

SOT-723 Plastic-Encapsulate Transistors

MMBT2222AM TRANSISTOR (NPN)

FEATURES

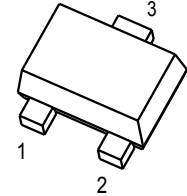
- Epitaxial planar die construction

MARKING: 1P

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

Symbol	Parameter	Value	Unit
V _{CB0}	Collector-Base Voltage	75	V
V _{CE0}	Collector-Emitter Voltage	40	V
V _{EB0}	Emitter-Base Voltage	6	V
I _c	Collector Current -Continuous	0.5	A
P _c	Power Dissipation	100	mW
R _{ΘJA}	Thermal Resistance from Junction to Ambient	1250	°C/W
T _J , T _{stg}	Operation Junction and Storage Temperature Range	-55~+150	°C

SOT-723



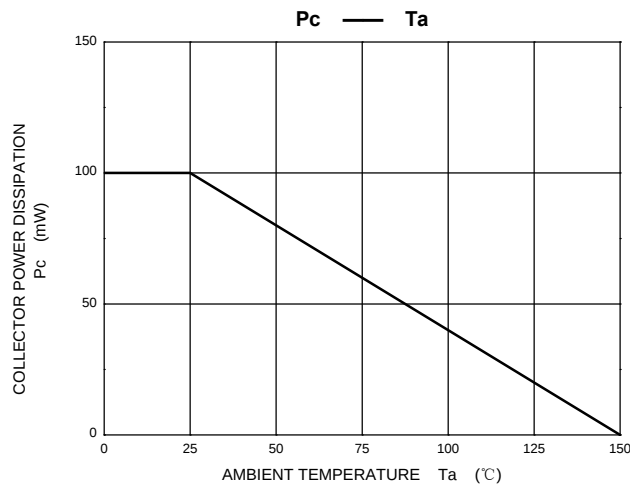
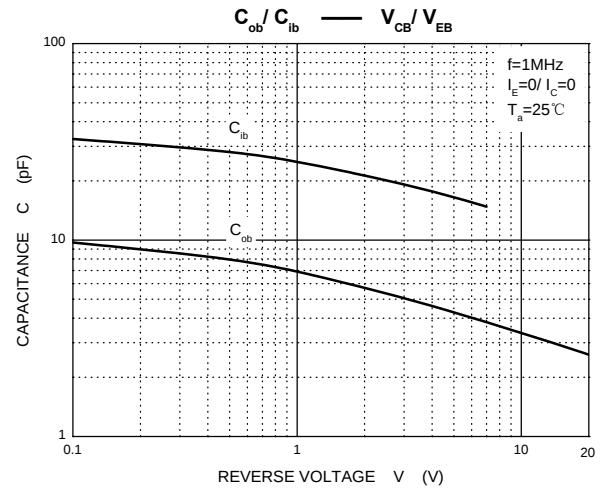
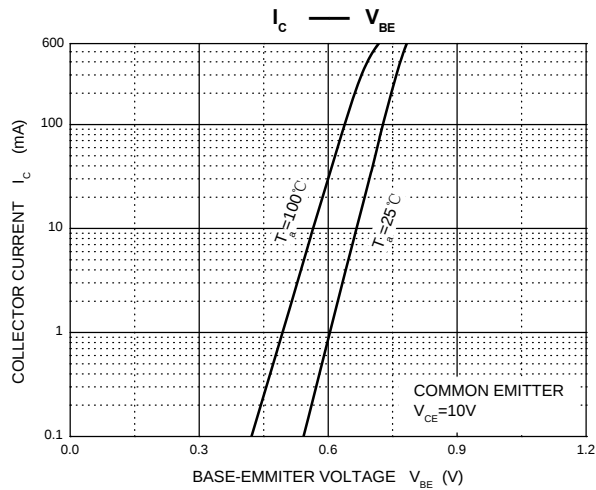
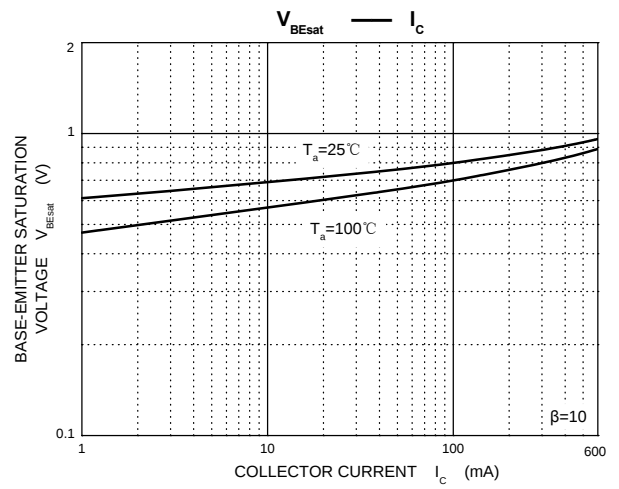
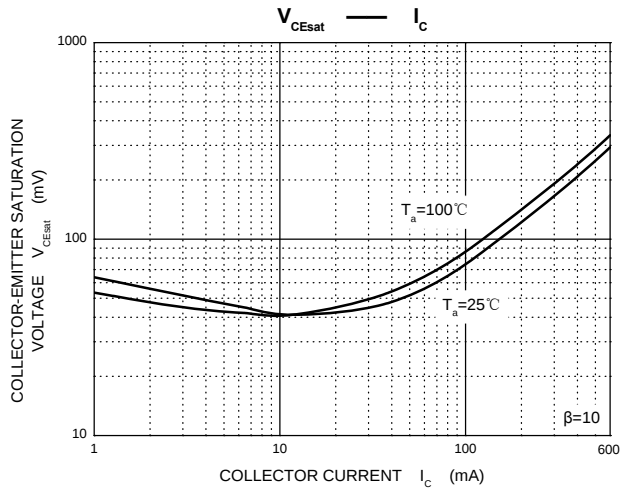
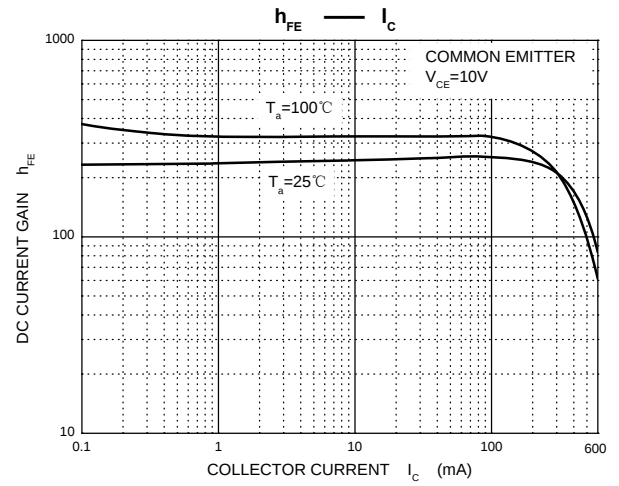
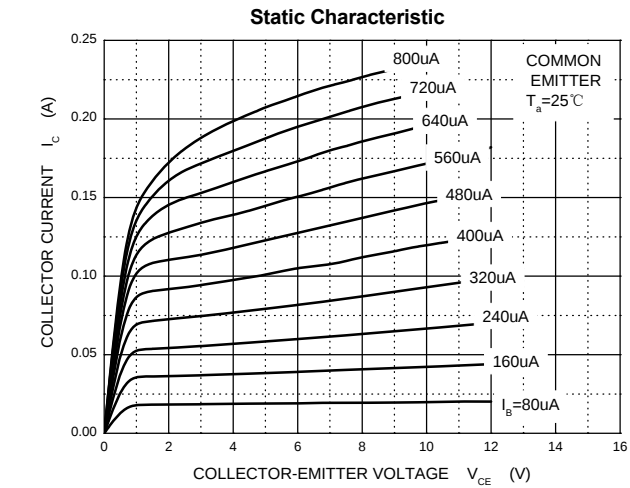
1. BASE
2. EMITTER
3. COLLECTOR

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

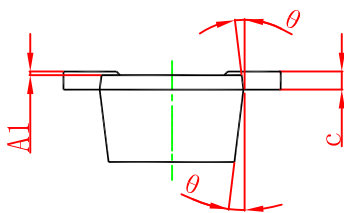
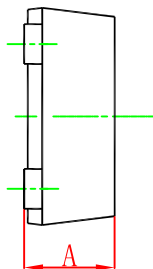
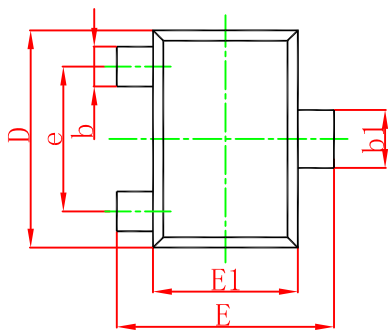
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V _{(BR)CBO}	I _C =10μA, I _E =0	75			V
Collector-emitter breakdown voltage	V _{(BR)CEO} *	I _C =10mA, I _B =0	40			V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =10μA, I _C =0	6			V
Collector cut-off current	I _{CBO}	V _{CB} =60V, I _E =0			0.01	μA
Collector cut-off current	I _{CEX}	V _{CE} =30V, V _{BE(off)} =3V			0.01	μA
Emitter cut-off current	I _{EBO}	V _{EB} =3V, I _C =0			0.01	μA
DC current gain	h _{FE} *	V _{CE} =10V, I _C = 150mA	100		300	
		V _{CE} =10V, I _C = 0.1mA	40			
		V _{CE} =10V, I _C = 500mA	42			
Collector-emitter saturation voltage	V _{CE(sat)} *	I _C =500 mA, I _B = 50mA			1	V
		I _C =150 mA, I _B =15mA			0.3	V
Base-emitter saturation voltage	V _{BE(sat)} *	I _C =500 mA, I _B = 50mA			2.0	V
		I _C =150 mA, I _B =15mA			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	V _{CC} =30V, I _C =150mA			225	ns
Fall time	t _f	I _{B1} =-I _{B2} =15mA			60	ns

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

Typical Characteristics

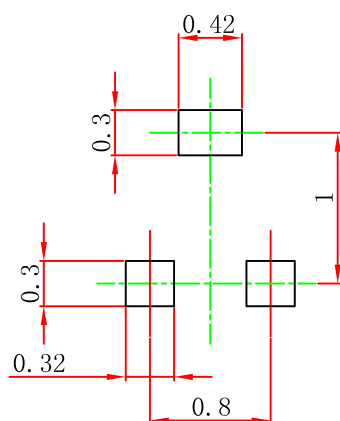


SOT-723 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.430	0.500	0.017	0.020
A1	0.000	0.050	0.000	0.002
b	0.170	0.270	0.007	0.011
b1	0.270	0.370	0.011	0.015
c	0.080	0.150	0.003	0.006
D	1.150	1.250	0.045	0.049
E	1.150	1.250	0.045	0.049
E1	0.750	0.850	0.030	0.033
e	0.800TYP.		0.031TYP.	
θ	7° REF.		7° REF.	

SOT-723 Suggested Pad Layout



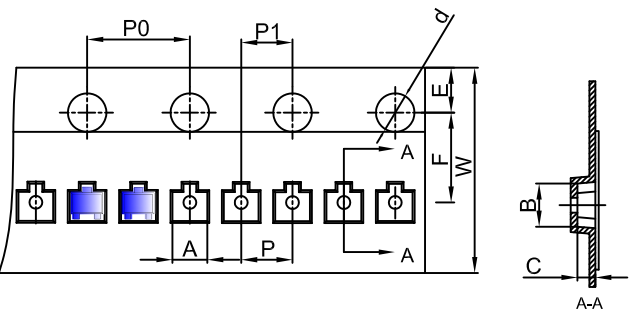
Note:

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

NOTICE

JSCJ reserves the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. JSCJ does not assume any liability arising out of the application or use of any product described herein.

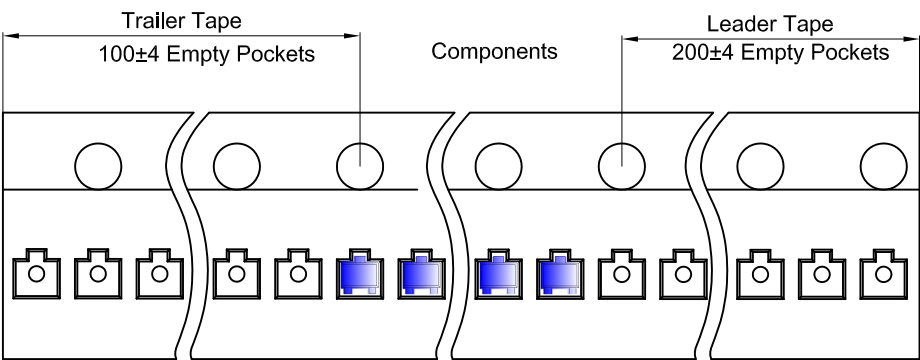
SOT-723 Embossed Carrier Tape



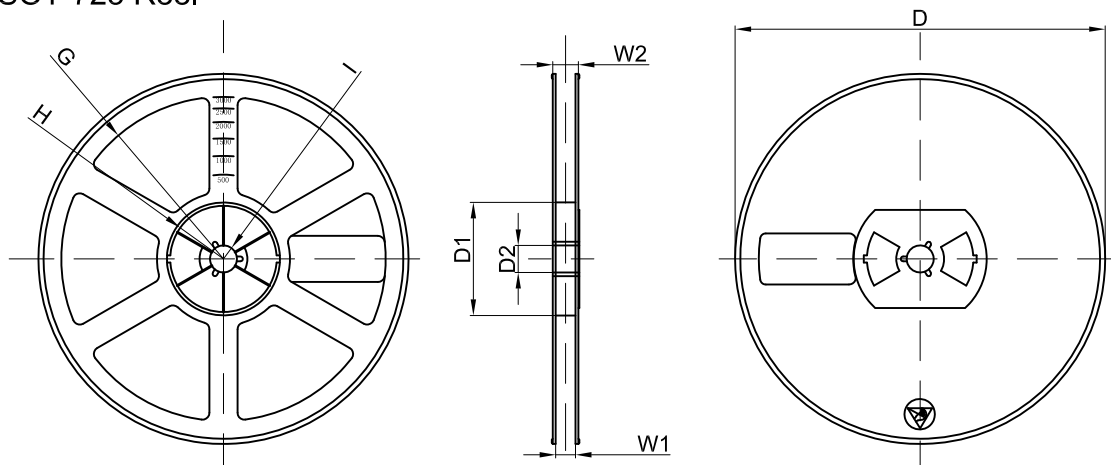
Packaging Description:
SOT-723 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 8,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-723	1.33	1.45	0.61	Ø1.50	1.75	3.50	4.00	2.00	2.00	8.00

SOT-723 Tape Leader and Trailer



SOT-723 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7" Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
8000 pcs	7 inch	120,000 pcs	203×203×195	480,000 pcs	438×438×220	