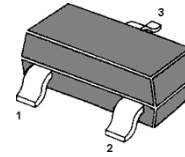


MMBTSA2018 PNP Silicon Epitaxial Planar Transistor

Low Frequency Transistor
for switching and muting applications.

Features:

- *A collector current is large.
- *Collector saturation voltage is low.
- $V_{CE(sat)}$: 250mV(Max.) at $-I_C=200mA/-I_B=10mA$



1.Base 2.Emitter 3.Collector
SOT-23 Plastic Package

MARKING: BW

Absolute Maximum Ratings ($T_a = 25\text{ }^\circ\text{C}$)

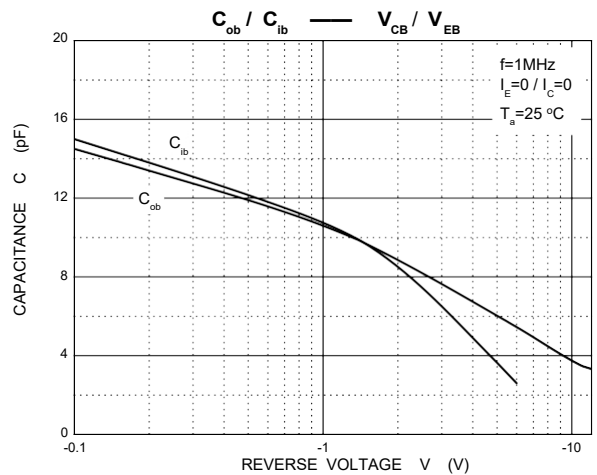
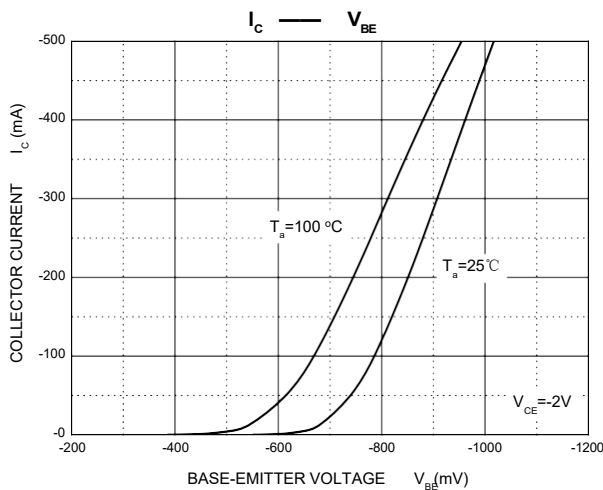
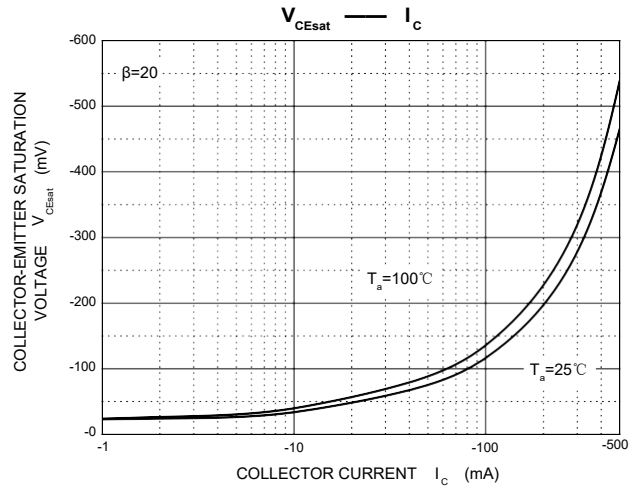
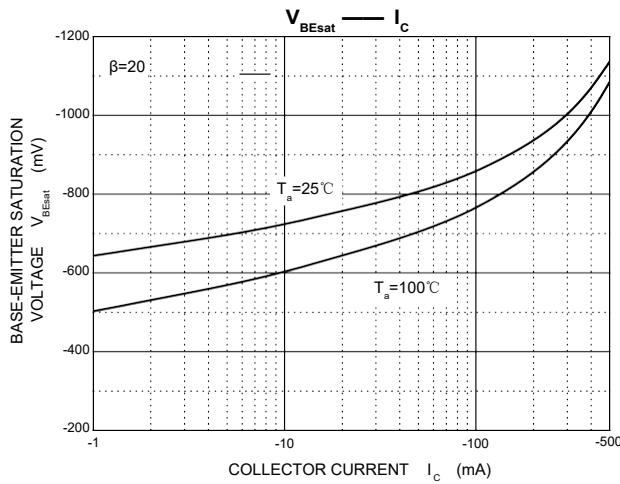
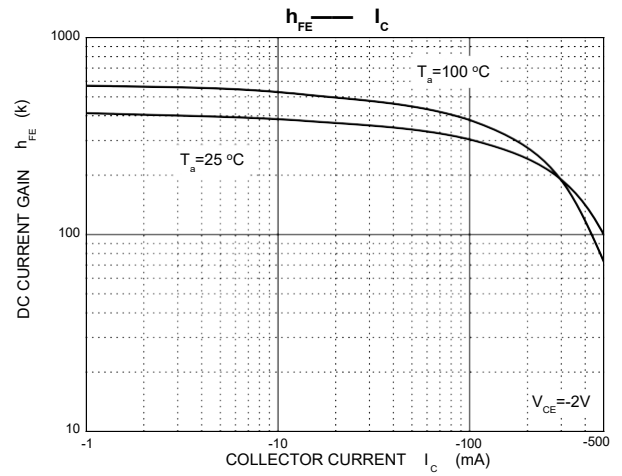
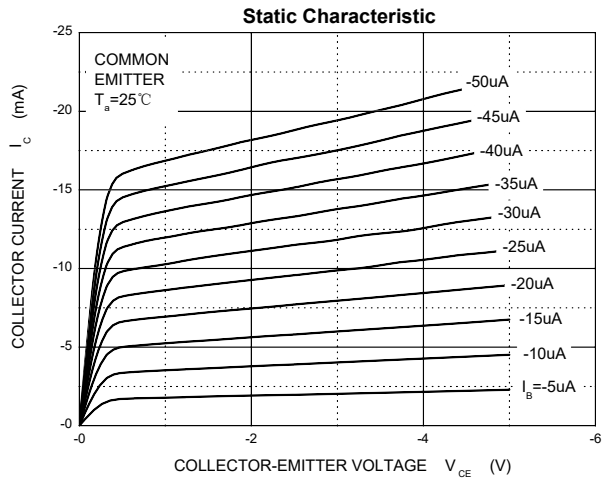
| Parameter | Symbol | Value | Unit |
|-----------------------------|----------------|-------------|------------------|
| Collector Base Voltage | $-V_{CBO}$ | 15 | V |
| Collector Emitter Voltage | $-V_{CEO}$ | 12 | V |
| Collector Current | $-I_C$ | 500 | mA |
| | $-I_{CP}^{1)}$ | 1 | A |
| Collector Power Dissipation | P_{tot} | 200 | mW |
| Junction Temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage Temperature Range | T_s | -55 to +150 | $^\circ\text{C}$ |

1) Single pulse, $PW=1ms$

Characteristics at $T_{amb}=25\text{ }^\circ\text{C}$

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|--|----------------|------|------|------|------|
| DC Current Transfer Ratio at $-I_C=10mA, -V_{CE}=2V$ | h_{FE} | 270 | - | 680 | - |
| Collector Cutoff Current at $-V_{CB}=15V$ | $-I_{CBO}$ | - | - | 100 | nA |
| Collector Base Breakdown Voltage at $-I_C=10\mu A$ | $-V_{(BR)CBO}$ | 15 | - | - | V |
| Collector Emitter Breakdown Voltage at $-I_C=1mA$ | $-V_{(BR)CEO}$ | 12 | - | - | V |
| Emitter Base Breakdown Voltage at $-I_E=10\mu A$ | $-V_{(BR)EBO}$ | 6 | - | - | V |
| Collector Emitter Saturation Voltage at $-I_C=200mA, -I_B=10mA$ | $-V_{CE(sat)}$ | - | - | 250 | mV |
| Transition Frequency at $-V_{CE}=2V, -I_E=10mA, f=100MHz$ | f_T | - | 260 | - | MHz |
| Output Capacitance at $-V_{CB}=10V, f=1MHz$ | C_{ob} | - | 6.5 | - | pF |

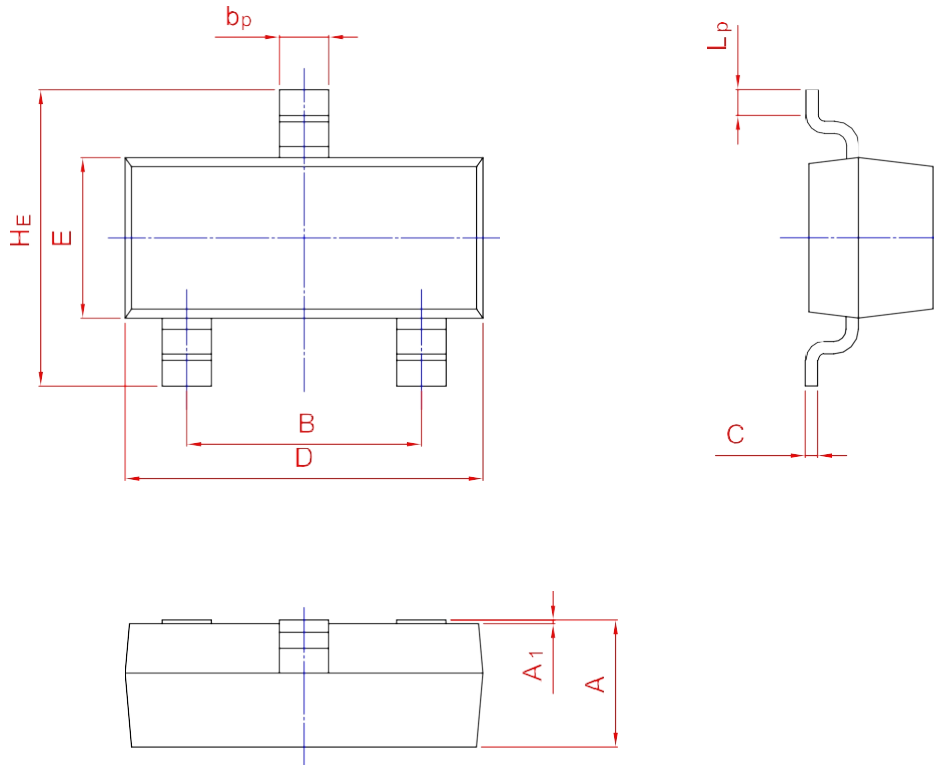
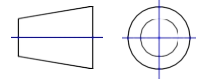
Typical Characteristics



PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



| UNIT | A | B | b _p | C | D | E | H _E | A ₁ | L _p |
|------|------|------|----------------|------|------|------|----------------|----------------|----------------|
| mm | 1.40 | 2.04 | 0.50 | 0.19 | 3.10 | 1.65 | 3.00 | 0.100 | 0.50 |
| | 0.95 | 1.78 | 0.35 | 0.08 | 2.70 | 1.20 | 2.20 | 0.013 | 0.20 |