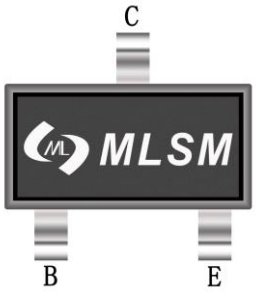
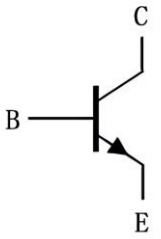
Features

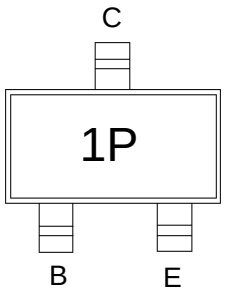
• Complementary to MMBT2907AT
• Small Package



SOT-523 top view



Schematic diagram



Marking and pin assignment

Pb-Free RoHS Halogen-Free

Maximum Ratings (Ta=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	°C/W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	°C

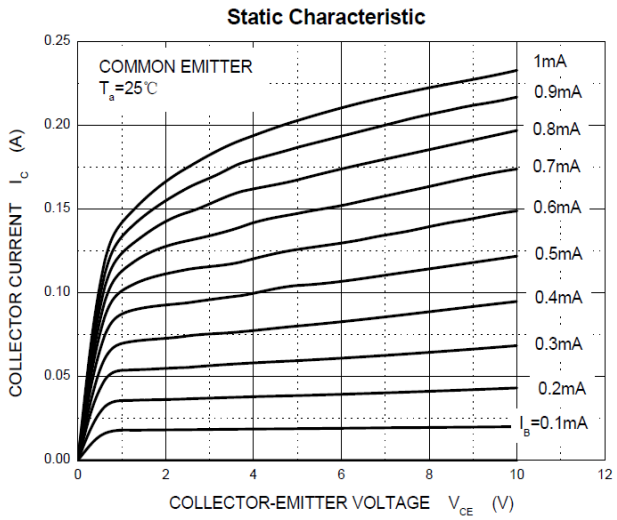
Ordering Information (Example)

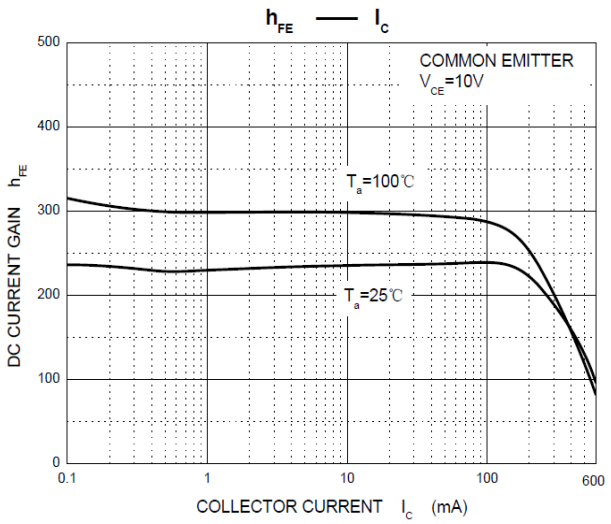
Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MMBT2222AT	SOT-523	1P	3,000	45,000	180,000	7"reel

Electrical Characteristics (Ta=25℃ unless otherwise specified)

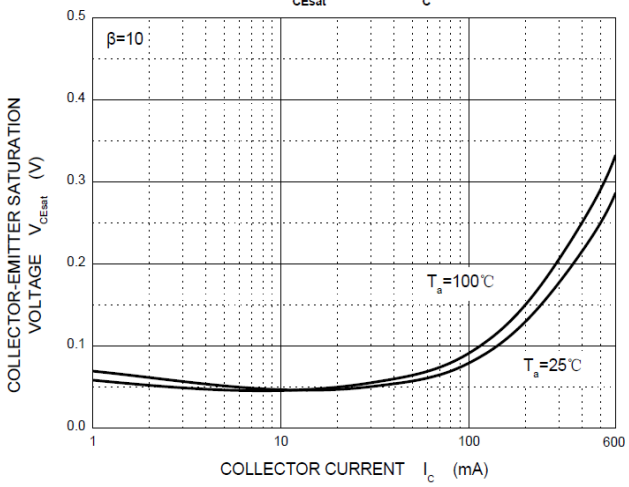
Symbol	Parameter	Condition	Min	Typ	Max	Unit
$V_{(BR)CBO}$	Collector-base breakdown voltage	I_C=10μA,I_E=0	75	--	--	V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	I_C=10mA, I_B=0	40	--	--	V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	I_E=10μA,I_C=0	6	--	--	V
I_{CEX}	Collector cut-off current	V_{CE}=60V,$V_{EB(off)}$=3V	--	--	10	nA
$H_{FE(1)}$	DC current gain	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	--	--	
$V_{CE(sat)}$	Collector-emitter saturation voltage	I_C=150mA, I_B=15mA	--	--	0.3	V
		I_C=500mA, I_B=50mA	--	--	1	V
$V_{BE(sat)}$	Base-emitter saturation voltage	I_C=150mA, I_B=15mA	--	--	1.2	V
		I_C=500mA, I_B=50mA	--	--	2	V
f_T	Transition frequency	V_{CE}=20V,I_C=20mA, f=100MHz	300	--	--	MHz
t_d	Delay time	V_{CC}=30V, $V_{BE(off)}$=-0.5V I_C=150mA,I_{B1}=15mA	--	--	10	ns
t_r	Rise time	V_{CC}=30V, $V_{BE(off)}$=-0.5V I_C=150mA, I_{B1}=15mA	--	--	25	ns
t_s	Storage time	V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA	--	--	225	ns
t_f	Fall time	V_{CC}=30V, I_C=150mA, IB_1= I_{B2}=15mA	--	--	60	ns
C_{ob}	Collector output capacitance	V_{CB}=10V, I_E=0, f=1MHz	--	--	8	pF

Typical Characteristics

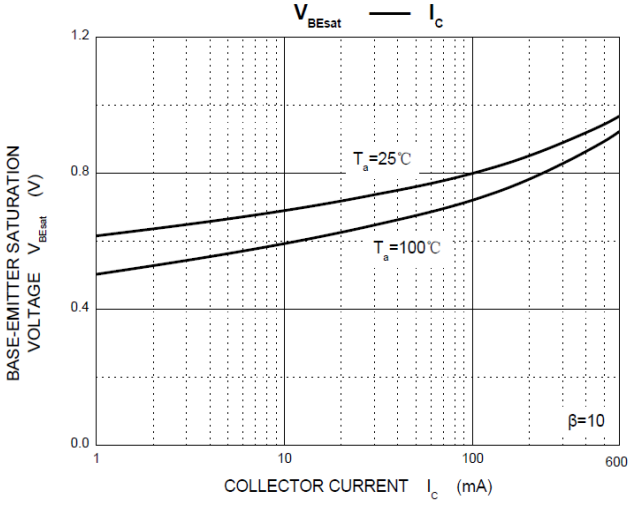




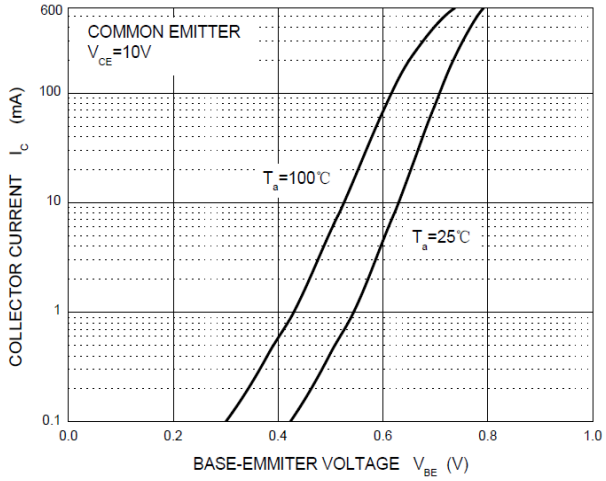
V_{CEsat} — I_C



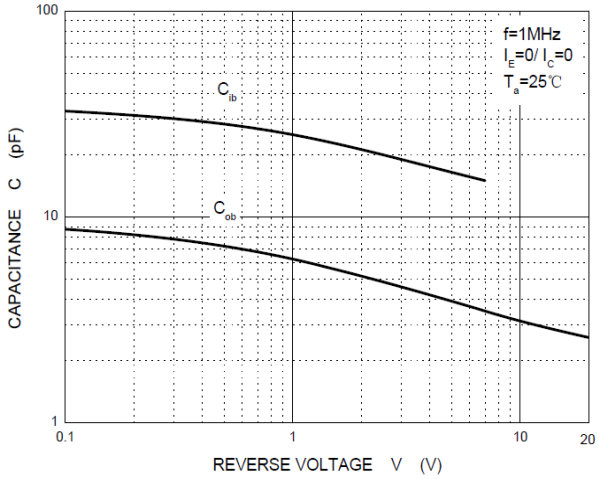
V_{BEsat} — I_C



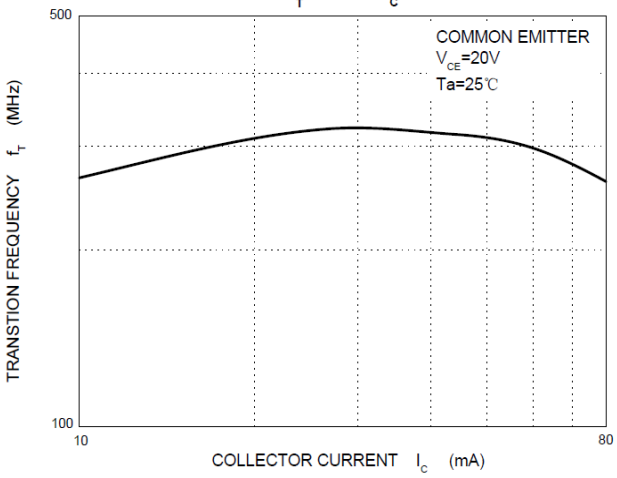
I_C — V_{BE}



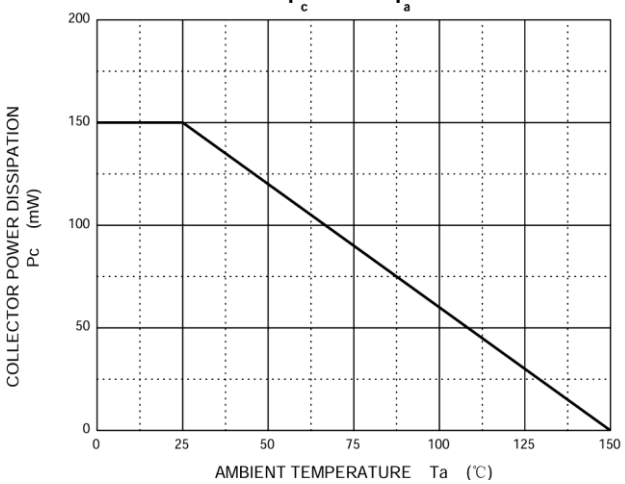
C_{ob}/ C_{ib} — V_{CB}/ V_{EB}



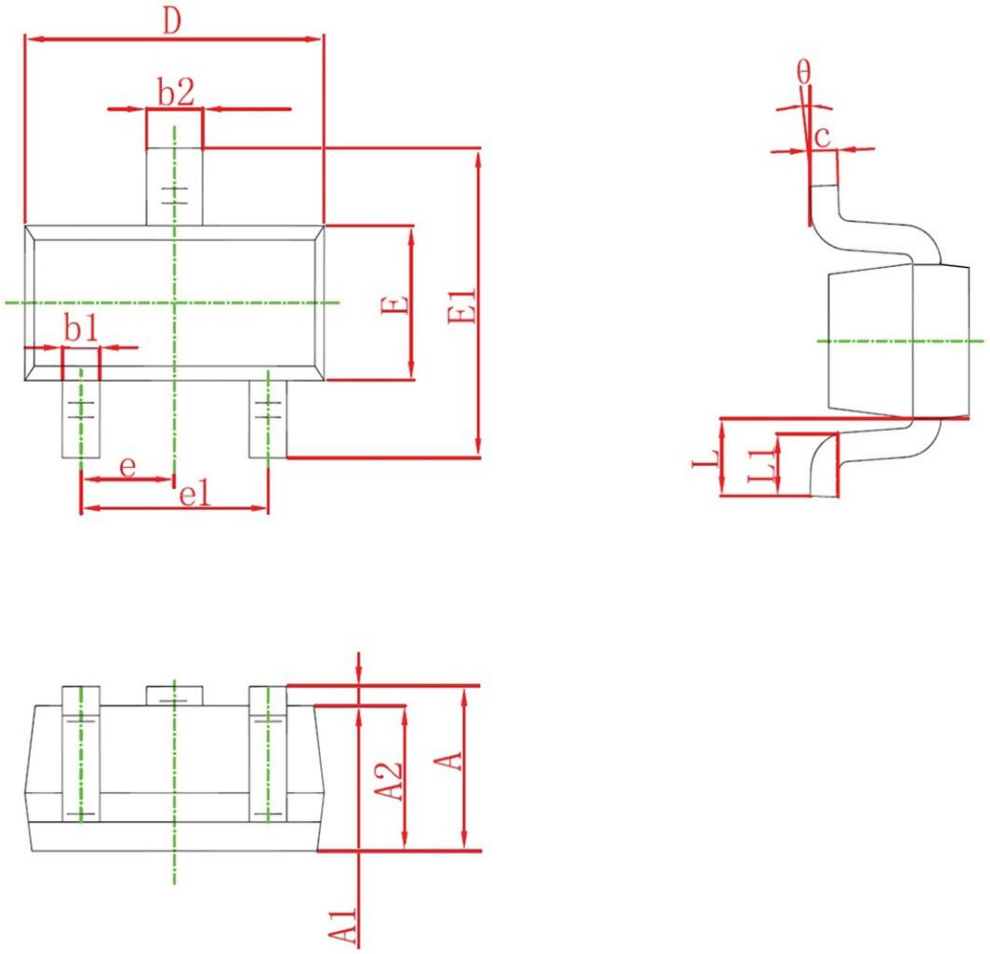
f_T — I_C



P_c — T_a



SOT-523 Package information



Symbol	Dimensions in Millimeters(mm)		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	0.500TYP		0.020TYP	
e1	0.900	1.100	0.035	0.043
L	0.400REF		0.016REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°