

TRANSISTOR (PNP)

FEATURES

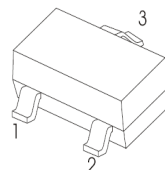
- Epitaxial planar die construction
- Complementary NPN Type available(MMBT2222)

Marking: M2B

MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V _{CBO}	Collector-Base Voltage	-60	V
V _{CEO}	Collector-Emitter Voltage	-40	V
V _{EBO}	Emitter-Base Voltage	-5	V
I _C	Collector Current -Continuous	-600	mA
P _D	Total Device Dissipation	250	mW
R _{θJA}	Thermal Resistance Junction to Ambient	500	°C/W
T _J	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55 to +150	°C

SOT-23



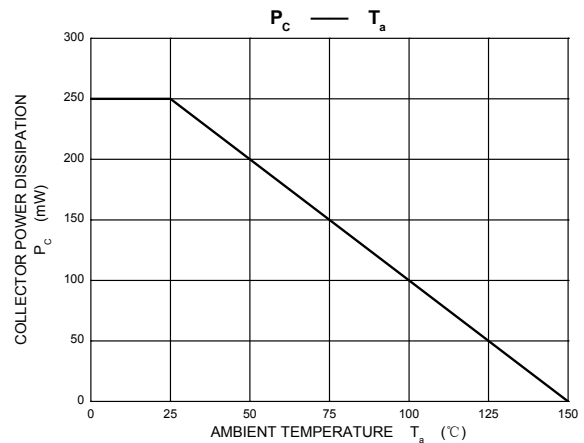
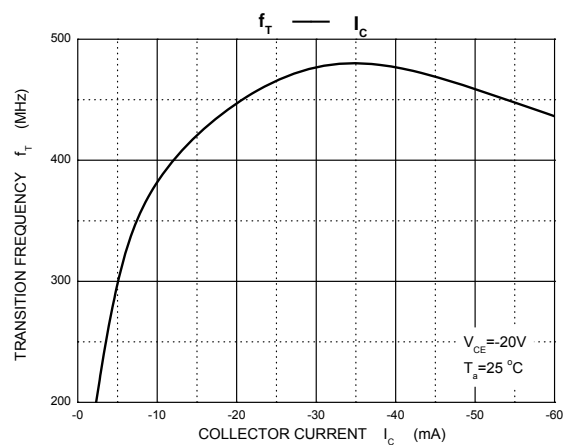
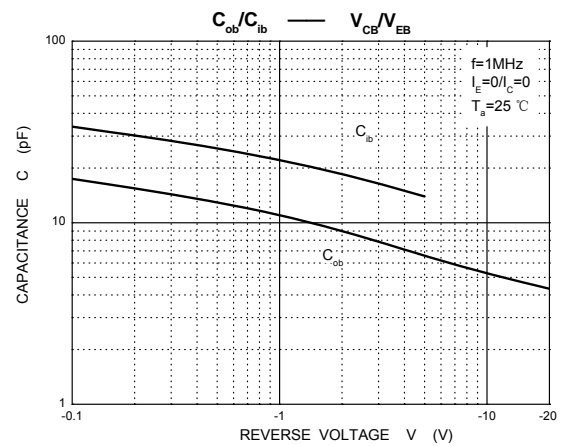
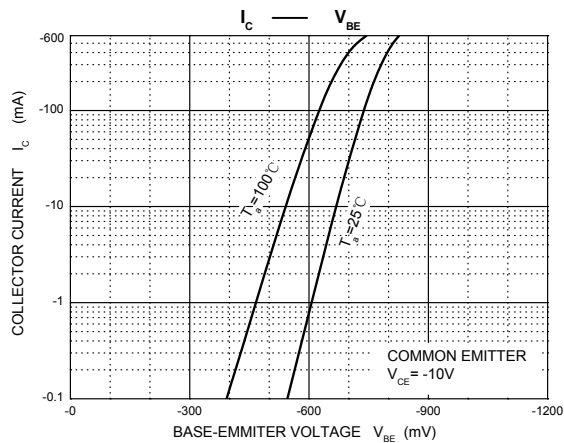
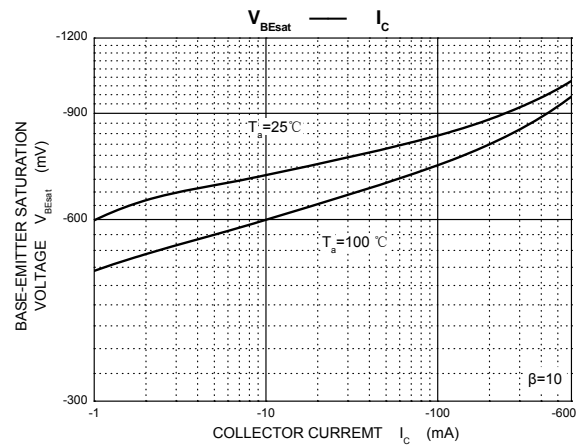
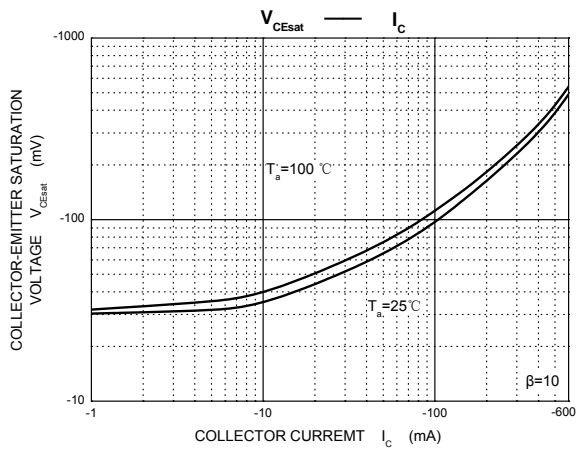
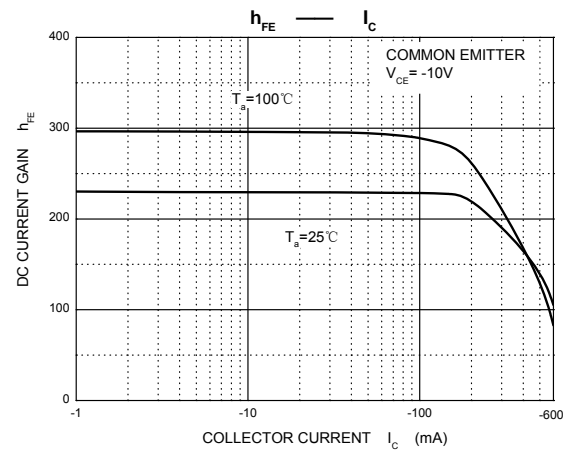
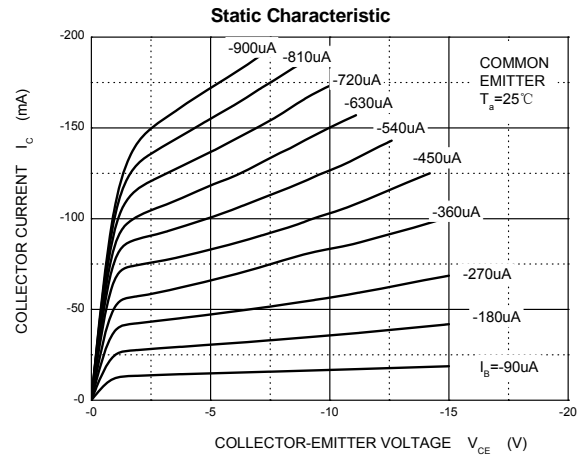
1. BASE
2. EMITTER
3. COLLECTOR

ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

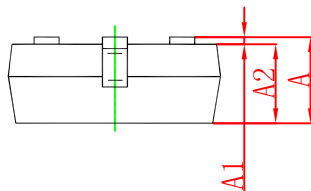
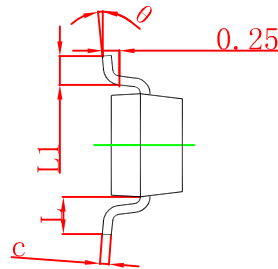
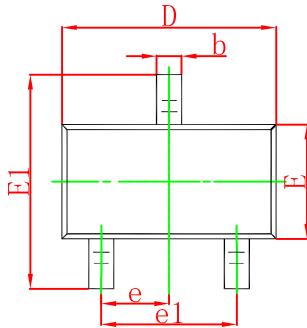
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V _{(BR)CBO}	I _C =-10μA, I _E =0	-60			V
Collector-emitter breakdown voltage	V _{(BR)CEO} *	I _C =-10mA, I _B =0	-40			V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =-10μA, I _C =0	-5			V
Collector cut-off current	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, I _{B1} =-15mA			10	ns
Rise time	t _r				25	ns
Storage time	t _s	V _{CE} =-6V, I _C =-150mA,			225	ns
Fall time	t _f	I _{B1} =- I _{B2} =- 15mA			60	ns

*Pulse test: t_p≤300μs, δ≤0.02.

Typical Characteristics

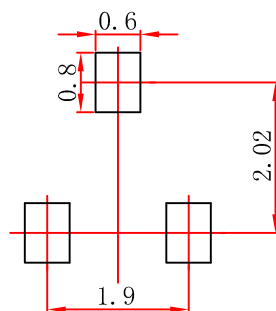


SOT-23 Package Outline Dimensions



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: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.