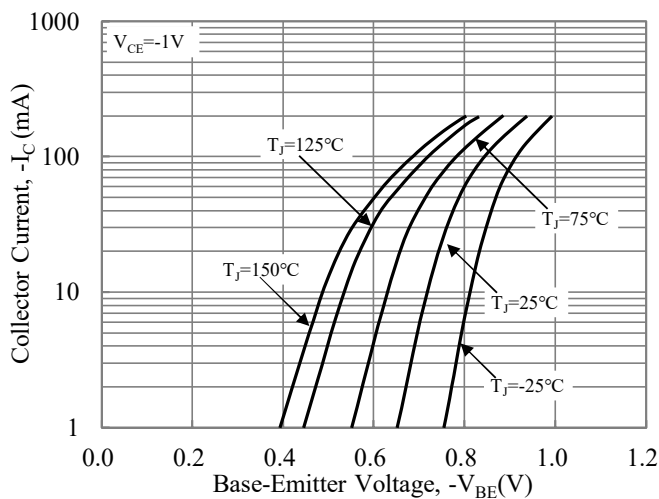
**Fig. 2 Current Gain vs. Collector Current**



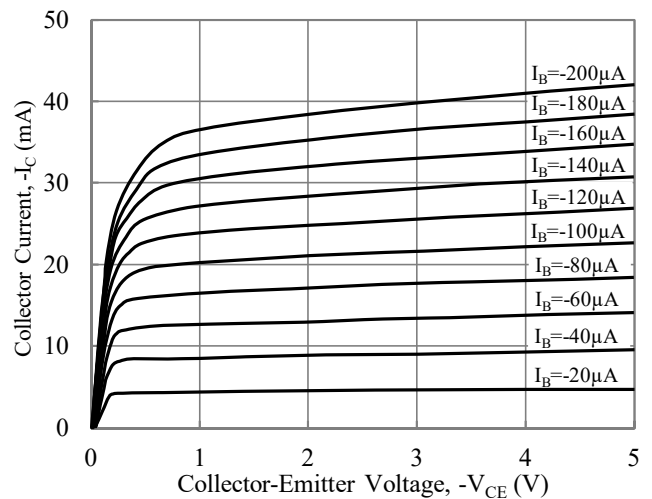
**Fig. 3 Collector-Emitter Saturation Voltage vs. Collector Current**



**Fig. 4 Base-Emitter Saturation Voltage vs. Collector Current**



**Fig. 5 Base-Emitter Voltage vs. Collector Current**

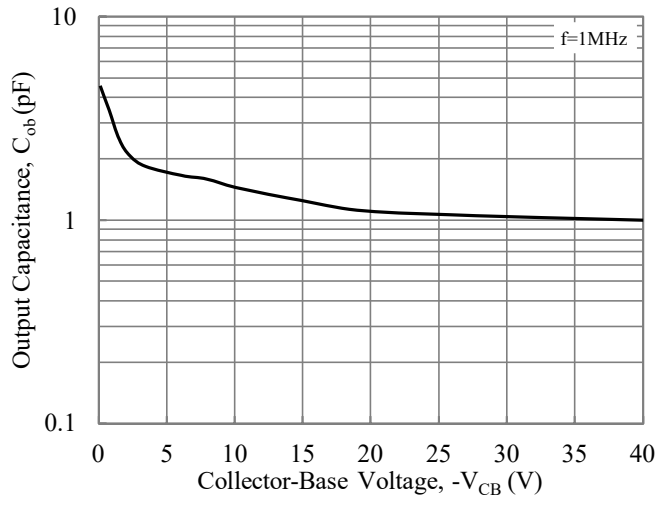


**Fig. 6 Output Characteristics**



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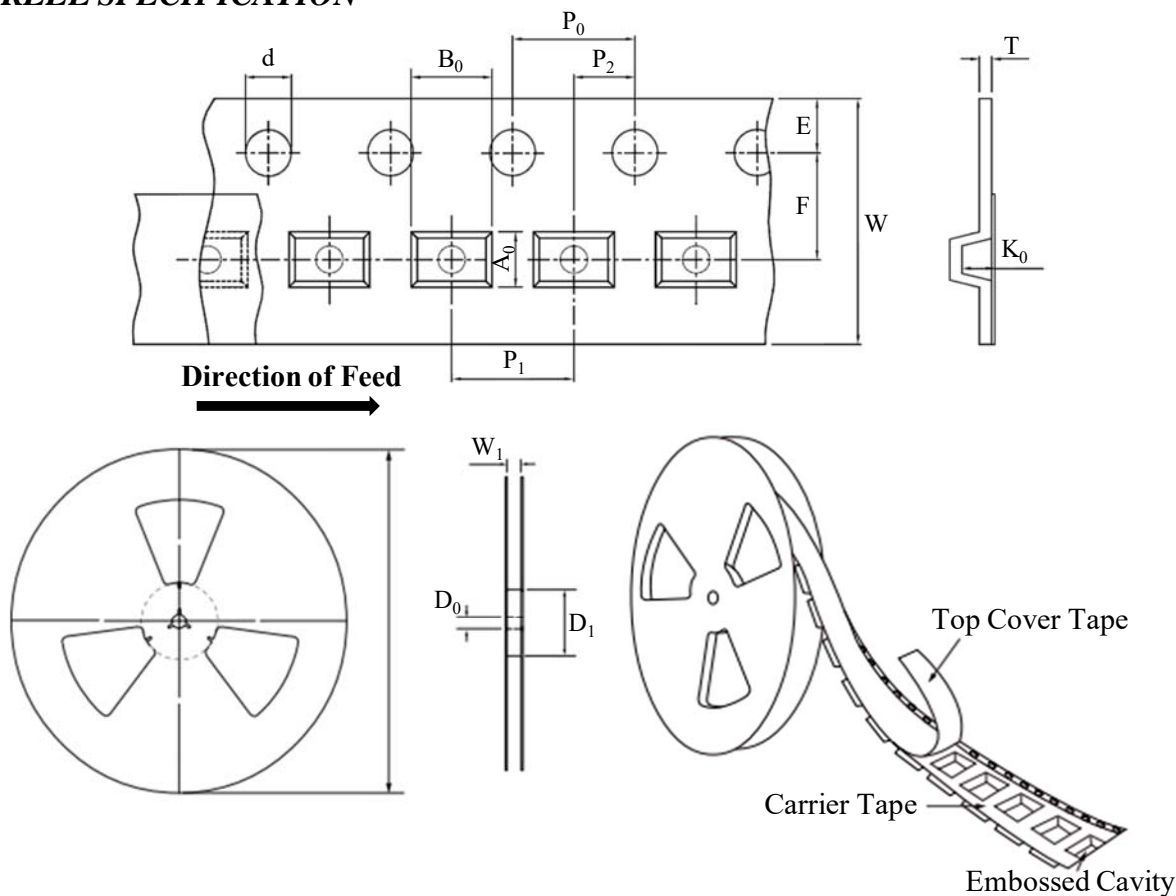
**Fig. 7 Output Capacitance**



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## PNP TRANSISTOR

### TAPE & REEL SPECIFICATION



Item	Symbol	SOT-23
Carrier width	A <sub>0</sub>	3.30 ± 0.10
Carrier length	B <sub>0</sub>	3.00 ± 0.10
Carrier depth	K <sub>0</sub>	1.70 ± 0.10
Sprocket hole	d	1.50 ± 0.10
Reel outside diameter	D	178.00 ± 2.00
Feed hole width	D <sub>0</sub>	13.00 ± 0.50
Reel inner diameter	D <sub>1</sub>	MIN. 50.00
Sprocket hole position	E	1.75 ± 0.10
Punch hole position	F	3.50 ± 0.10
Sprocket hole pitch	P <sub>0</sub>	4.00 ± 0.10
Punch hole pitch	P <sub>1</sub>	4.00 ± 0.10
Embossment center	P <sub>2</sub>	2.00 ± 0.10
Overall tape thickness	T	0.20 ± 0.05
Tape width	W	8.00 ± 0.20
Reel width	W <sub>1</sub>	MAX. 14.50

### ORDER INFORMATION

Package	Reel Size	Quantity
SOT-23	7"	3,000

### MARKING CODE

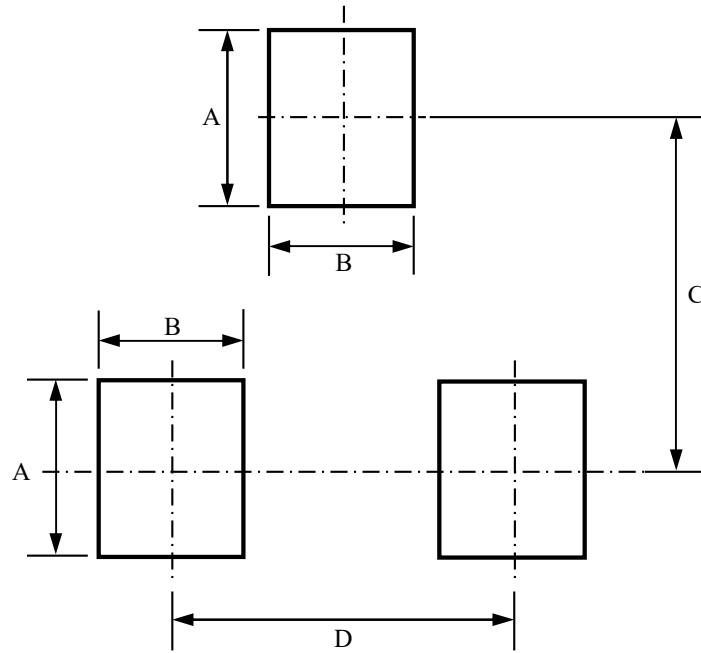
Part Number	Marking Code
AMMBT3906H	3E



# AMMBT3906H

## PNP TRANSISTOR

### SUGGESTED SOLDER PAD LAYOUT



Unit :mm

PACKAGE	A	B	C	D
SOT-23	1.00	0.80	2.00	1.90