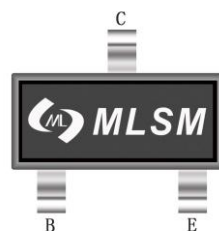
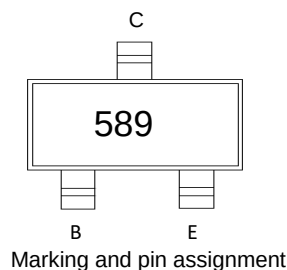
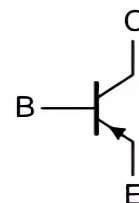


Features

- High current surface mount PNP silicon switching transistor for Load management in portable applications



SOT-23 top view



Schematic diagram



Halogen-Free

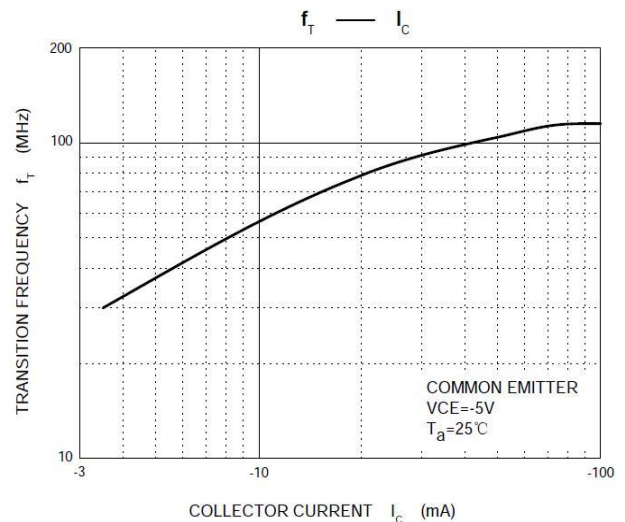
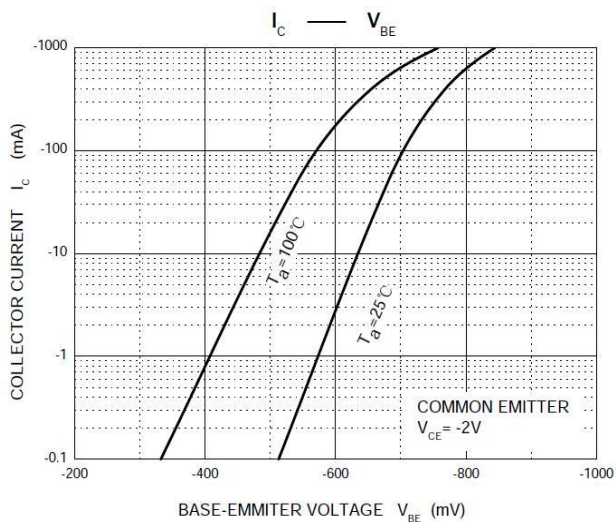
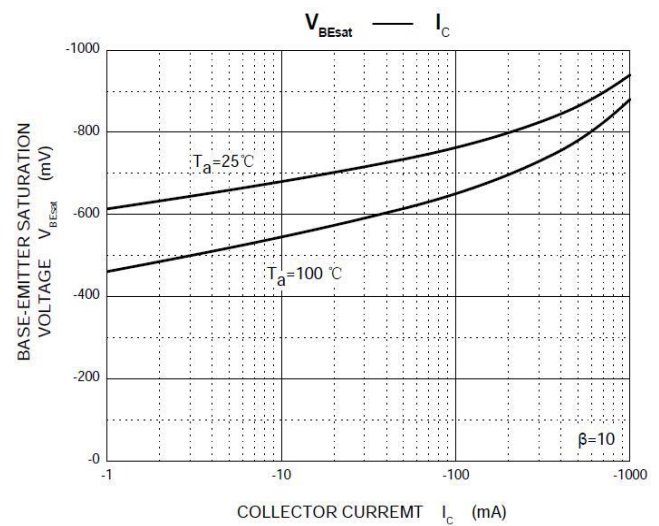
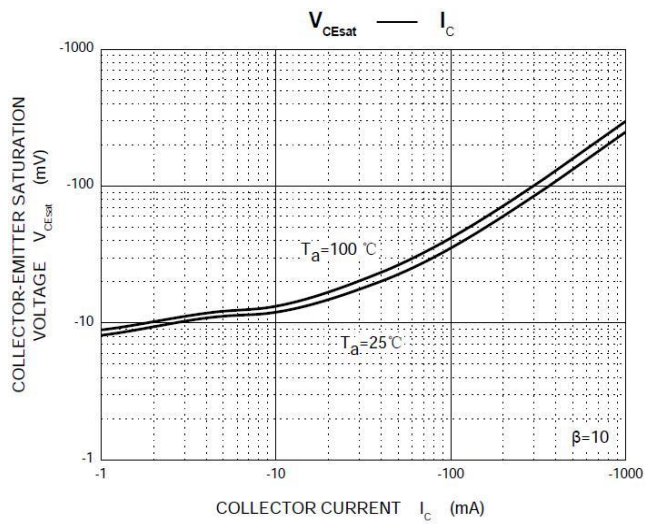
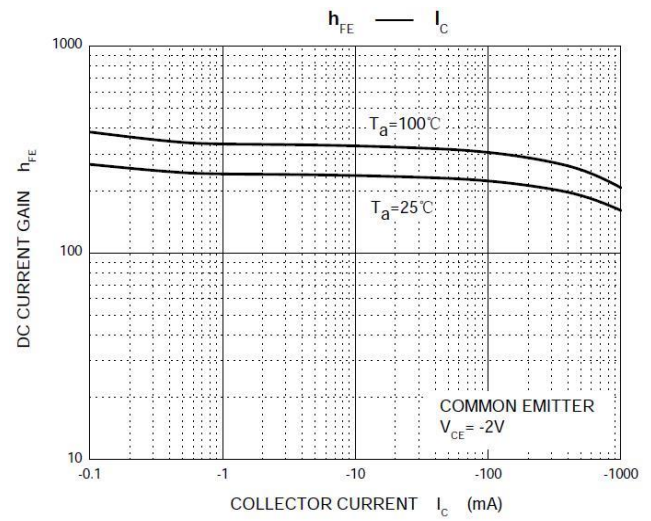
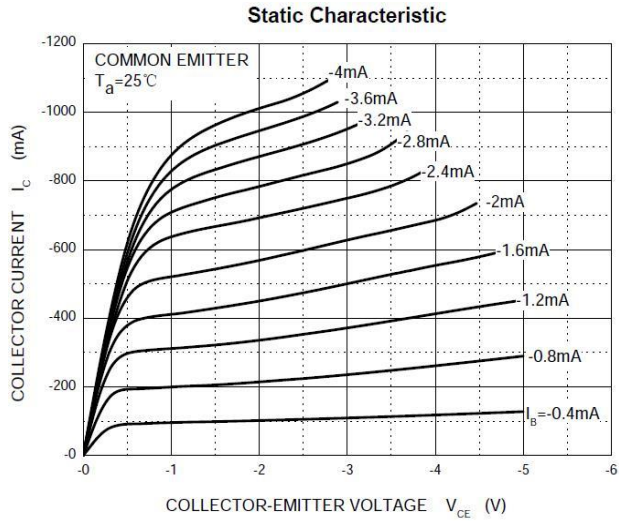
Maximum Ratings (Ta=25°C unless otherwise noted)

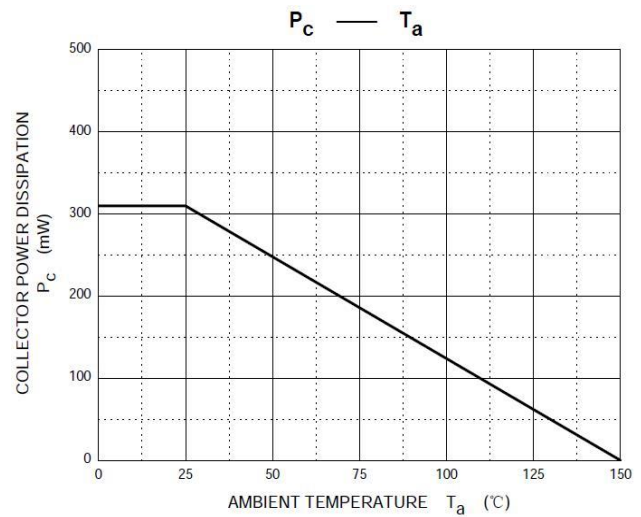
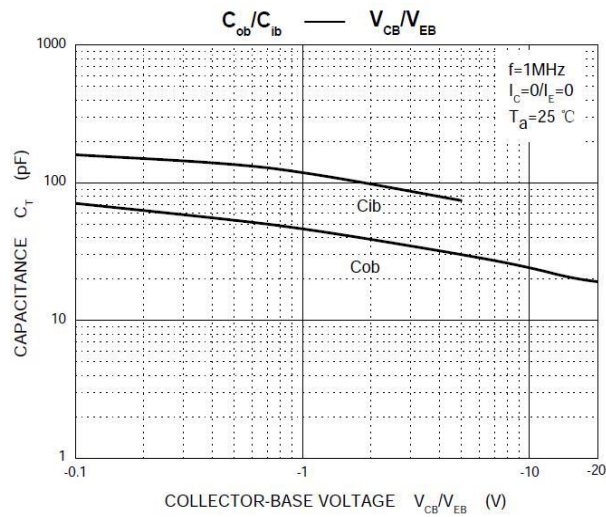
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-50	V
V_{CEO}	Collector-Emitter Voltage	-30	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current	-1	A
P_C	Collector Power Dissipation	310	mW
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	403	°C/W
T_J, T_{STG}	Operating and Storage 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	$I_C = -100\mu A, I_E = 0$	-50	--	--	V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C = -10mA, I_B = 0$	-30	--	--	V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	$I_E = -100\mu A, I_C = 0$	-5	--	--	V
I_{CBO}	Collector cut-off current	$V_{CB} = -30V, I_E = 0$	--	--	-0.1	μA
I_{CES}	Collector-emitter cut-off current	$V_{CES} = -30V$	--	--	-0.1	μA
I_{EBO}	Emitter cut-off current	$V_{EB} = -4V, I_C = 0$	--	--	-0.1	μA
h_{FE1}	DC current gain	$V_{CE} = -2V, I_C = -1mA$	100	--	--	
h_{FE2}		$V_{CE} = -2V, I_C = -500mA$	100	--	300	
h_{FE3}		$V_{CE} = -2V, I_C = 1A$	80	--	--	
h_{FE4}		$V_{CE} = -2V, I_C = -2A$	40	--	--	
$V_{CE(sat)1}$	Collector-emitter saturation voltage	$I_C = -500mA, I_B = -50mA$	--	--	-0.25	V
$V_{CE(sat)2}$		$I_C = -1A, I_B = -100mA$	--	--	-0.3	V
$V_{CE(sat)3}$		$I_C = -2A, I_B = -200mA$	--	--	-0.65	V
$V_{BE(sat)}$	Base-emitter saturation voltage	$I_C = -1A, I_B = -100mA$	--	--	-1.2	V
$V_{BE(on)}$	Base-emitter voltage	$V_{CE} = -2V, I_C = -1A$	--	--	-1.1	V
f_T	Transition frequency	$V_{CE} = -5V, I_C = -100mA, f = 100MHz$	100	--	--	MHz
C_{ob}	Collector output capacitance	$f = 1MHz$	--	--	15	pF

Typical Operating Characteristics

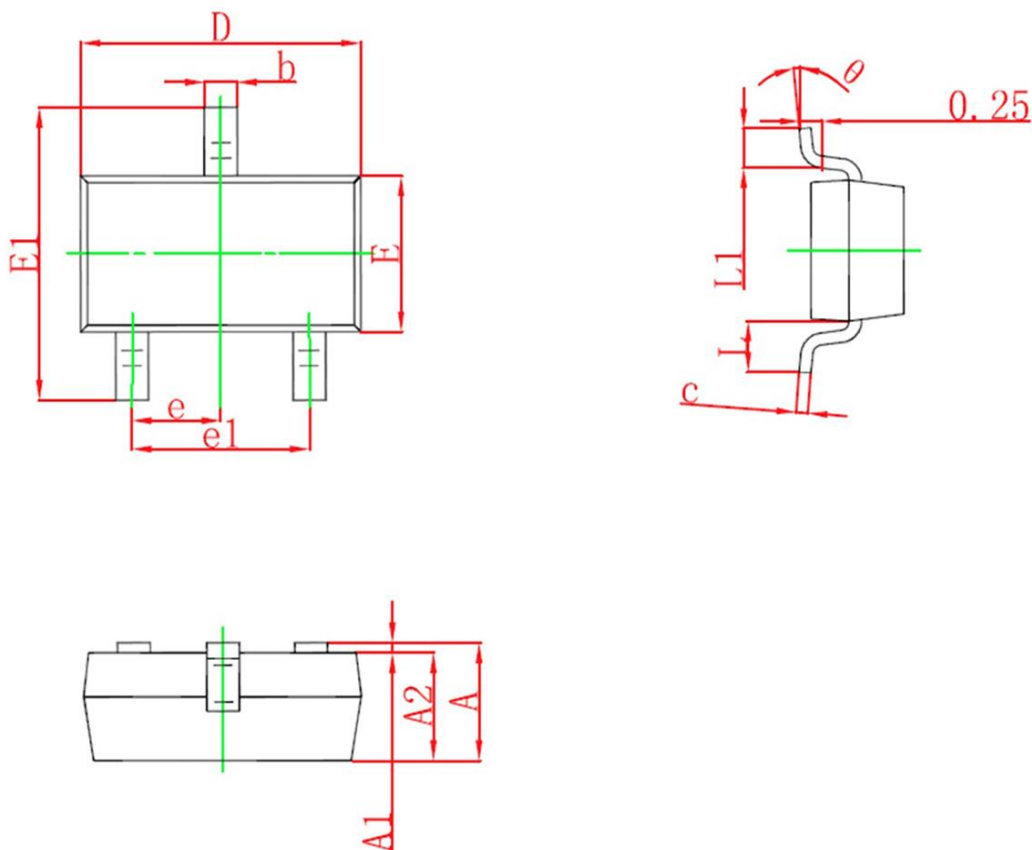




Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MMBT589	SOT-23	589	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°