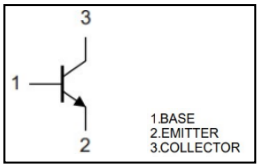
DATA SHEET(Preliminary)

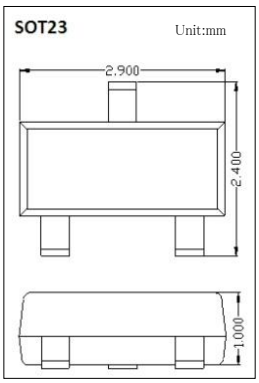
MMBTA05

- ◇ Epitaxial Planar Die Construction
- ◇ Ideal for Medium Power Amplification and Switching
- ◇ RoHS compliant / Green EMC
- ◇ Reduces Board Space and Component Count
- ◇ Epoxy Meets UL 94 V-0 Flammability Rating

Device	Marking
MMBTA05	**1H**

Equivalent Circuit





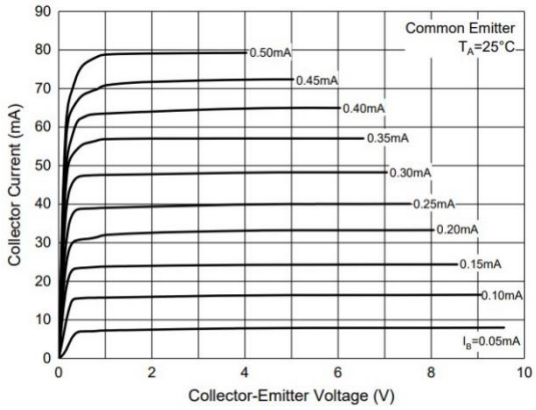
Maximum Ratings (Ta = 25 ℃)

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	60	V
V_{EBO}	Emitter-Base Voltage	4	V
I_C	Collector Current	500	mA
P_D	Power Dissipation	300	mW
T_j	Junction Temperature	-55～+150	℃
T_{stg}	Storage Temperature	-55～+150	℃
$R_{\theta JA}$	Thermal Resistance - Junction-to-Ambient (Note 1)	417	℃/W

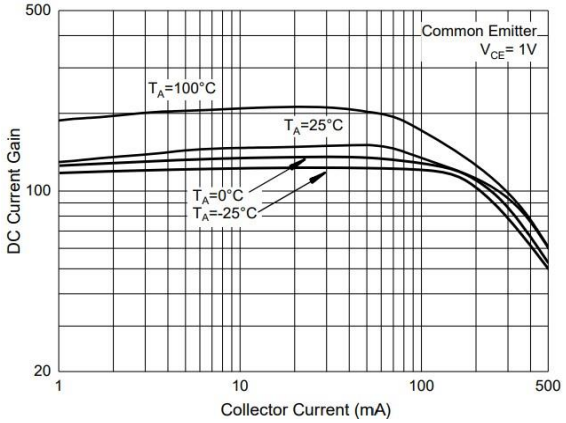
Electrical Characteristics （Ta = 25 ℃）

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
I_{CBO}	Collector-Base Cutoff Current	V_{CB} = 60 V, I_E = 0			0.1	μA
I_{CEO}	Collector-Emitter Cutoff Current	V_{CE} = 60 V, I_B = 0			1	μA
I_{EBO}	Emitter-Base Cutoff Current	V_{EB} = 3.0 V, I_C = 0			0.1	mA
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C = 100 μA, I_E = 0	60			V
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	I_C = 1.0mA, I_B = 0	60			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E = 100 μA, I_C = 0	4			V
$h_{FE(1)}$	DC Current Gain	V_{CE} = 1 V, I_C = 10 mA	100		400	
$h_{FE(2)}$		V_{CE} = 1 V, I_C = 100 mA	100			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C = 100 mA, I_B = 10 mA			0.25	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C = 100 mA, I_B = 10 mA			1.2	V
f_T	Transition Frequency	V_{CE}=2V, I_C=10mA, f=100MHz	100			MHz

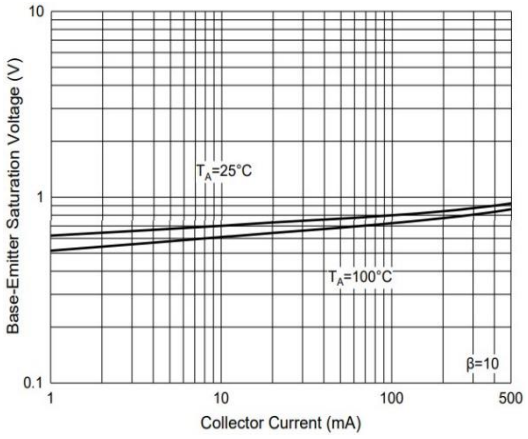
Typical Characteristics



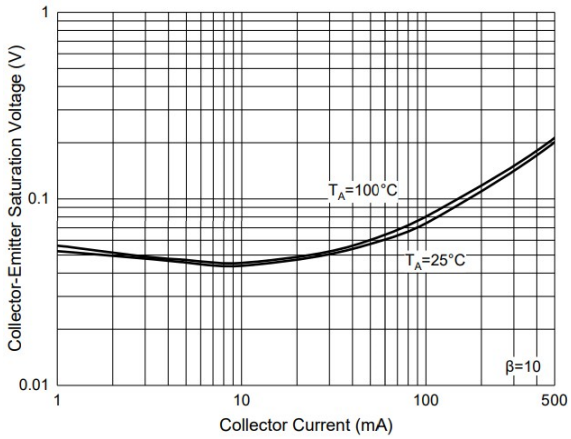
Static Characteristics



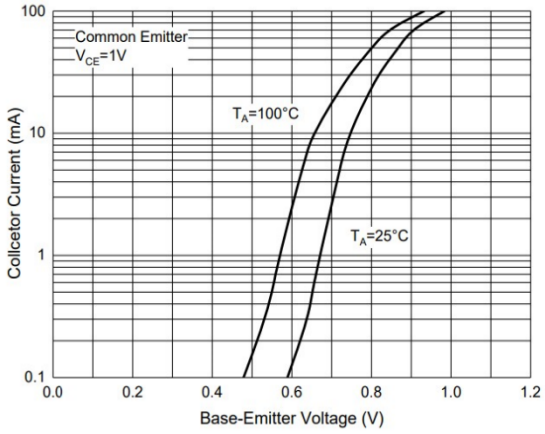
DC Current Gain Characteristics



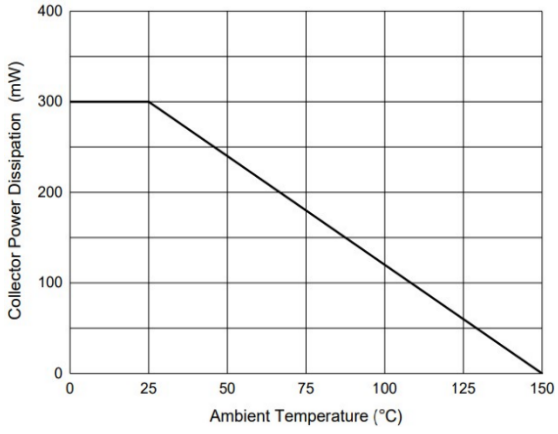
Base-Emitter Saturation Voltage Characteristics



Collector-Emitter Saturation Voltage Characteristics



Base-Emitter Voltage Characteristics



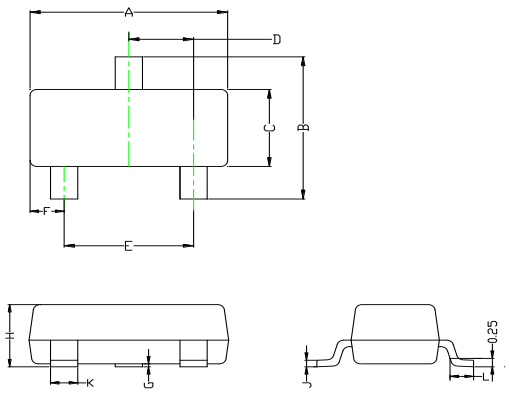
Collector Power Derating Curve

Ordering Information

Device	Package	Shipping	Tape wide	Emboss pitch	Tape specification	Notes
MMBTA05	SOT23	Tape & Reel 3000pcs /7" Reel	8mm	4mm	Conductive	

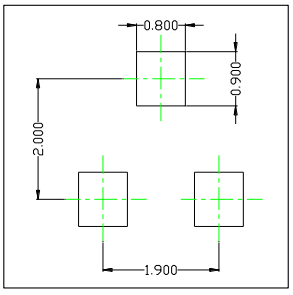
Package Dimensions

Package outline : SOT23



Symbol	Dimensions in mm	
	Min.	Max.
A	2.800	3.040
B	2.100	2.640
C	1.200	1.400
D	0.890	1.030
E	1.780	2.050
F	0.450	0.600
G	0.013	0.100
H	0.900	1.110
J	0.085	0.180
K	0.370	0.510
L	0.300	0.500

SOT23 Package Outline



Land Pattern Recommendation

Notice:

1.Lead plating: Pb free solder
2.Lead thickness includes solder plating
3.Lead frame: CAC-5
4.Other Tolerance: ±0.05