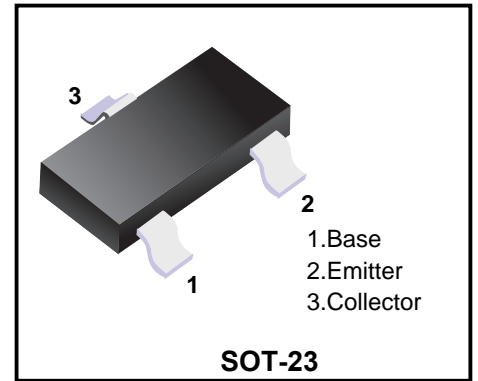


NPN Transistor



FEATURES

➤ High current gain

Marking Code	
MMBTA28	3SS

MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

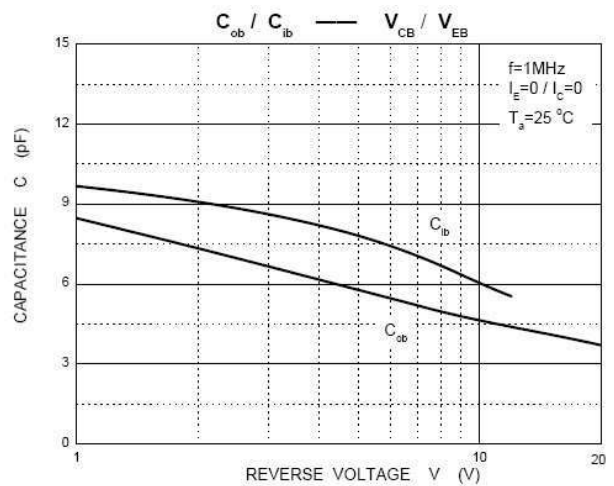
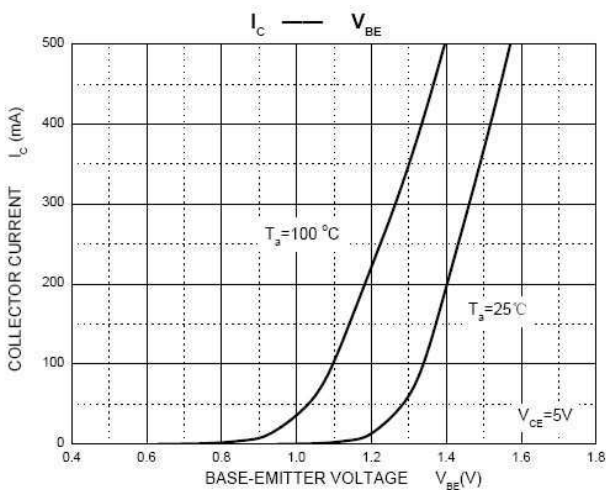
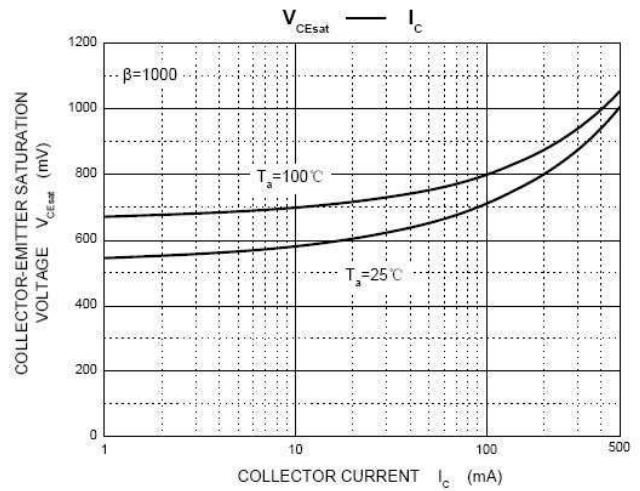
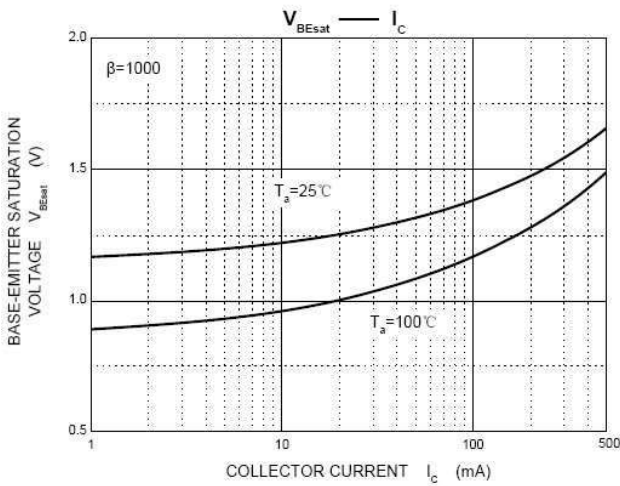
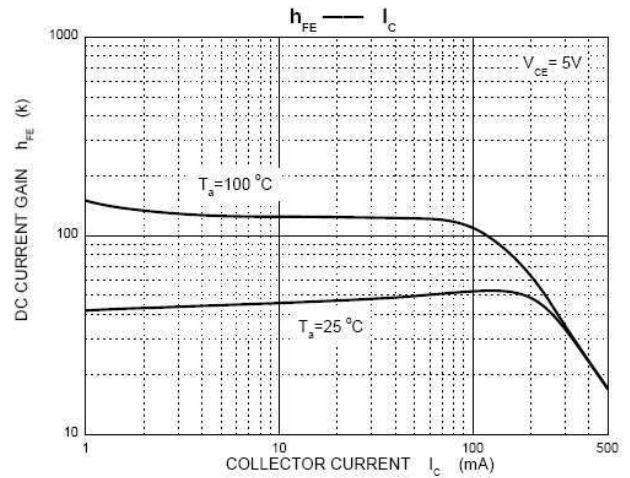
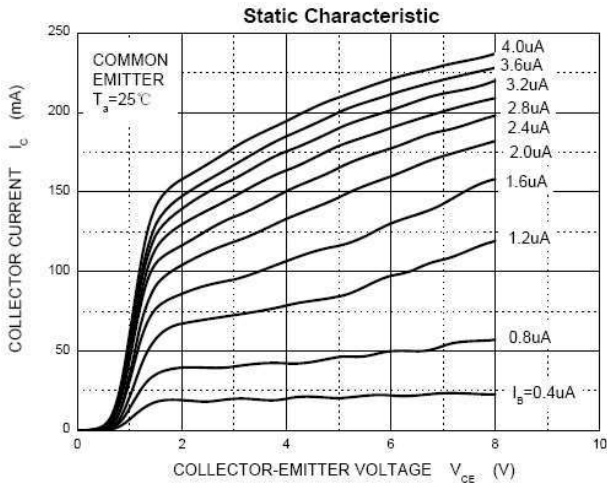
Parameter	Symbol	Value	Unit
Collector-base voltage	V_{CBO}	80	V
Collector-emitter voltage	V_{CEO}	80	V
Emitter-base voltage	V_{EBO}	12	V
Collector continuous current	I_C 1)	500	mA
Collector power dissipation	P_C 1)	200	mW
Thermal resistance from junction to ambient	$R_{\theta JA}$ 2)	625	°C/W
Operating junction and storage temperature range	T_j, T_{stg}	-55 ~ 150	°C

ELECTRICAL CHARACTERISTICS (Tj = 25°C unless otherwise specified)

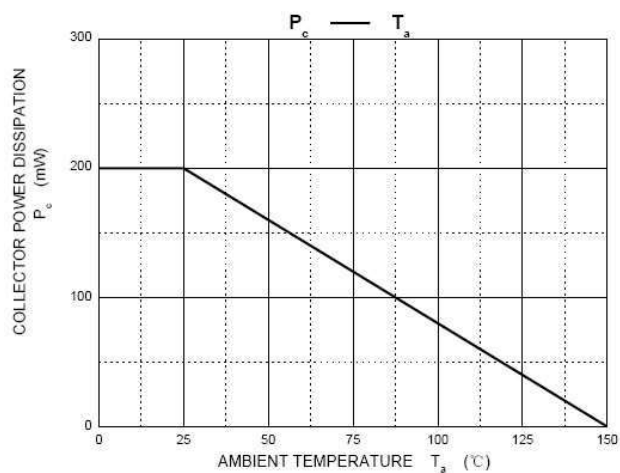
Parameter	Symbol	Test condition	Min	Typ	M M	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = 100\mu A, I_E = 0A$	80	-	-	V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 0.1mA, I_B = 0A$	80	-	-	V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 10\mu A, I_C = 0A$	12	-	-	V
Collector-emitter cut-off current	I_{CES}	$V_{CE} = 60V, V_{BE} = 0V$	-	-	0.1	μA
Collector-base cut-off current	I_{CBO}	$V_{CB} = 60V, I_E = 0A$	-	-	0.5	μA
Emitter-base cut-off current	I_{EBO}	$V_{EB} = 10V, I_C = 0A$	-	-	0.1	μA
DC current gain	$h_{FE(1)}$ *	$V_{CE} = 5V, I_C = 10mA$	10	-	-	K
	$h_{FE(2)}$ *	$V_{CE} = 5V, I_C = 100mA$	10	-	-	K
Collector-emitter saturation voltage	$V_{CE(sat)1}$ *	$I_C = 10mA, I_B = 0.01mA$	-	-	1.2	V
	$V_{CE(sat)2}$ *	$I_C = 100mA, I_B = 0.1mA$	-	-	1.5	V
Base-emitter voltage	V_{BE} *	$I_C = 100mA, V_{CE} = 5V$	-	-	2	V
Collector output capacitance	C_{ob}	$V_{CB} = 1V, I_E = 0, f = 1MHz$	-	-	8	pF
Transition frequency	f_T	$V_{CE} = 5V, I_C = 10mA, f = 100MHz$	125	-	-	MHz

*Pulse test: pulse width $\leq 300\mu s$, duty cycle $\leq 2.0\%$.

Typical Characteristics



Typical Characteristics



Ordering information

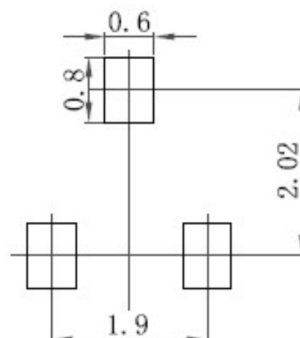
Package	Packing Description	Base Quantity	Packing Quantity
SOT-23	Tape/Reel,7"reel	3000pcs/Reel	24000PCS/Box 120000PCS/Carton

Package Dimensions

SOT-23

Dim.	Millimeter (mm)		mil	
	Min.	Max.	Min.	Max.
A	0.9	1.15	35	45
A1	0.1		3.9	
bp	0.38	0.48	15	19
C	0.09	0.15	3.54	5.9
D	2.8	3.0	110	118
E	1.2	1.4	47	55
E	1.9		75	
E1	0.95		37	
HE	2.1	2.55	83	100
Lp	0.15	0.45	5.9	18
Q	0.45	0.55	18	22
v	0.2		7.9	
W	0.1		4	

The recommended mounting pad size



Disclaimer

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