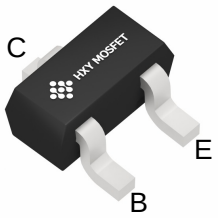
HMMBT3906WT1G

PNP Plastic-Encapsulate Transistors

Features

- Collector Current: I_C= -0.2A
- Power Dissipation of 500mW



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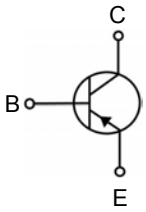

Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
HMMBT3906WT1G	SOT323	3N	3000

Maximum Ratings (Ta=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-40	V
V_{CEO}	Collector-Emitter Voltage	-32	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current-Continuous	-0.2	A
P_C	Collector Power Dissipation	200	mW
T_j	Junction Temperature	150	°C
T_{stg}	Storage Temperature	-55-150	°C

Electrical Characteristics(Ta=25°C unless otherwise specified)

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at $-V_{CE}$ = 1 V, $-I_C$ = 0.1 mA at $-V_{CE}$ = 1 V, $-I_C$ = 1 mA at $-V_{CE}$ = 1 V, $-I_C$ = 10 mA at $-V_{CE}$ = 1 V, $-I_C$ = 50 mA at $-V_{CE}$ = 1 V, $-I_C$ = 100 mA	 h_{FE} h_{FE} h_{FE} h_{FE} h_{FE}	 60 80 100 60 30	 - - 300 - -	 - - - - -
Collector Emitter Cutoff Current at $-V_{CE}$ = 30 V	$-I_{CES}$	-	50	nA
Emitter Base Cutoff Current at $-V_{EB}$ = 3 V	$-I_{EBO}$	-	50	nA
Collector Base Breakdown Voltage at $-I_C$ = 10 µA	$-V_{(BR)CBO}$	40	-	V
Collector Emitter Breakdown Voltage at $-I_C$ = 1 mA	$-V_{(BR)CEO}$	40	-	V
Emitter Base Breakdown Voltage at $-I_E$ = 10 µA	$-V_{(BR)EBO}$	5	-	V
Collector Emitter Saturation Voltage at $-I_C$ = 10 mA, $-I_B$ = 1 mA at $-I_C$ = 50 mA, $-I_B$ = 5 mA	$-V_{CE(sat)}$	- -	0.25 0.4	V
Base Emitter Saturation Voltage at $-I_C$ = 10 mA, $-I_B$ = 1 mA at $-I_C$ = 50 mA, $-I_B$ = 5 mA	$-V_{BE(sat)}$	0.65 -	0.85 0.95	V
Transition Frequency at $-V_{CE}$ = 20 V, I_E = 10 mA, f = 100 MHz	f_T	250	-	MHz
Collector Output Capacitance at $-V_{CB}$ = 10 V, f = 100 KHz	C_{ob}	-	4.5	pF
Delay Time at $-V_{CC}$ = 3 V, $-V_{BE(OFF)}$ = 0.5 V, $-I_C$ = 10 mA, $-I_{B1}$ = 1 mA	t_d	-	35	ns
Rise Time at $-V_{CC}$ = 3 V, $-V_{BE(OFF)}$ = 0.5 V, $-I_C$ = 10 mA, $-I_{B1}$ = 1 mA	t_r	-	35	ns
Storage Time at $-V_{CC}$ = 3 V, $-I_C$ = 10 mA, I_{B1} = $-I_{B2}$ = -1 mA	t_{stg}	-	225	ns
Fall Time at $-V_{CC}$ = 3 V, $-I_C$ = 10 mA, I_{B1} = $-I_{B2}$ = -1 mA	t_f	-	75	ns

Typical Characteristics

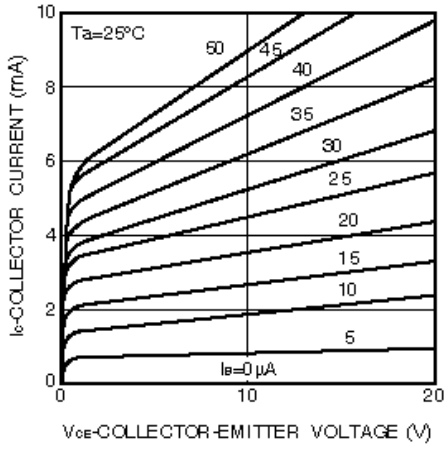

Fig.1 Grounded emitter output characteristics

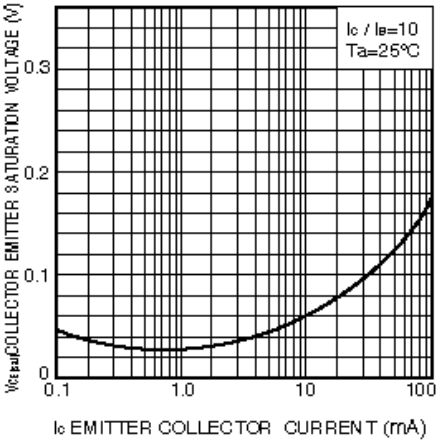

Fig.2 Collector-emitter saturation voltage vs. collector current

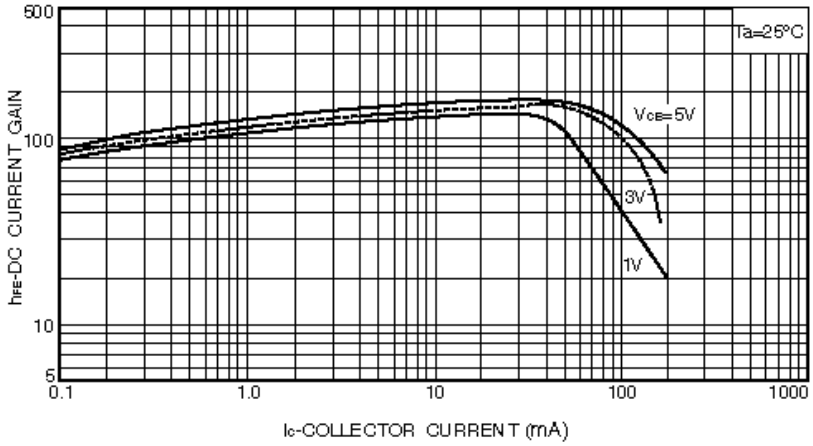

Fig.3 DC current gain vs.collector current (I)

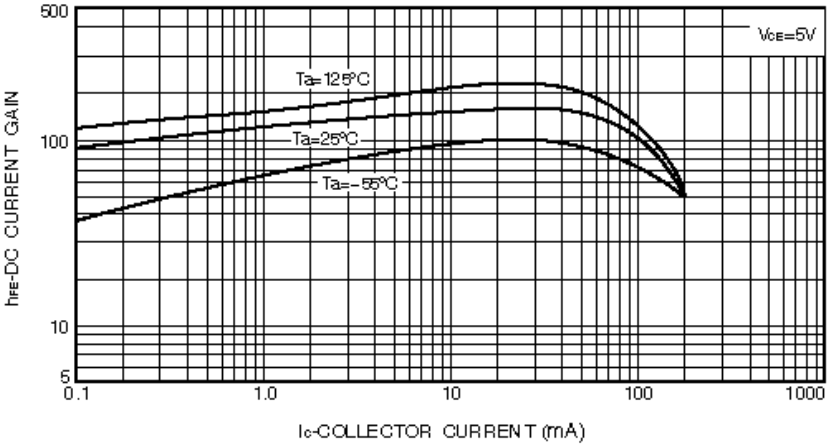

Fig.4 DC current gain vs. collector current (II)

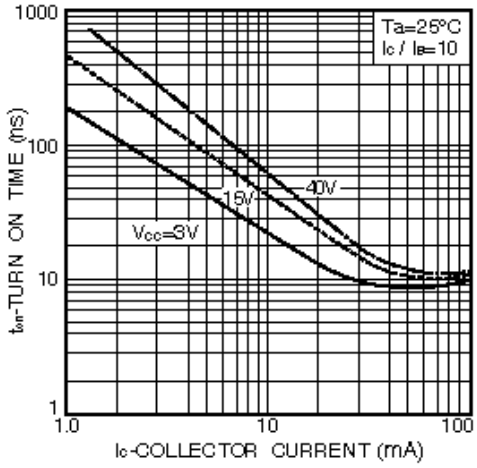

Fig.8 Turn-on time vs. collector current

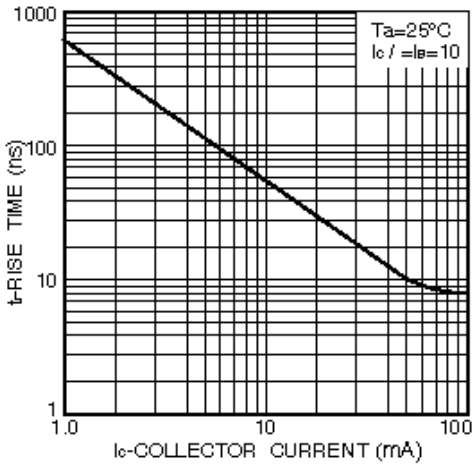

Fig.9 Rise time vs. collector current

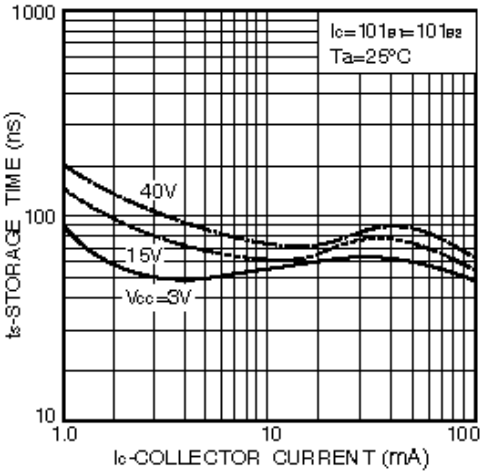

Fig.10 Storage time vs. collector current

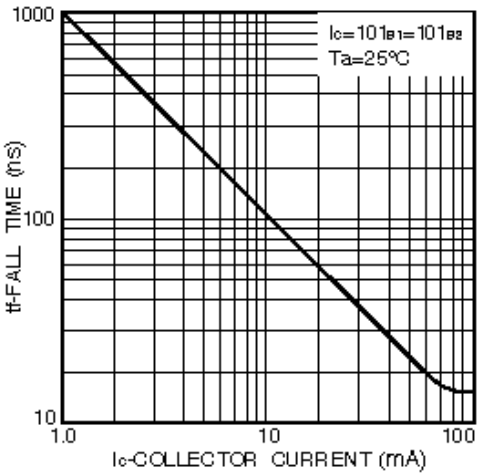

Fig.11 Fall time vs. collector current

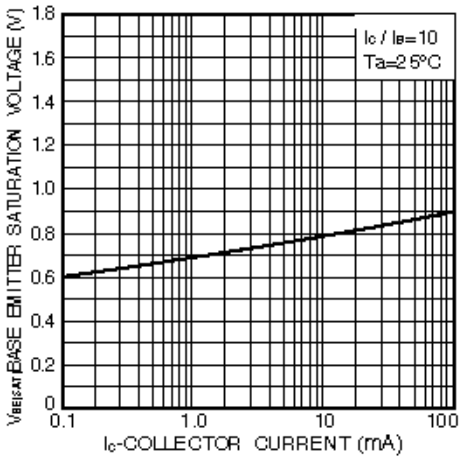

Fig.6 Base-emitter saturation voltage vs. collector current

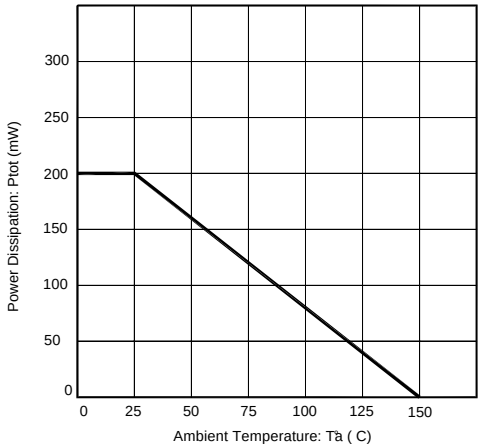

Fig.10 Power Dissipation vs Ambient Temperature

Package Dimensions

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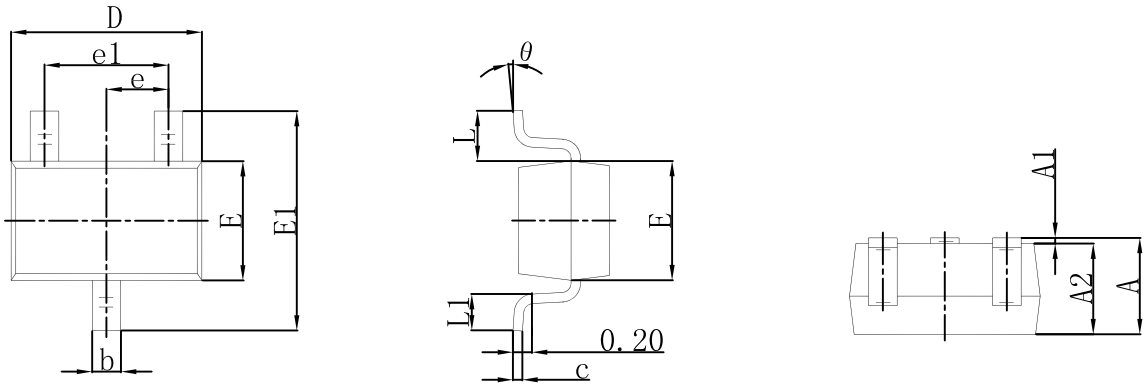

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
K	0°	8°	0°	8°

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