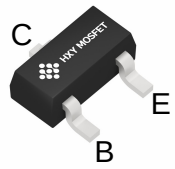
MMBT2907ALT1G

PNP Plastic-Encapsulate Transistors

Features

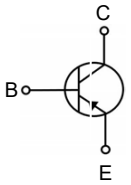
- Collector Current: I_C=0.6A
- Power Dissipation of 250mW



SOT-23

Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
MMBT2907ALT1G	SOT-23	2F	3000



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

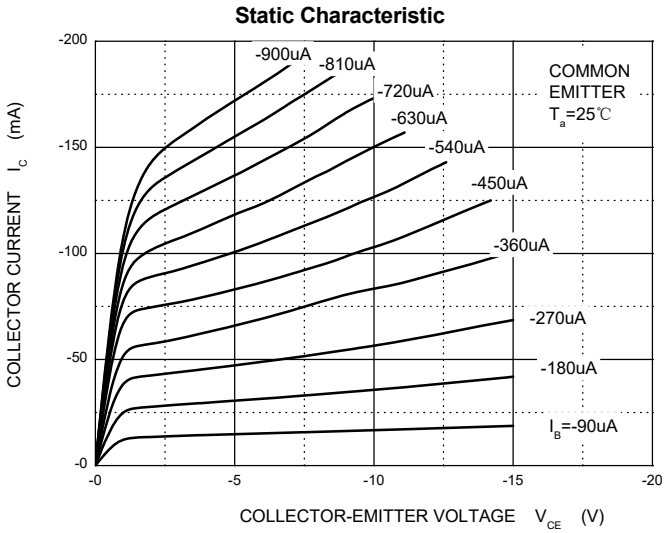
Parameter	Symbol	Limit	Unit
Collector-Base Voltage	V_{CBO}	-60	V
Collector-Emitter Voltage	V_{CEO}	-40	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-600	mA
Collector Power Dissipation	P_C	250	mW
Thermal Resistance From Junction To Ambient	$R_{\Theta JA}$	500	°C/W
Junction Temperature	T_j	150	°C
Storage Temperature	T_{stg}	-55～+150	°C

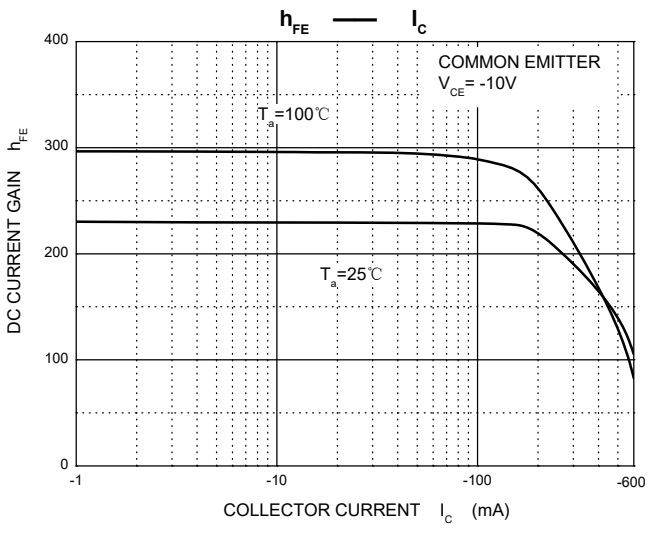
Electrical Characteristics (T_a=25°C unless otherwise specified)

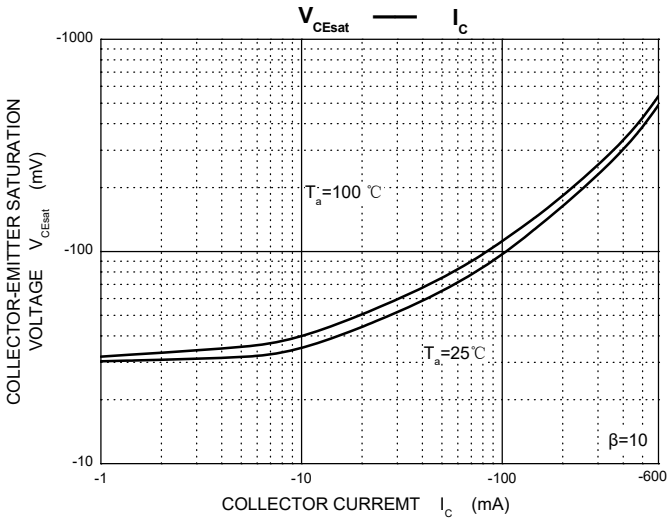
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=-10μA,I_E=0	-60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$*	I_C=-10mA,I_B=0	-40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=-10μA,I_C=0	-5			V
Collector cut-off current	I_{CBO}	V_{CB}=-50V,I_E=0			-20	nA
Base cut-off current	I_{EBO}	V_{EB}=-3V, I_C=0			-10	nA
Collector cut-off current	I_{CEX}	V_{CE}=-30 V, $V_{BE(off)}$=-0.5V			-50	nA
DC current gain	$h_{FE(1)}$*	V_{CE}=-10V,I_C=-150mA	100		300	
	$h_{FE(2)}$*	V_{CE}=-10V,I_C=-0.1mA	52			
	$h_{FE(3)}$*	V_{CE}=-10V,I_C=-500mA	32			
Collector-emitter saturation voltage	$V_{CE(sat)}$*	I_C=-150mA,I_B=-15mA			-0.4	V
	$V_{CE(sat)}$*	I_C=-500mA,I_B=-50mA			-0.67	V
Base-emitter saturation voltage	$V_{BE(sat)}$*	I_C=-150mA,I_B=-15mA			-1	V
	$V_{BE(sat)}$*	I_C=-500mA,I_B=-50mA			-1.2	V
Transition frequency	f_T	V_{CE}=-20V,I_C=-50mA,f=100MHz	200			MHz
Delay time	t_d	V_{CE}=-30V,I_C=-150mA,$_{B1}$=-15mA			10	ns
Rise time	t_r				25	ns
Storage time	t_S	V_{CE}=-6V,I_C=-150mA, I_{B1}=- I_{B2}=- 15mA			225	ns
Fall time	t_f				60	ns

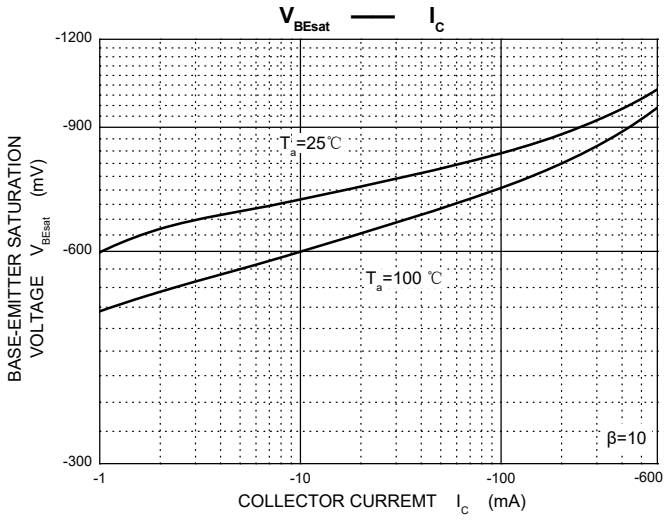
*Pulse test: t_p≤300μs, δ≤0.02.

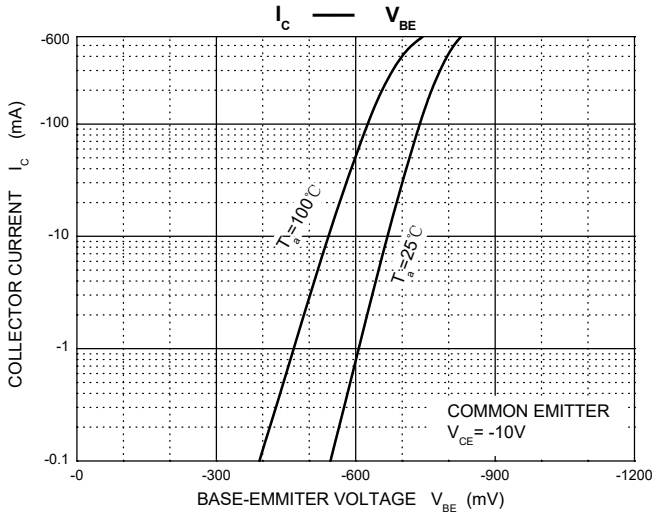
Typical Characteristics

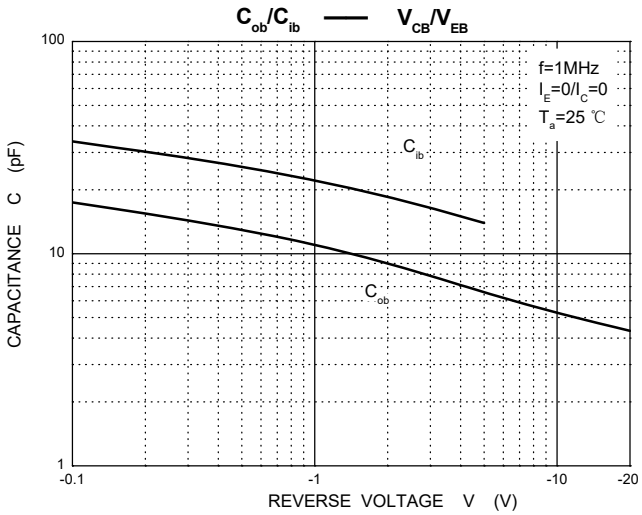


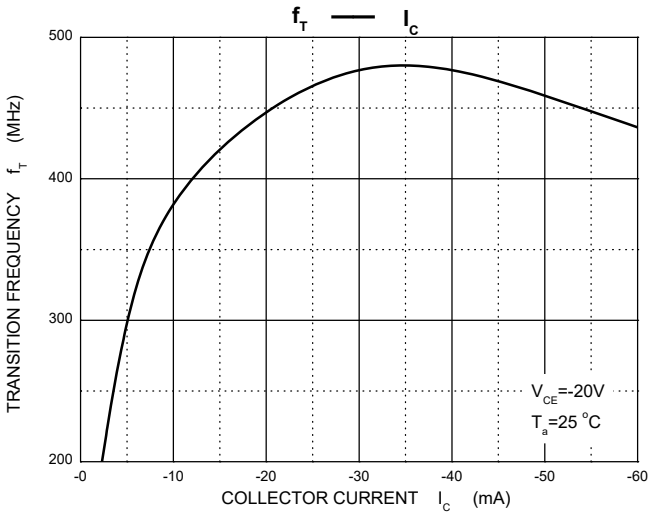


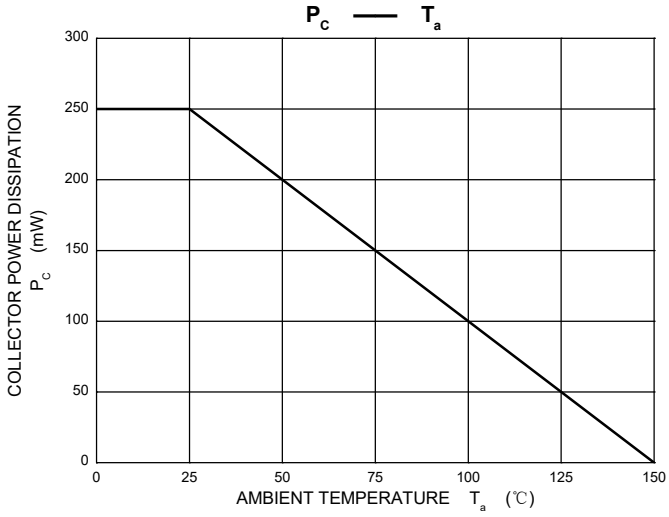

V_{CEsat} — I_C
COLLECTOR-EMITTER SATURATION VOLTAGE V_{CEsat} (mV)
-1000
-100
-10
-1
-10
-100
-600
T_a=100 ℃
T_a=25℃
β=10
COLLECTOR CURREMT I_C (mA)


V_{BEsat} — I_C
BASE-EMITTER SATURATION VOLTAGE V_{BEsat} (mV)
-1200
-900
-600
-300
-1
-10
-100
-600
T_a=25℃
T_a=100 ℃
β=10
COLLECTOR CURREMT I_C (mA)

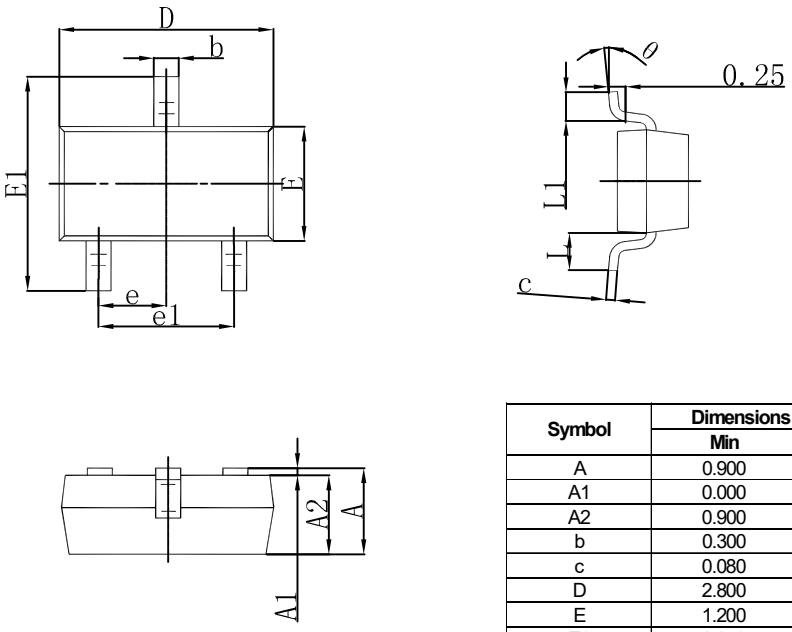

I_C — V_{BE}
COLLECTOR CURRENT I_C (mA)
-600
-100
-10
-1
-0.1
-0
-300
-600
-900
-1200
T_a=100℃
T_a=25℃
COMMON EMITTER
V_{CE}= -10V
BASE-EMMITER VOLTAGE V_{BE} (mV)


C_{ob}/C_{ib} — V_{CB}/V_{EB}
CAPACITANCE C (pF)
100
10
1
-0.1
-1
-10
-20
f=1MHz
I_E=0/I_C=0
T_a=25 ℃
C_{ib}
C_{ob}
REVERSE VOLTAGE V (V)


f_T — I_C
TRANSITION FREQUENCY f_T (MHz)
500
400
300
200
-0
-10
-20
-30
-40
-50
-60
V_{CE}=-20V
T_a=25 ℃
COLLECTOR CURRENT I_C (mA)

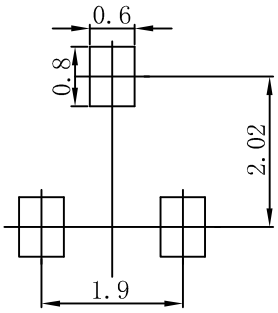

P_C — T_a
COLLECTOR POWER DISSIPATION P_C (mW)
300
250
200
150
100
50
0
0
25
50
75
100
125
150
AMBIENT TEMPERATURE T_a (℃)

SOT-23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

SOT-23 Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

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