JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD.

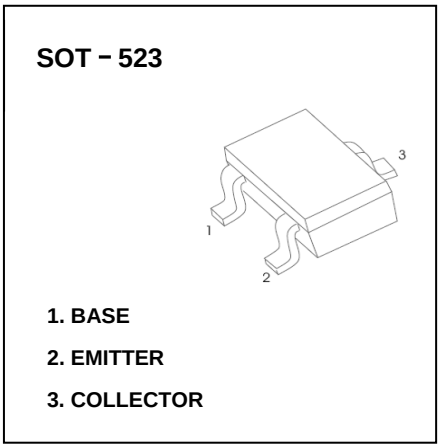
SOT-523 Plastic-Encapsulate Transistors

MMBT2222AT TRANSISTOR (NPN)

FEATURES

- Complementary to MMBT2907AT
- Small Package

MARKING:1P



MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

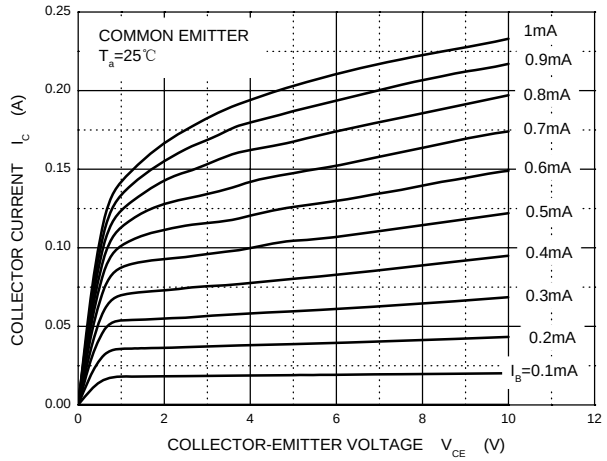
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	75	V
V_{CEO}	Collector-Emitter Voltage	40	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current	600	mA
P_C	Collector Power Dissipation	150	mW
$R_{\Theta JA}$	Thermal Resistance from Junction to Ambient	833	℃/W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55～+150	℃

ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

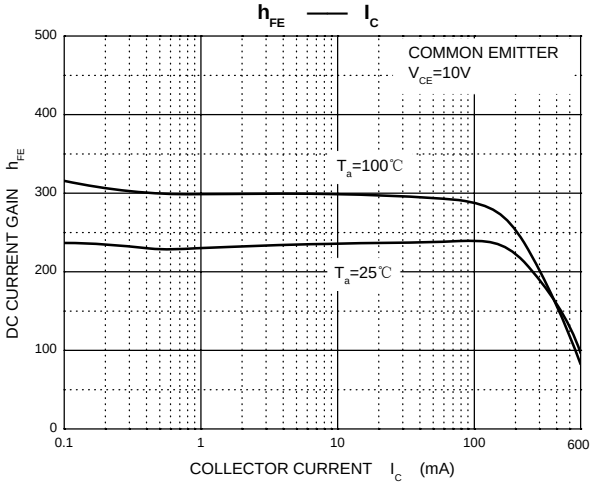
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=10μA, I_E=0	75			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=10mA, I_B=0	40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=10μA, I_C=0	6			V
Collector cut-off current	I_{CEX}	V_{CE}=60V,$V_{EB(off)}$=3V			10	nA
DC current gain	$h_{FE(1)}$	V_{CE}=10V, I_C=0.1mA	35			
	$h_{FE(2)}$	V_{CE}=10V, I_C=1mA	50			
	$h_{FE(3)}$	V_{CE}=10V, I_C=10mA	75			
	$h_{FE(4)}$	V_{CE}=10V, I_C=150mA	100		300	
	$h_{FE(5)}$	V_{CE}=10V, I_C=500mA	40			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=150mA, I_B=15mA			0.3	V
		I_C=500mA, I_B=50mA			1	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=150mA, I_B=15mA			1.2	V
		I_C=500mA, I_B=50mA			2	V
Transition frequency	f_T	V_{CE}=20V,I_C=20mA, f=100MHz	300			MHz
Collector output capacitance	C_{ob}	V_{CB}=10V, I_E=0, f=1MHz			8	pF
Delay time	t_d	V_{CC}=30V, $V_{BE(off)}$=-0.5V I_C=150mA, I_{B1}=15mA			10	ns
Rise time	t_r	V_{CC}=30V, $V_{BE(off)}$=-0.5V I_C=150mA, I_{B1}=15mA			25	ns
Storage time	t_s	V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA			225	ns
Fall time	t_f	V_{CC}=30V, I_C=150mA, I_{B1}= I_{B2}=15mA			60	ns

Typical Characteristics

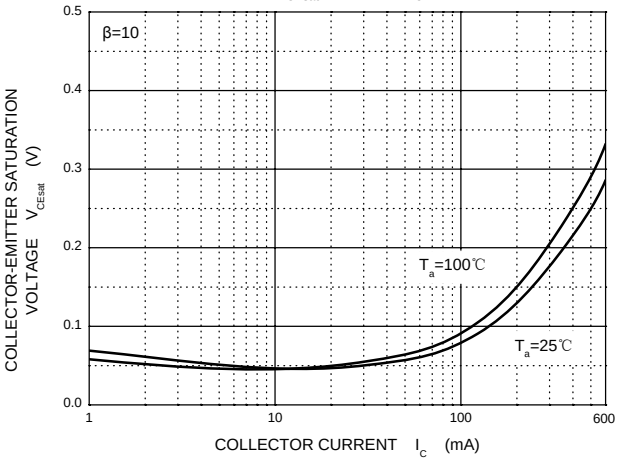
Static Characteristic



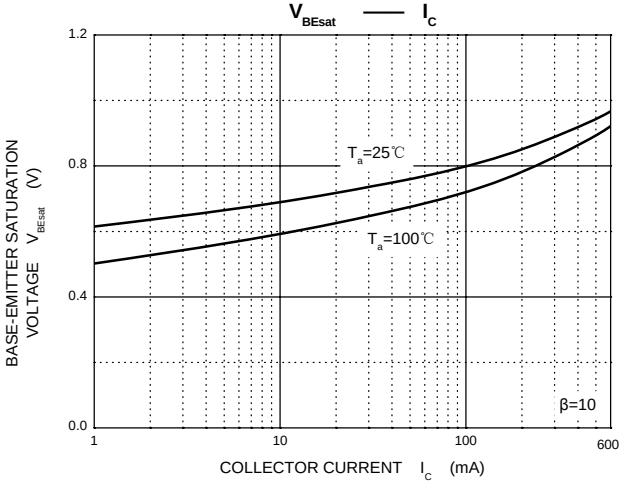
h_{FE} —— I_C



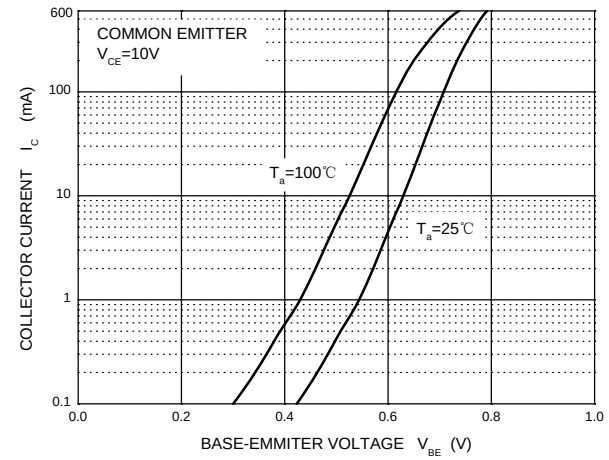
V_{CEsat} —— I_C



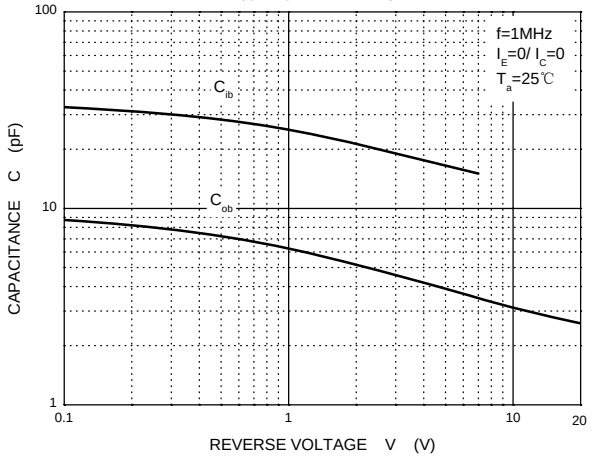
V_{BEsat} —— I_C



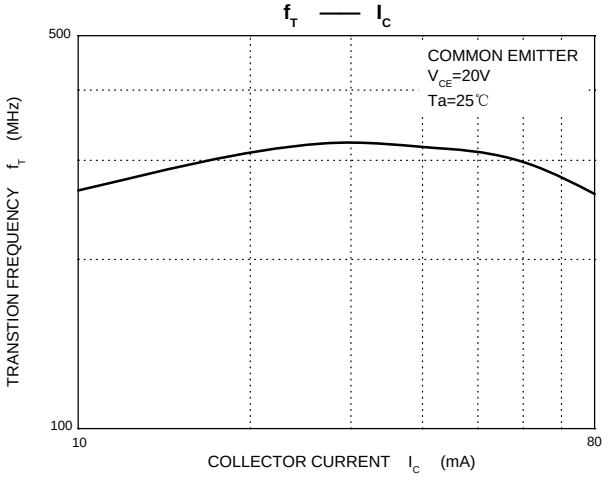
I_C —— V_{BE}



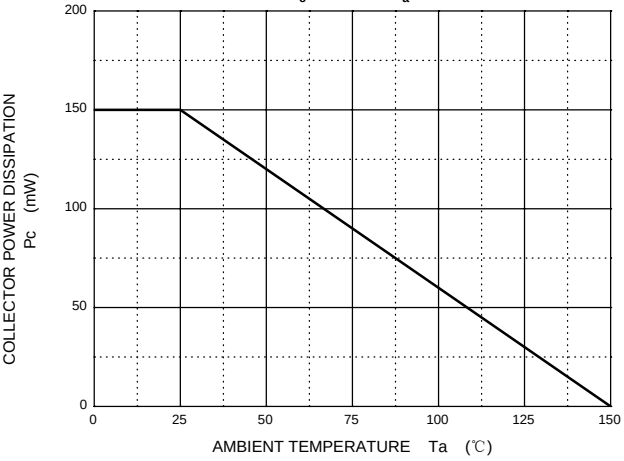
C_{ob}/ C_{ib} —— V_{CB}/ V_{EB}



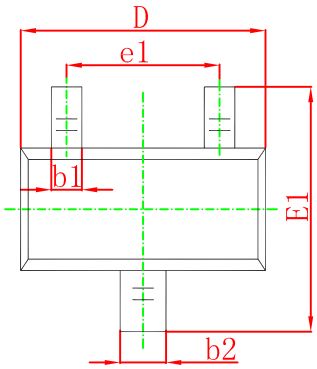
f_T —— I_C

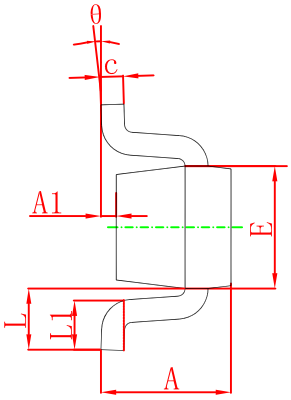


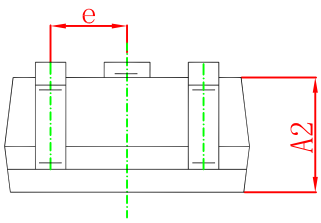
P_c —— T_a



SOT-523 Package Outline Dimensions

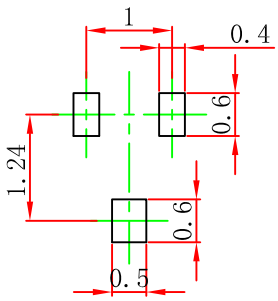






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.350	0.010	0.014
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
E	0.700	0.900	0.028	0.035
E1	1.450	1.750	0.057	0.069
e	0.500 TYP.		0.020 TYP.	
e1	0.900	1.100	0.035	0.043
L	0.400 REF.		0.016 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

SOT-523 Suggested Pad Layout

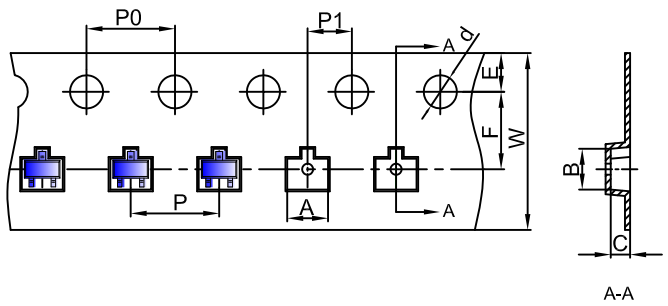


Note:
1.Controlling dimension:in millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.

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-523 Tape and Reel

SOT-523 Embossed Carrier Tape

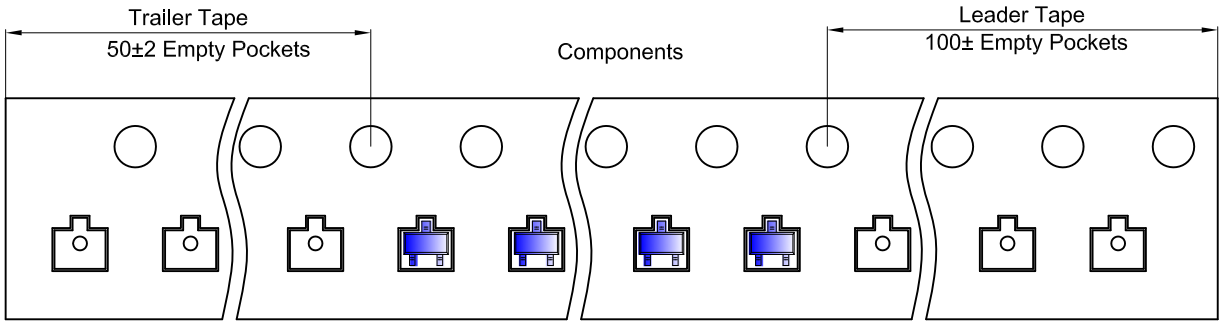


Packaging Description:

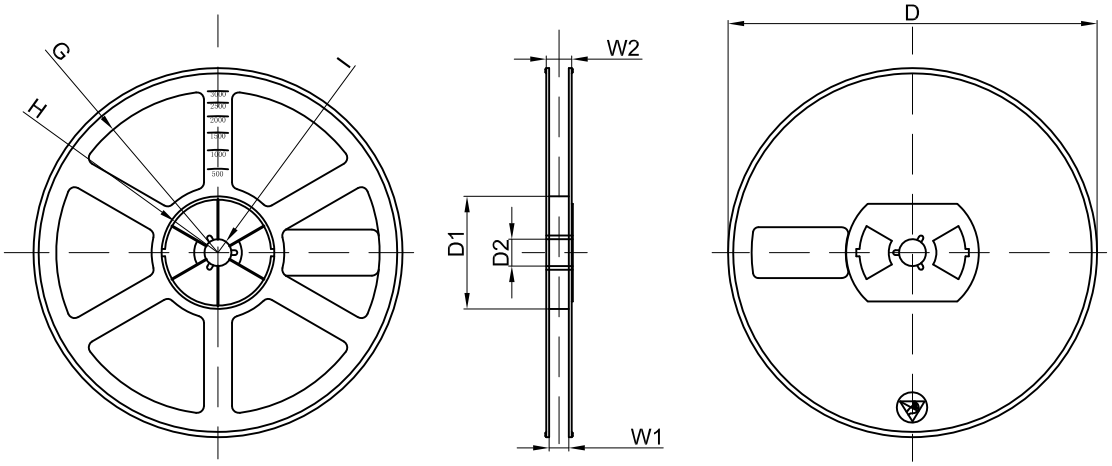
SOT-523 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 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-523	1.85	1.85	0.875	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOT-523 Tape Leader and Trailer



SOT-523 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)
3000 pcs	7 inch	45,000 pcs	203×203×195	180,000 pcs	438×438×220	