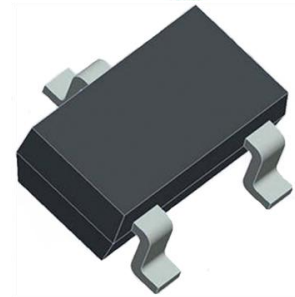
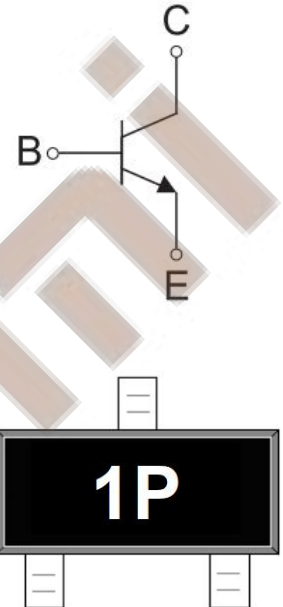


General Description

V_{CEO}	I_C	$V_{CE(sat)}$	f_T	T_{jMax}
40V	600mA	1.0V	300MHz	150°C

Features

- SOT-523 Package
- Epoxy meets UL-94 V-0 flammability rating and halogen free
- Moisture Sensitivity Level 3
- High temperature soldering guaranteed 260°C/10seconds
at terminals



Package Marking and Ordering Information

Product ID	Package	Marking	Qty(PCS)
MMBT2222AT	SOT-523	1P	3000

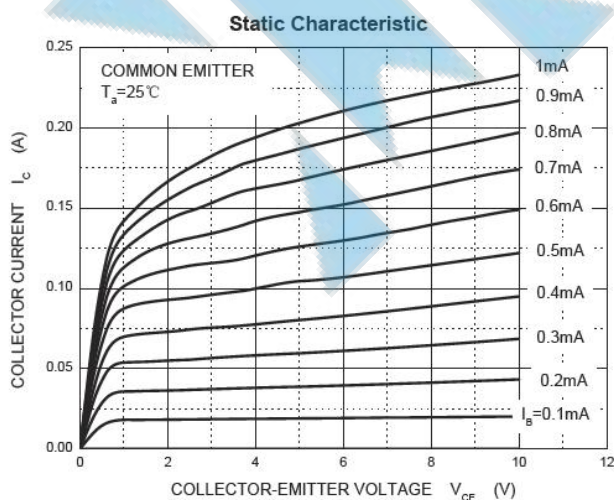
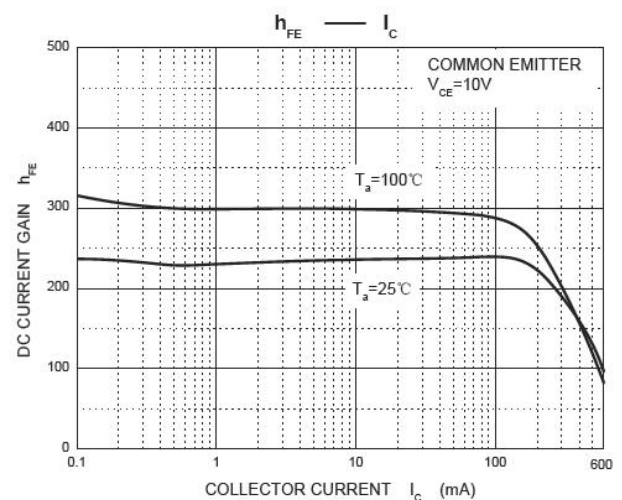
Absolute Maximum Ratings (Ta=25°C unless otherwise noted)

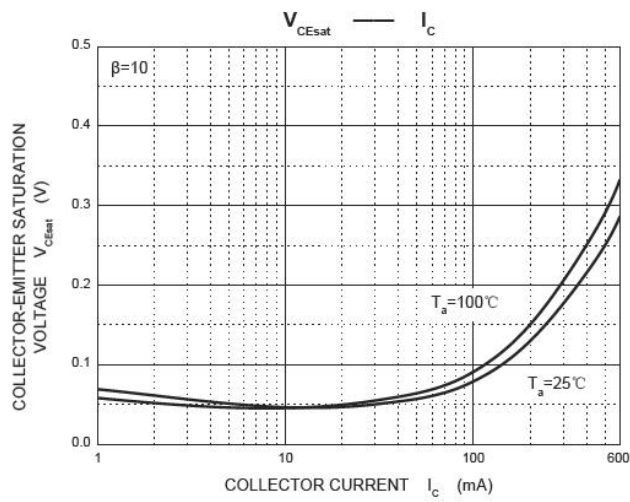
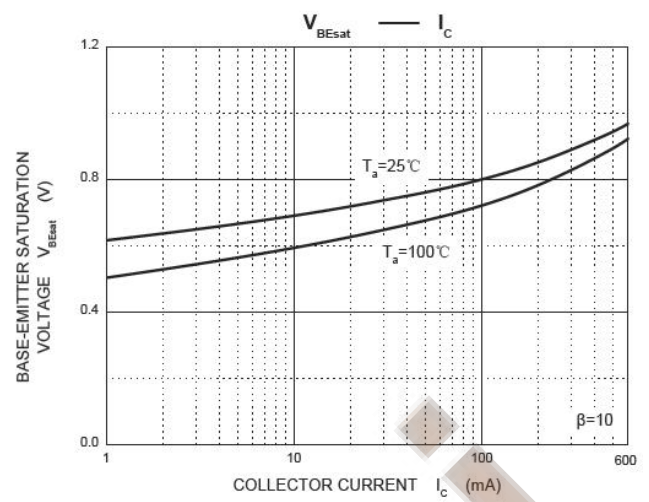
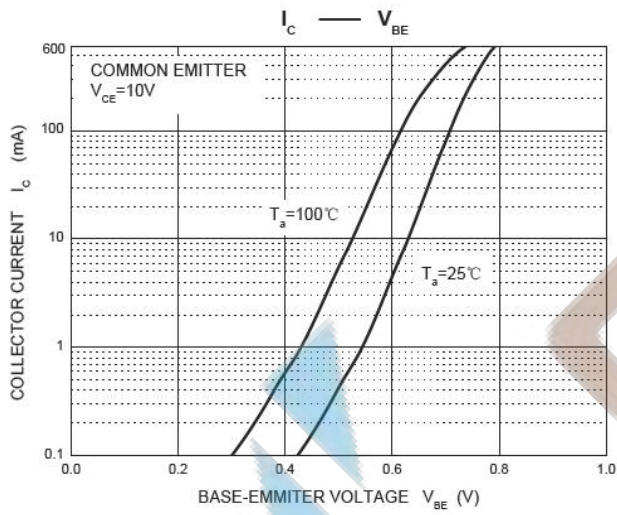
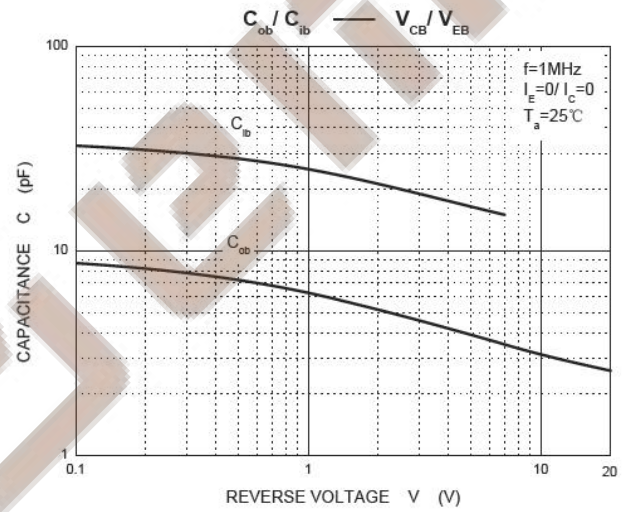
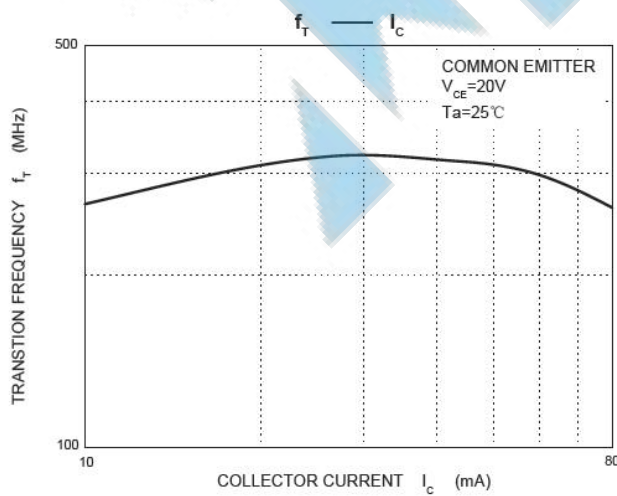
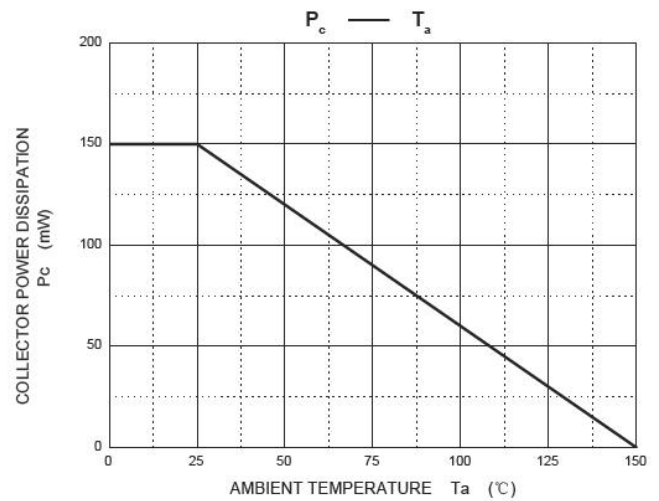
Parameter	Symbols	Value	Units
Collector-Base Voltage	VCBO	75	V
Collector-Emitter Voltage	VCEO	40	V
Emitter -Base Voltage	VEBO	6	V
Collector Current-Continuous	IC	600	mA
Collector Power Dissipation	PC	150	mW
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	-55-+150	°C
Thermal resistance From junction to ambient	R θ JA	833	°C/W

Electrical Characteristics(Ta=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Max.	Unit
Collector-base breakdown voltage	V(BR)CBO	IC=10uA, IE=0	75		V
Collector-emitter breakdown voltage	V(BR)CEO	IC=10mA, IB=0	40		V
Emitter-base breakdown voltage	V(BR)EBO	IE=10uA, IC=0	6		V
Collector cut-off current	ICEX	VCE=60V, VEB(off)=3V		10	nA
DC current gain	hFE(1)	VCE=10V, IC=0.1mA	35		
	hFE(2)	VCE=10V, IC=1mA	50		
	hFE(3)	VCE=10V, IC=10mA	75		
	hFE(4)	VCE=10V, IC=150mA	100	300	
	hFE(5)	VCE=10V, IC=500mA	40		
Collector-emitter saturation voltage	VCE(sat)	IC=150mA, IB=15mA		0.30	V
		IC=500mA, IB=50mA		1.00	V
Base -emitter saturation voltage	VBE(sat)	IC=150mA, IB=15mA		1.20	V
		IC=500mA, IB=50mA		2.00	V
Transition frequency	fT	VCE=20V, IC=20mA, f=100MHz	300		MHz
Collector output capacitance	Cob	VCB=10V, IE=0, f=1MHz		8	pF
Delay time	td	VCC=30V, VBE(off)=-0.5V,		10	nS
Rise time	tr	IC=150mA, IB1=15mA		25	nS
Storage time	ts	VCC=30V, IC=150mA, IB1=IB2=15mA		225	nS
Fall time	tf			60	nS

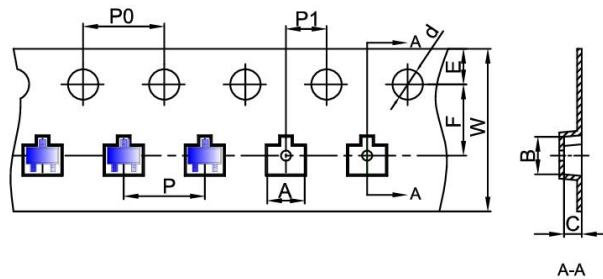
*Pulse test: pulse width≤300us,duty cycle≤2.0%

Typical characteristics


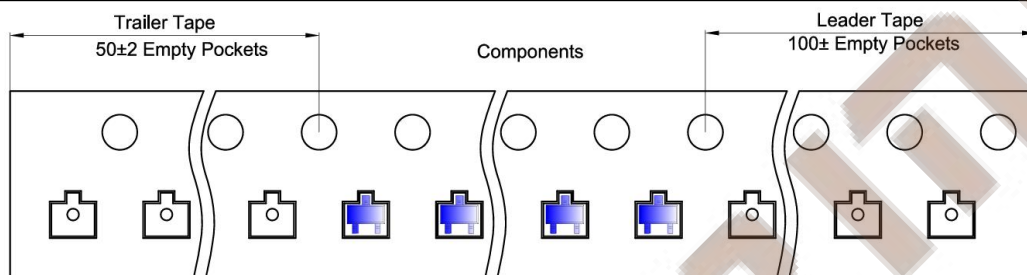


Package Information

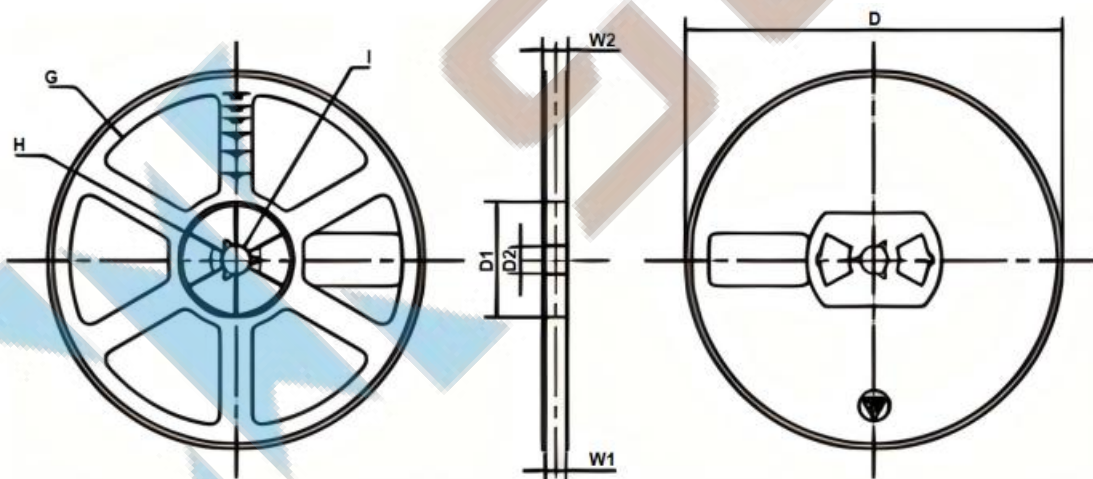
Carrier Dimension(mm)



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



Reel Dimension(mm)



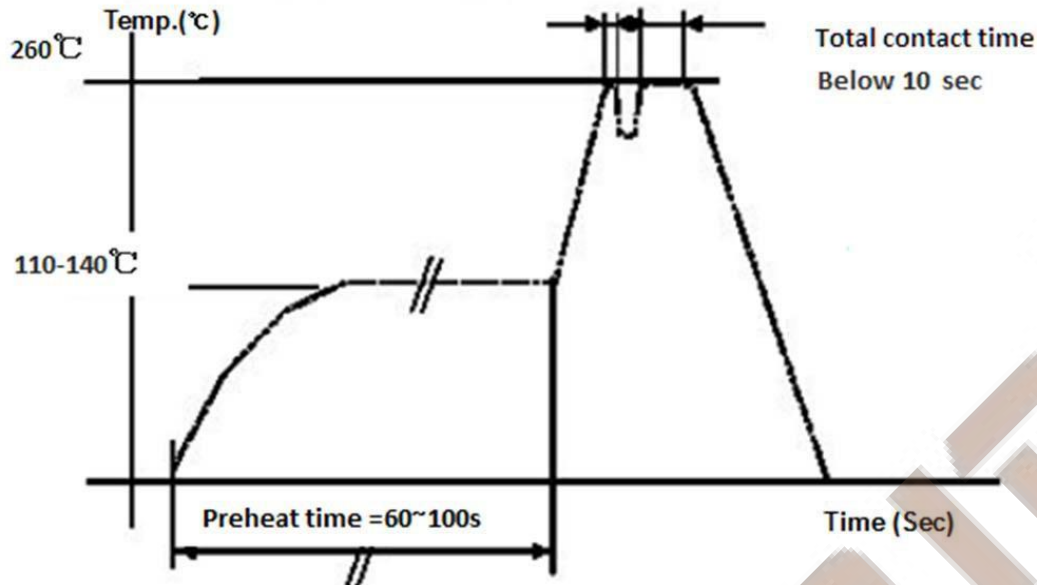
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Φ178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30
Tolerance	±2	±1	±1	±1	±1	±1	±1	±1

Package Specifications

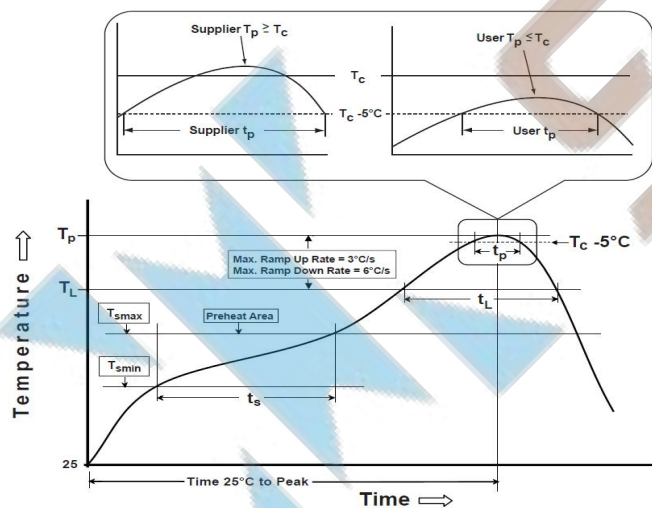
Package	Reel Size	Reel DIA. (mm)	Q'TY/Reel (Kpcs)	Box Size (mm)	QTY/Box (Kpcs)	Carton Size (mm)	Q'TY/Carton (Kpcs)
SOT523	7'	178	3	210*208*203	45	440*400*230	180

Recommended Soldering Profile for Rectifier Diodes (Pb Free)

a) Wave Soldering Profile



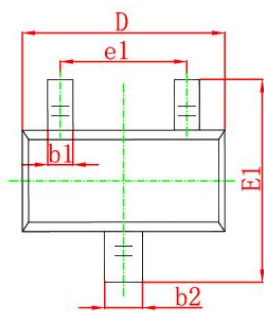
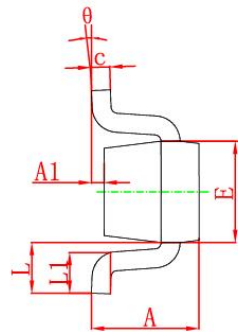
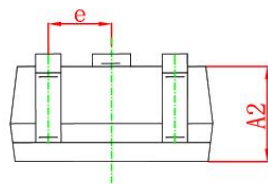
b) Reflow Soldering Profile (Pb Free Application), refer to IPC/JEDEC J-STD-020



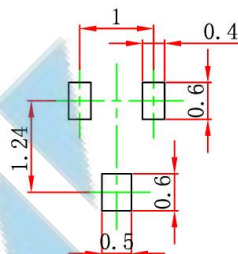
Preheat/Soak Temperature Min (T _{min}) Temperature Max (T _{max}) Time (ts) from (T _{min} to T _{max})	50 °C 200 °C 60-120 seconds
Melting Point of Solder (Sn Ag Cu)	217°C
Ramp-up Rate to 217°C(Melting Point of Solder)	3°C/sec
Time at Temp.>217°C (Melting Point of Solder)	60~150 Sec
Peak Temperature	255±5°C
Time within 5°Cbelow Peak Temp.	20~40 Sec
Cooling Rate	6°C/sec (max)
Time from 25°C to Peak Temp.	8min (max)

c) Manual Soldering

When using an electric soldering iron for manual soldering, it is recommended that the temperature does not exceed 300°C and the soldering time is less than 10 seconds.

Package Mechanical Data


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°

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.

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