

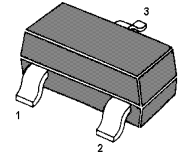
MMBT2222A TRANSISTOR (NPN)

FEATURES

Epitaxial planar die construction

Complementary PNP Type available(MMBT2907A)

SOT-23



1. BASE
2. EMITTER
3. COLLECTOR

MARKING: 1P

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

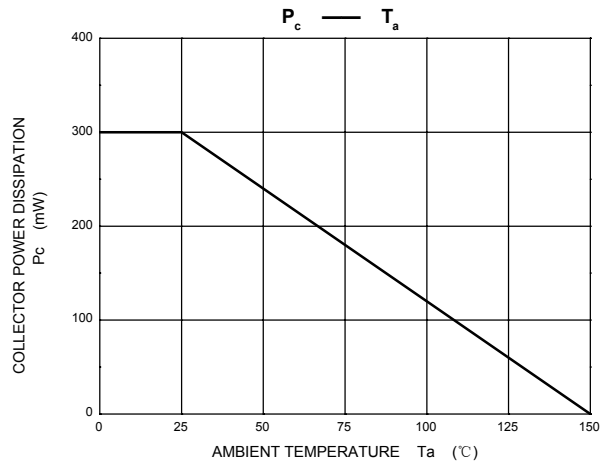
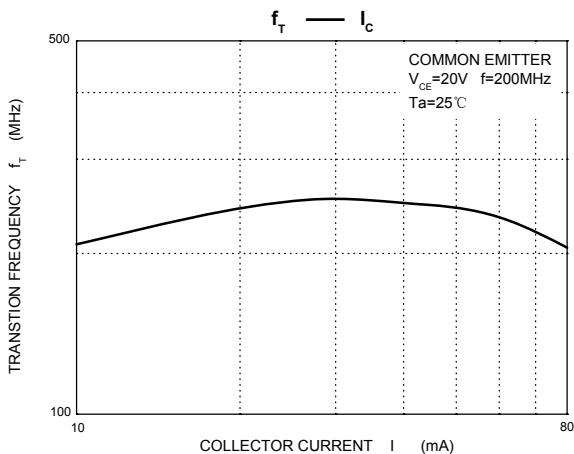
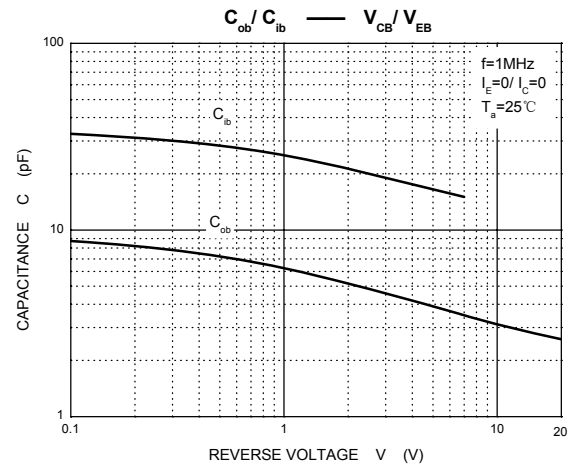
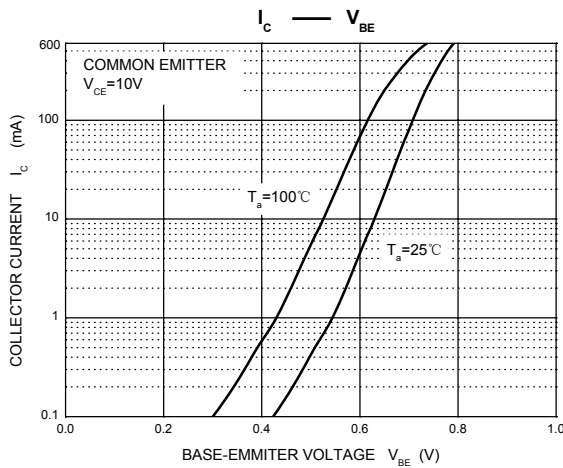
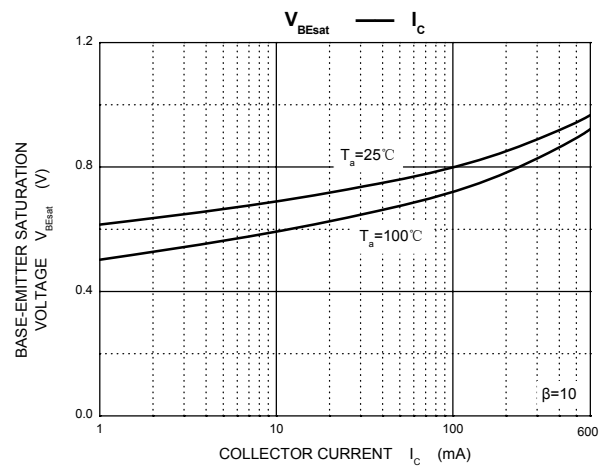
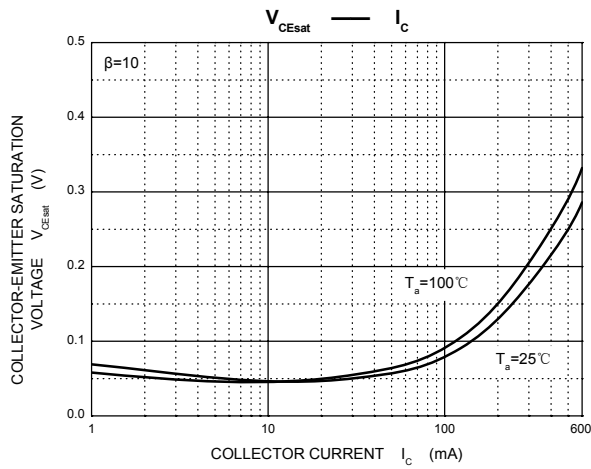
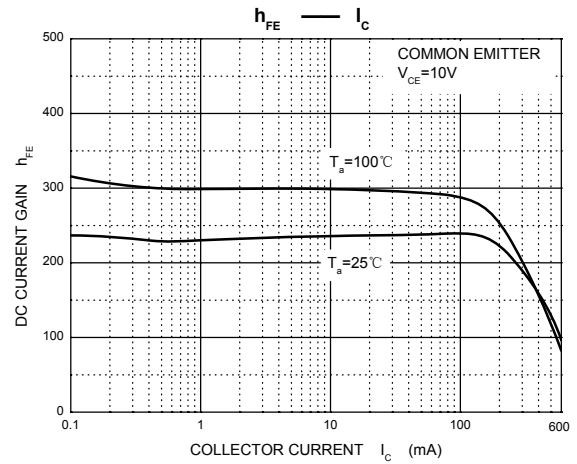
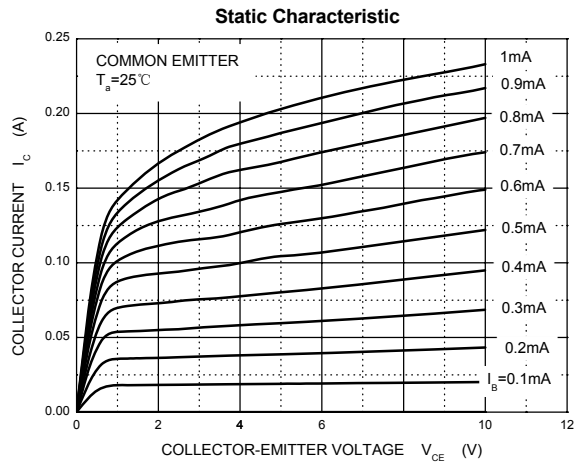
Symbol	Parameter	Value	Units
V _{CB0}	Collector-Base Voltage	75	V
V _{CEO}	Collector-Emitter Voltage	40	V
V _{EBO}	Emitter-Base Voltage	6	V
I _C	Collector Current -Continuous	600	mA
P _C	Collector Dissipation	300	mW
R _{θJA}	Thermal Resistance, Junction to Ambient	417	°C/W
T _J	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55to+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	75			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	6			V
Collector cut-off current	I _{CB0}	V _{CB} =60V, I _E =0			0.01	μA
Collector cut-off current	I _{CEx}	V _{CE} =30V, V _{BE(off)} =3V			0.01	μA
Emitter cut-off current	I _{EBO}	V _{EB} = 3V, I _C =0			0.1	μA
DC current gain	h _{FE(1)} *	V _{CE} =10V, I _C = 150mA	100		300	
	h _{FE(2)}	V _{CE} =10V, I _C = 0.1mA	40			
	h _{FE(3)} *	V _{CE} =10V, I _C = 500mA	42			
Collector-emitter saturation voltage	V _{CE(sat)} *	I _C =500 mA, I _B = 50mA I _C =150 mA, I _B =15mA			1 0.3	V
Base-emitter saturation voltage	V _{BE(sat)} *	I _C =500 mA, I _B = 50mA I _C =150 mA, I _B =15mA			2.0 1.2	V
Transition frequency	f _T	V _{CE} =20V, I _C = 20mA, f=100MHz	300			MHz
Delay time	t _d	V _{CC} =30V, V _{BE(off)} =-0.5V I _C =150mA, I _{B1} = 15mA			10	nS
Rise time	t _r				25	nS
Storage time	t _s				225	nS
Fall time	t _f	I _{B1} =-I _{B2} =15mA			60	nS

*pulse test: Pulse Width ≤300μs, Duty Cycles ≤ 2.0%.

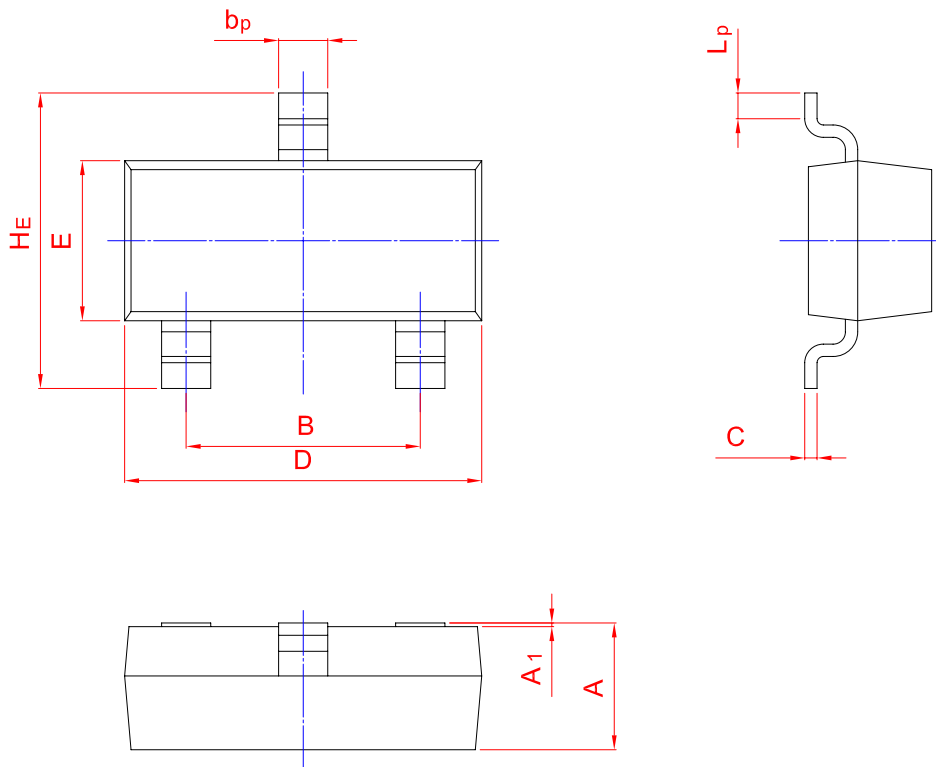
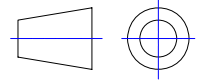
Typical Characteristics



PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



UNIT	A	B	b _p	C	D	E	H _E	A ₁	L _p
mm	1.40	2.04	0.50	0.19	3.10	1.65	3.00	0.100	0.50
	0.95	1.78	0.35	0.08	2.70	1.20	2.20	0.013	0.20