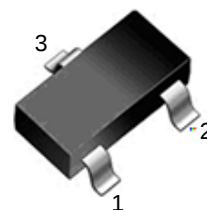


SOT-23 Plastic-Encapsulate Transistors

MMBT2222A TRANSISTOR (NPN)

• Features

- Complimentary to MMBT2907A



1. BASE
2. EMITTER
3. COLLECTOR

SOT - 23

• MAXIMUM RATINGS (T_C=25°C)

Parameter	Symbol	Limit	Unit
Collector-Base Voltage	V _{CBO}	75	V
Collector-Emitter Voltage	V _{CEO}	40	V
Emitter-Base Voltage	V _{EBO}	6	V
Collector Current	I _C	0.6	A
Collector Power Dissipation	P _C	300	mW
Thermal Resistance From Junction To Ambient	R _{θJA}	417	°C/W
Operation Junction and Storage Temperature Range	T _J , T _{stg}	-55~+150	°C

• ELECTRICAL CHARACTERISTICS (T_a=25°C)

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 _{CBO}	V _{CB} =60V, I _E =0			0.01	μA
Collector cut-off current	I _{CEX}	V _{CE} =30V, V _{EB(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			1	V
Base-emitter saturation voltage	V _{BE(sat)}	I _C =500 mA, I _B = 50mA			2.0	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	V _{CC} =30V, I _C =150mA I _{B1} =-I _{B2} =15mA			225	ns
Fall time	t _f				60	ns

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

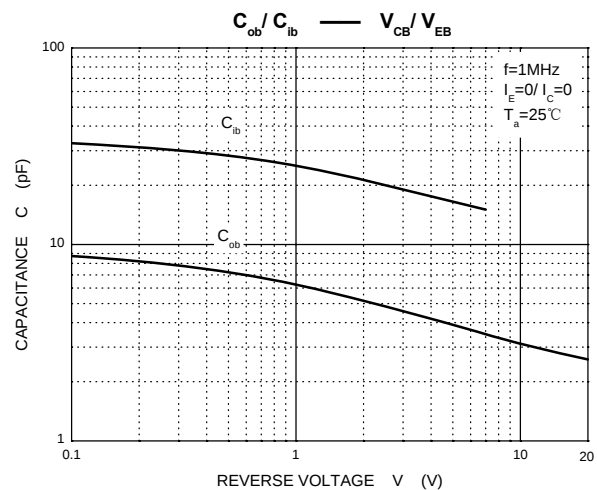
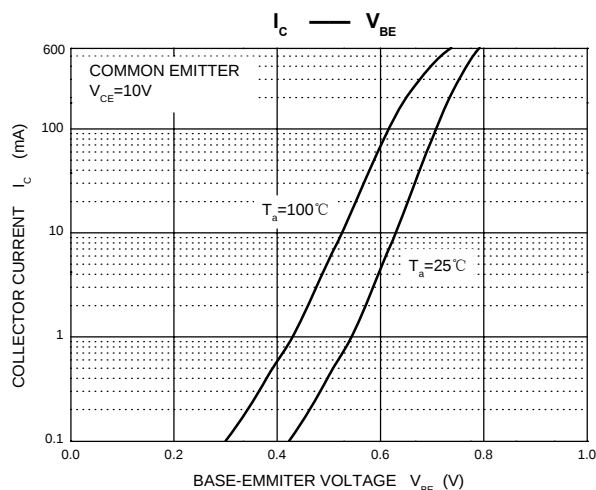
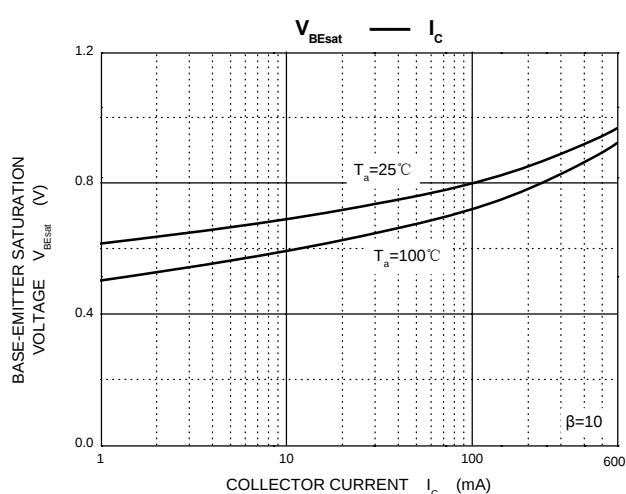
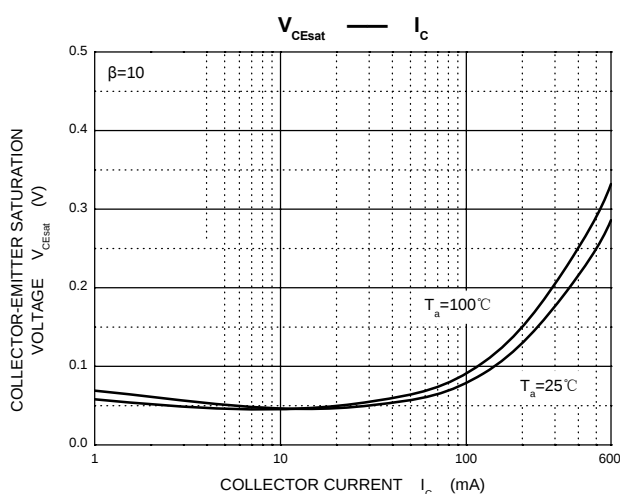
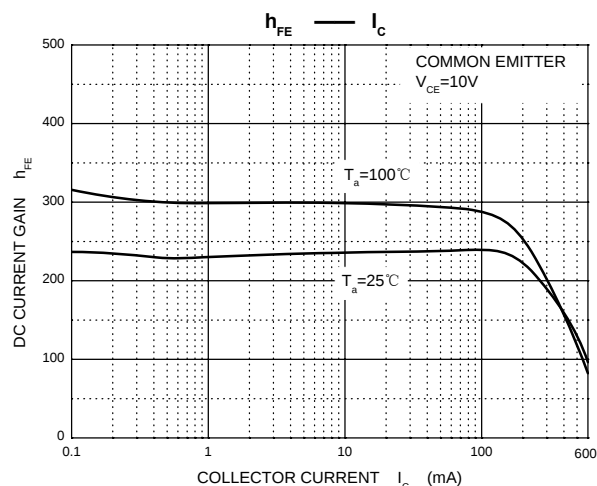
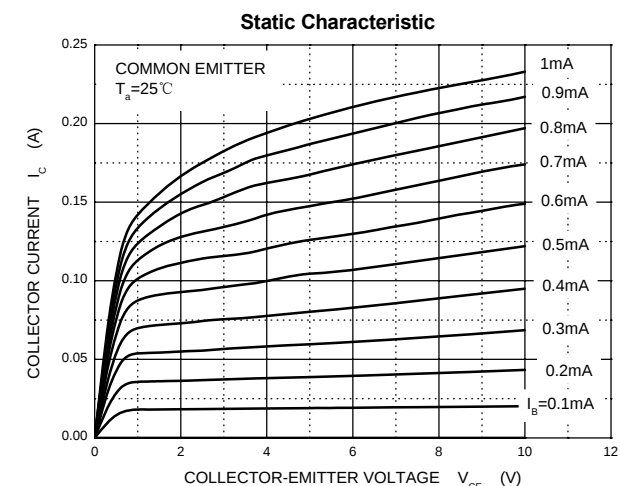
• CLASSIFICATION OF h_{FE(1)}

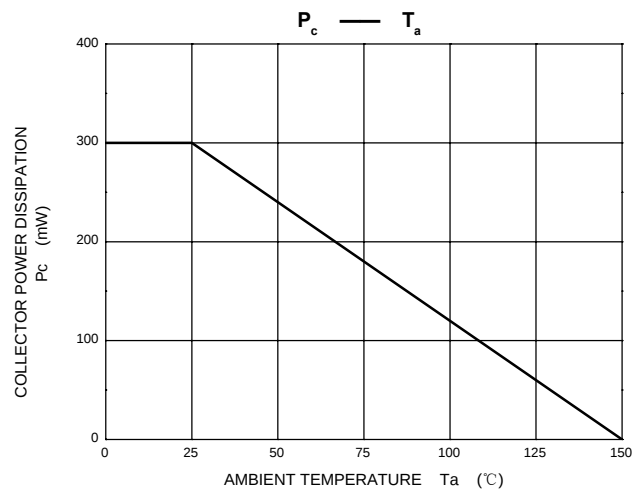
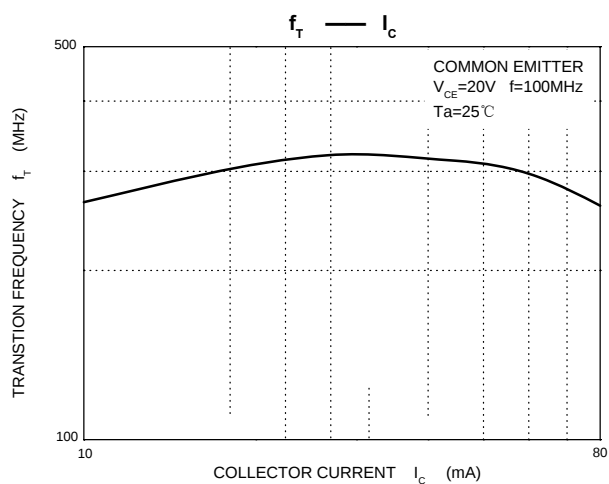
RANK	L	H
RANGE	100 - 200	200 - 300

• Ordering Information:

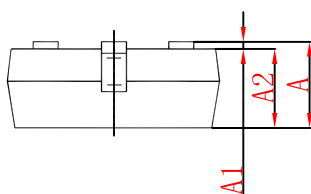
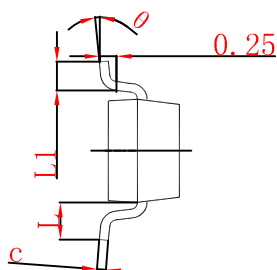
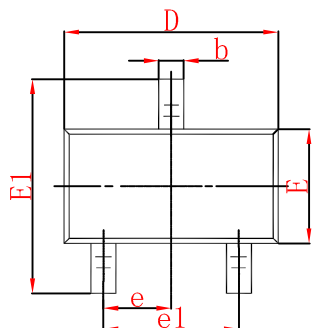
Part NO.	MMBT2222A
Marking	1P
Packing Information	REEL TAPE
Basic ordering unit (pcs)	3000

• Typical Characteristics

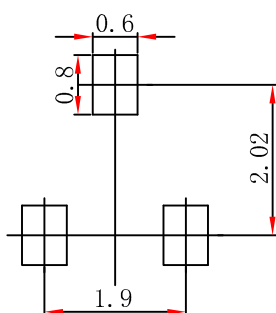




SOT-23 Package Outline Dimensions



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°



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.