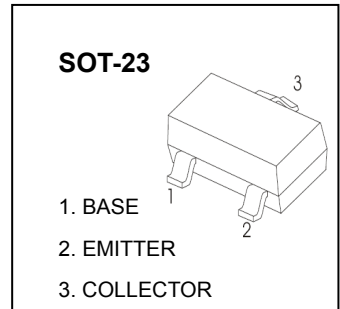


TRANSISTOR (PNP)

FEATURES

- Epitaxial planar die construction
- Complementary NPN Type available(MMBT2222A)
- Exsemi technology
- AEC-Q101 Qualified

Marking: 2F

MAXIMUM RATINGS ($T_a=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CB0}	Collector-Base Voltage	-60	V
V_{CE0}	Collector-Emitter Voltage	-60	V
V_{EB0}	Emitter-Base Voltage	-5	V
I_C	Collector Current -Continuous	-600	mA
P_D	Total Device Dissipation	250	mW
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	500	$^\circ\text{C}/\text{W}$
T_J	Junction Temperature	150	
T_{stg}	Storage Temperature	-55 to +150	

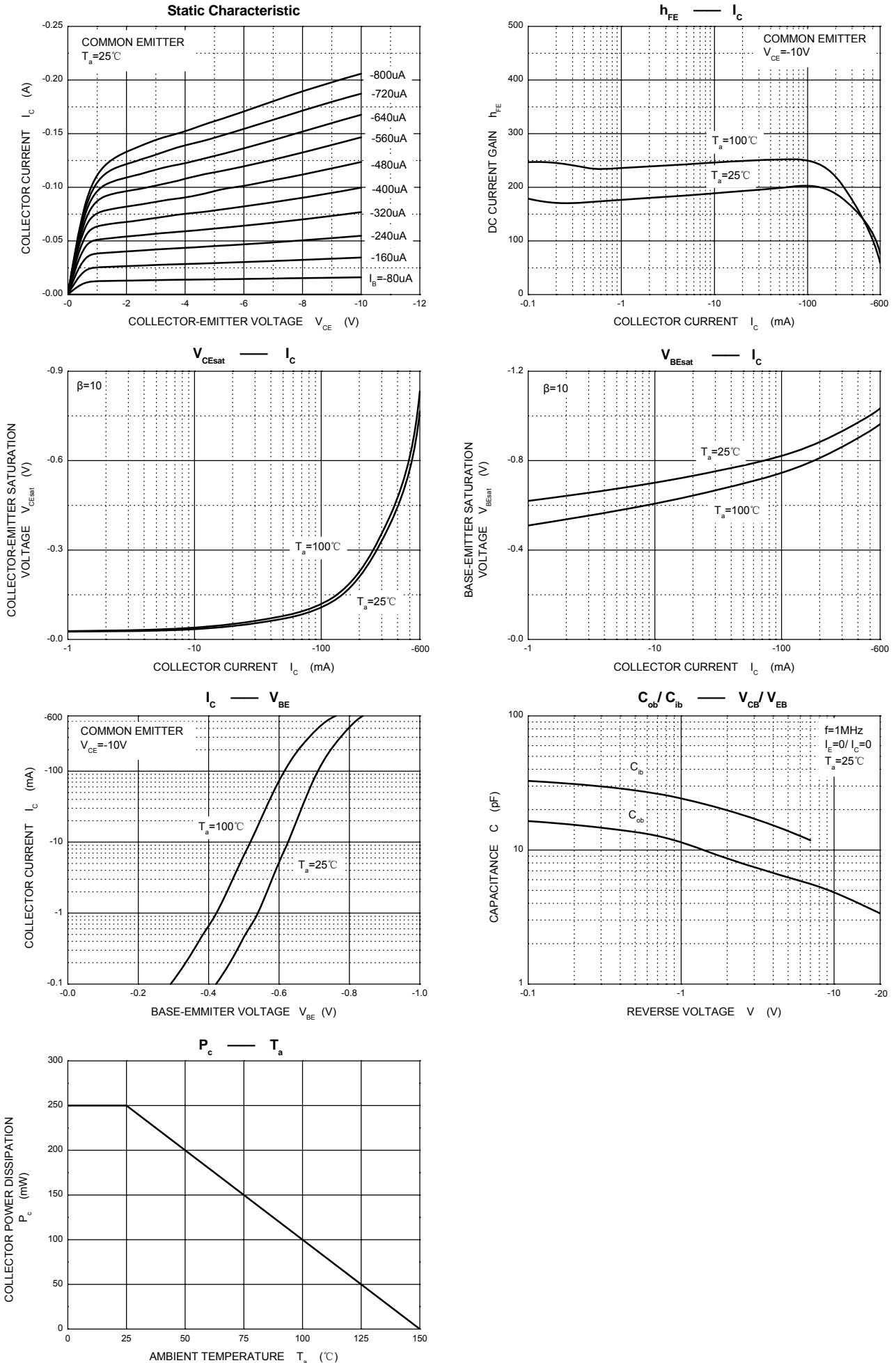
ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CB0}$	$I_C=-10\mu\text{A}, I_E=0$	-60			V
Collector-emitter breakdown voltage	$V_{(BR)CE0^*}$	$I_C=-10\text{mA}, I_B=0$	-60			V
Emitter-base breakdown voltage	$V_{(BR)EB0}$	$I_E=-10\mu\text{A}, I_C=0$	-5			V
Collector cut-off current	I_{CB0}	$V_{CB}=-50\text{V}, I_E=0$			-20	nA
Base cut-off current	I_{EB0}	$V_{EB}=-3\text{V}, I_C=0$			-10	nA
Collector cut-off current	I_{CEX}	$V_{CE}=-30\text{V}, V_{BE(off)}=-0.5\text{V}$			-50	nA
DC current gain	$h_{FE(1)}$	$V_{CE}=-10\text{V}, I_C=-150\text{mA}$	100		300	
	$h_{FE(2)}$	$V_{CE}=-10\text{V}, I_C=-0.1\text{mA}$	75			
	$h_{FE(3)}$	$V_{CE}=-10\text{V}, I_C=-1\text{mA}$	100			
	$h_{FE(4)}$	$V_{CE}=-10\text{V}, I_C=-10\text{mA}$	100			
	$h_{FE(5)}$	$V_{CE}=-10\text{V}, I_C=-500\text{mA}$	50			
Collector-emitter saturation voltage	$V_{CE(sat)^*}$	$I_C=-150\text{mA}, I_B=-15\text{mA}$			-0.4	V
	$V_{CE(sat)^*}$	$I_C=-500\text{mA}, I_B=-50\text{mA}$			-1.6	V
Base-emitter saturation voltage	$V_{BE(sat)^*}$	$I_C=-150\text{mA}, I_B=-15\text{mA}$			-1.3	V
	$V_{BE(sat)^*}$	$I_C=-500\text{mA}, I_B=-50\text{mA}$			-2.6	V
Transition frequency	f_T	$V_{CE}=-20\text{V}, I_C=-50\text{mA}, f=100\text{MHz}$	200			MHz
Delay time	t_d	$V_{CE}=-30\text{V}, I_C=-150\text{mA}, I_{B1}=-15\text{mA}$			10	ns
Rise time	t_r				25	ns
Storage time	t_s	$V_{CE}=-6\text{V}, I_C=-150\text{mA},$			225	ns
Fall time	t_f	$I_{B1}=-I_{B2}=-15\text{mA}$			60	ns

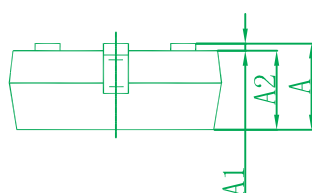
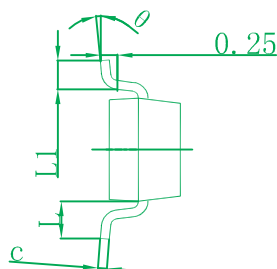
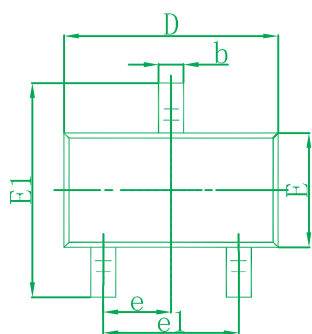
*Pulse test: $t_p \leq 300\mu\text{s}$, $\delta \leq 0.02$.CLASSIFICATION OF $h_{FE(1)}$

RANGE	100 - 300

Typical Characteristics

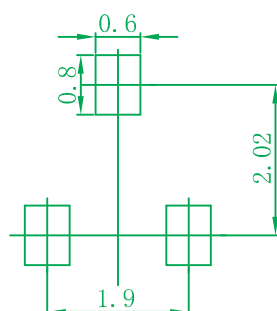


SOT-23 Package Information



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	1.150	0.035	0.045
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.050	0.110	0.120
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: ± 0.05 mm.
 3. The pad layout is for reference purposes only.

Ordering information

Device	Package	Shipping
MMBT2907A	SOT-23	3000/Tape&Reel(7inches)