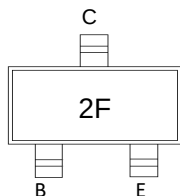
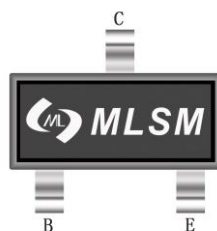


Features

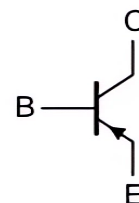
- Epitaxial planar die construction
- Complementary NPN Type available(MMBT2222A)



Marking and pin assignment



SOT-23 top view



Schematic diagram



Pb-Free



Halogen-Free

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

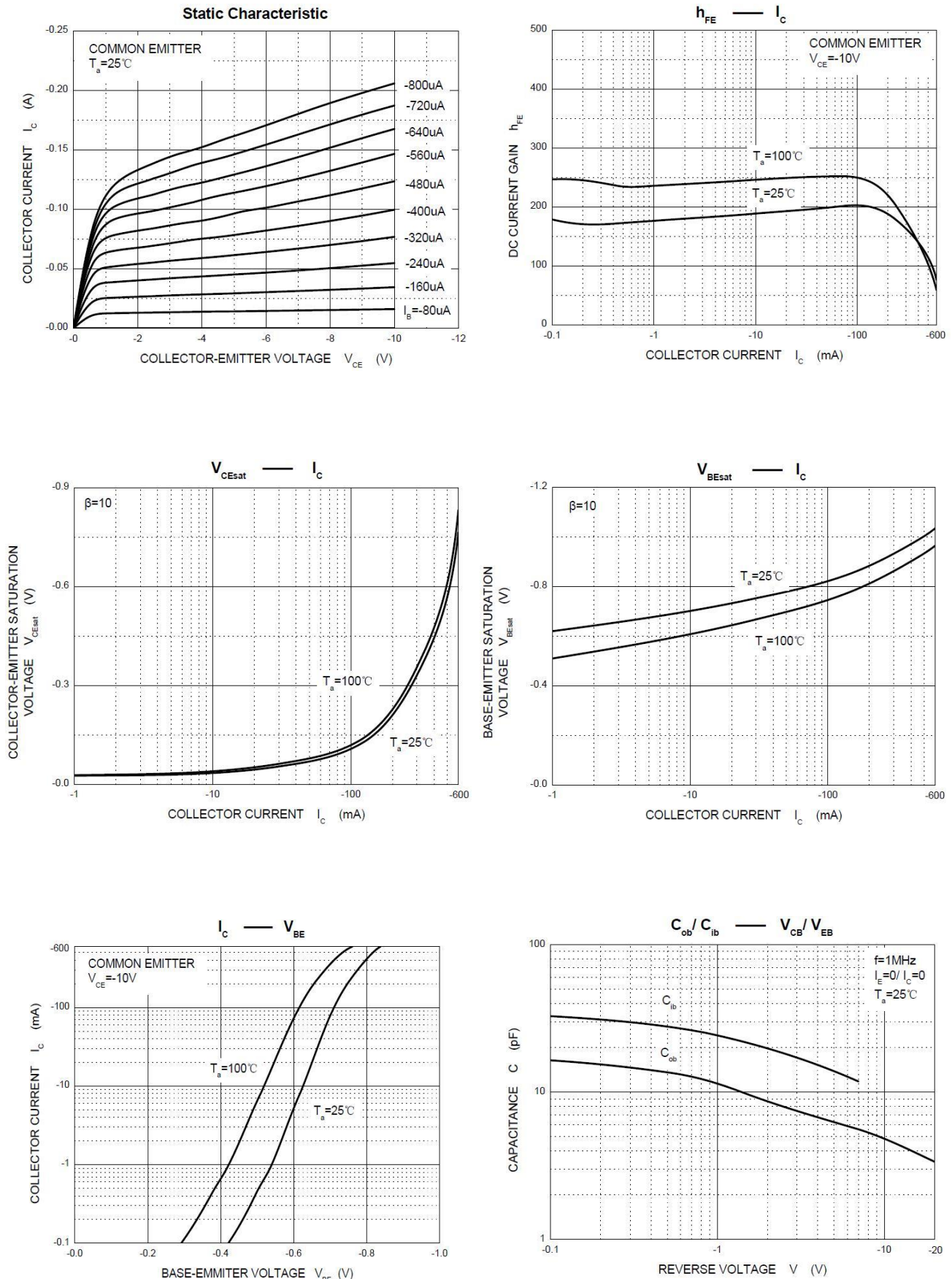
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-60	V
V_{CEO}	Collector-Emitter Voltage	-60	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current -Continuous	-600	mA
P_D	Total Device Dissipation	250	mW
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	500	°C/W
T_J, T_{STG}	Operating and Storage Temperature Range	-55~ +150	°C

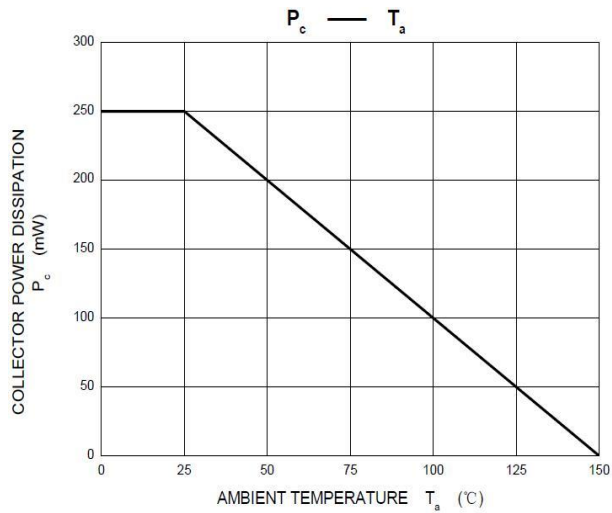
Electrical Characteristics (Ta=25°C unless otherwise specified)

Symbol	Parameter	Test conditions	Min	Typ	Max	Unit
$V_{(BR)CBO}$	Collector-base breakdown voltage	$I_C = -10\mu A, I_E = 0$	-60	--	--	V
$V_{(BR)CEO}^*$	Collector-emitter breakdown voltage	$I_C = -10mA, I_B = 0$	-60	--	--	V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	$I_E = -10\mu A, I_C = 0$	-5	--	--	V
I_{CBO}	Collector cut-off current	$V_{CB} = -50V, I_E = 0$	--	--	-20	nA
I_{EBO}	Emitter cut-off current	$V_{EB} = -3V, I_C = 0$	--	--	-10	nA
I_{CEX}	Collector cut-off current	$V_{CES} = -30V, V_{BE(off)} = -0.5V$	--	--	-50	nA
h_{FE1}	DC current gain	$V_{CE} = -10V, I_C = -150mA$	100	--	300	
h_{FE2}		$V_{CE} = -10V, I_C = -0.1mA$	75	--	--	
h_{FE3}		$V_{CE} = -10V, I_C = -1mA$	100	--	--	
h_{FE4}		$V_{CE} = -10V, I_C = -10mA$	100	--	--	
h_{FE5}		$V_{CE} = -10V, I_C = -500mA$	50	--	--	
$V_{CE(sat)}^*$	Collector-emitter saturation voltage	$I_C = -150mA, I_B = -15mA$	--	--	-0.4	V
$V_{CE(sat)}^*$		$I_C = -500mA, I_B = -50mA$	--	--	-1.6	V
$V_{BE(sat)}^*$	Base -emitter saturation voltage	$I_C = -150mA, I_B = -15mA$	--	--	-1.3	V
$V_{BE(sat)}^*$		$I_C = -500mA, I_B = -50mA$	--	--	-2.6	V
f_T	Transition frequency	$V_{CE} = -20V, I_C = -50mA, f = 100MHz$	200	--	--	MHz
t_d	Transition frequency	$V_{CE} = -30V, I_C = -150mA, I_{B1} = -15mA$	--	--	10	ns
t_r	Rise time		--	--	25	ns
t_s	Storage time	$V_{CE} = -6V, I_C = -150mA,$	--	--	225	ns
t_f	Fall time	$I_{B1} = - I_{B2} = -15mA$	--	--	60	ns

* pulse test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2.0\%$.

Typical Operating Characteristics

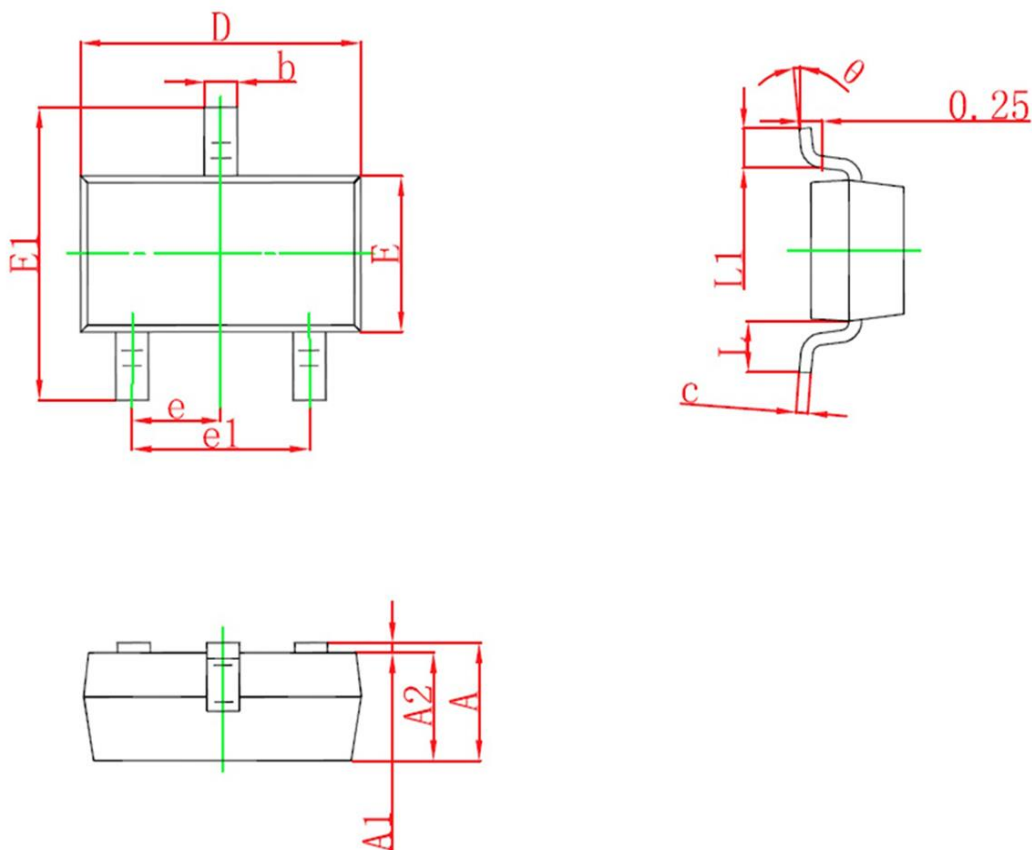




Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MMBT2907A	SOT-23	2F	3,000	45,000	180,000	7"reel

SOT-23 Package information



Symbol	Dimensions in Millimeters(mm)		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
E1	2.250	2.550	0.088	0.100
E	1.200	1.400	0.047	0.055
e	0.950TYP		0.037TYP	
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°