



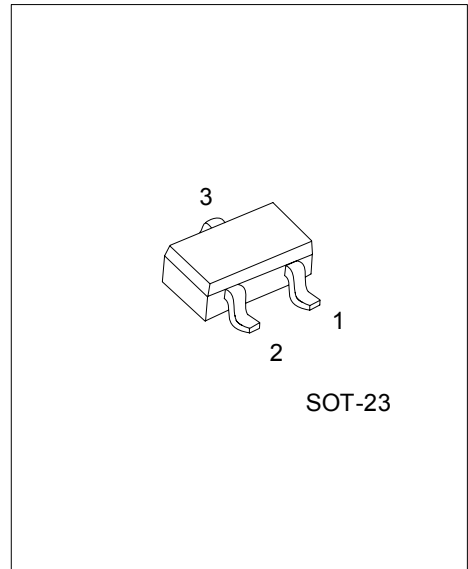
MMBTA06

NPN SILICON TRANSISTOR

AMPLIFIER TRANSISTOR

FEATURES

- * Collector-Emitter Voltage: $V_{CE0}=80V$
- * Collector Dissipation: $P_D=350mW$



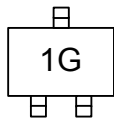
*Pb-free plating product number: MMBTA06L

ORDERING INFORMATION

| Order Number | | Package | Pin Assignment | | | Packing |
|---------------|-------------------|---------|----------------|---|---|-----------|
| Normal | Lead Free Plating | | 1 | 2 | 3 | |
| MMBTA06-AE3-R | MMBTA06L-AE3-R | SOT-23 | E | B | C | Tape Reel |

| | |
|--|---|
| <p>MMBTA06L-AE3-R</p> <ul style="list-style-type: none"> (1) Packing Type (2) Package Type (3) Lead Plating | <ul style="list-style-type: none"> (1) R: Tape Reel (2) AE3: SOT-23 (3) L: Lead Free Plating, Blank: Pb/Sn |
|--|---|

MARKING



■ ABSOLUTE MAXIMUM RATINGS ($T_A=25$)

| PARAMETER | SYMBOL | RATINGS | UNIT |
|----------------------------------|-----------|------------|------|
| Collector-Base Voltage | V_{CBO} | 80 | V |
| Collector-Emitter Voltage | V_{CEO} | 80 | V |
| Emitter-Base Voltage | V_{EBO} | 4 | V |
| Collector Current - Continuous | I_C | 500 | mA |
| Total Device Dissipation(Note 1) | P_D | 350 | mW |
| Derate Above 25 | | 2.8 | mW/ |
| Junction Temperature | T_J | +150 | |
| Storage Temperature | T_{STG} | -55 ~ +150 | |

Note 1. Device mounted on FR-4=1.6×1.6×0.06 in

2. Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ THERMAL DATA

| PARAMETER | SYMBOL | MAX | UNIT |
|---|---------------|-----|------|
| Thermal Resistance, Junction to Ambient | θ_{JA} | 357 | /W |

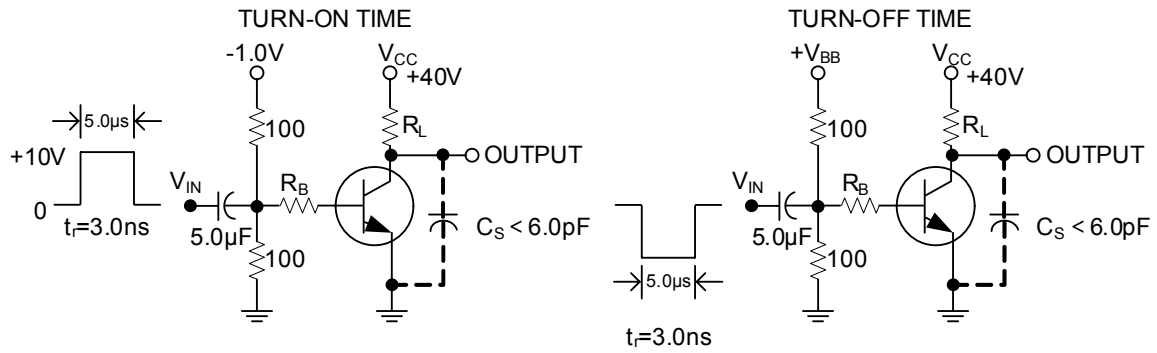
■ ELECTRICAL CHARACTERISTICS ($T_A=25$, unless otherwise specified)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|--|---------------|---|------------|-----|------|---------|
| OFF CHARACTERISTICS | | | | | | |
| Collector-Emitter Breakdown Voltage (Note 1) | BV_{CEO} | $I_C=1.0mA, I_B=0$ | 80 | | | V |
| Emitter-Base Breakdown Voltage | BV_{EBO} | $I_E=100\mu A, I_C=0$ | 4 | | | V |
| Collector Cutoff Current | I_{CES} | $V_{CE}=60V, I_B=0$ | | | 0.1 | μA |
| Collector Cutoff Current | I_{CBO} | $V_{CB}=80V, I_E=0$ | | | 0.1 | μA |
| ON CHARACTERISTICS | | | | | | |
| DC Current Gain | h_{FE} | $I_C=10mA, V_{CE}=1V$ $I_C=100mA, V_{CE}=1V$ | 100 100 | | | |
| Collector-Emitter Saturation Voltage | $V_{CE(SAT)}$ | $I_C=100mA, I_B=10mA$ | | | 0.25 | V |
| Base-Emitter on Voltage | $V_{BE(ON)}$ | $I_C=100mA, V_{CE}=1V$ | | | 1.2 | V |
| SMALL-SIGNAL CHARACTERISTICS | | | | | | |
| Current Gain Bandwidth Product (Note2) | f_T | $I_C=10mA, V_{CE}=2V,$ $f=100MHz$ | 100 | | | MHz |

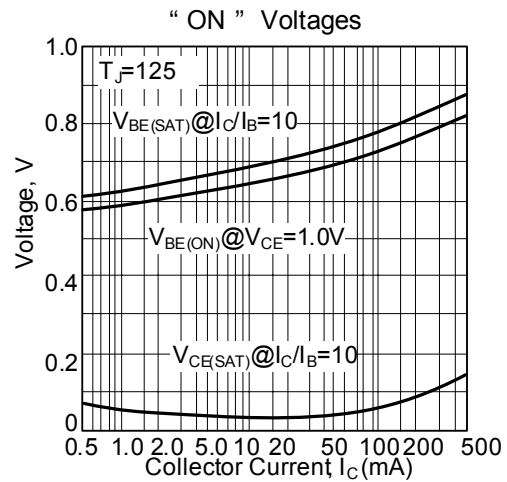
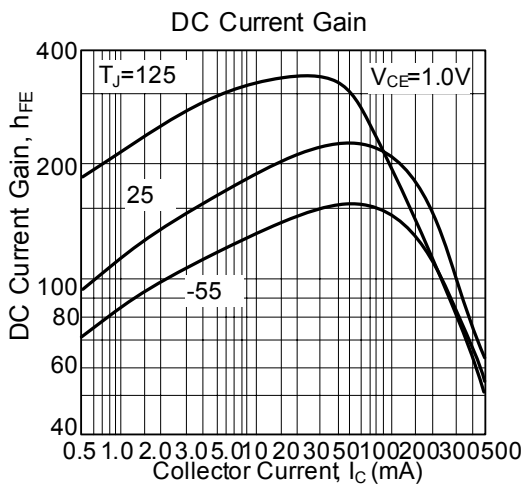
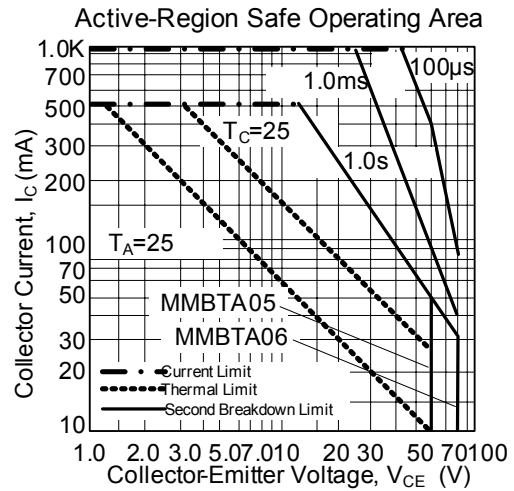
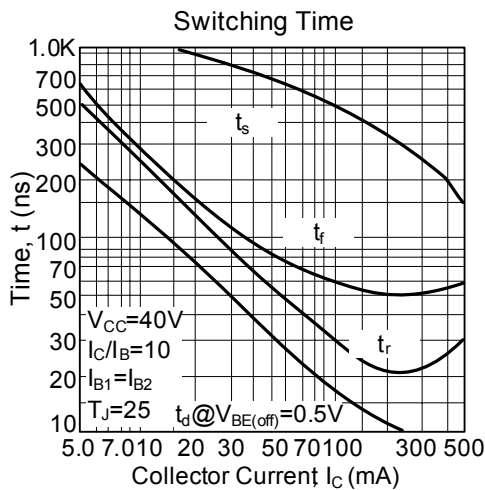
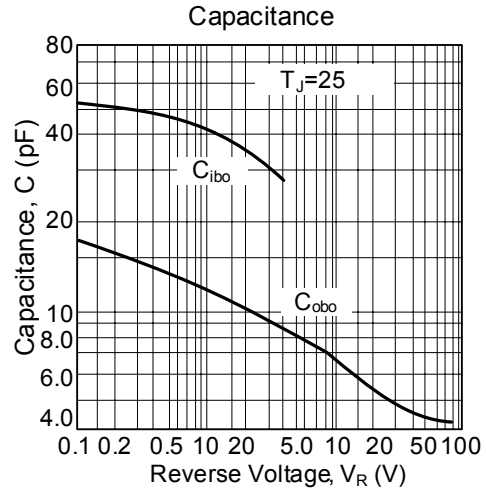
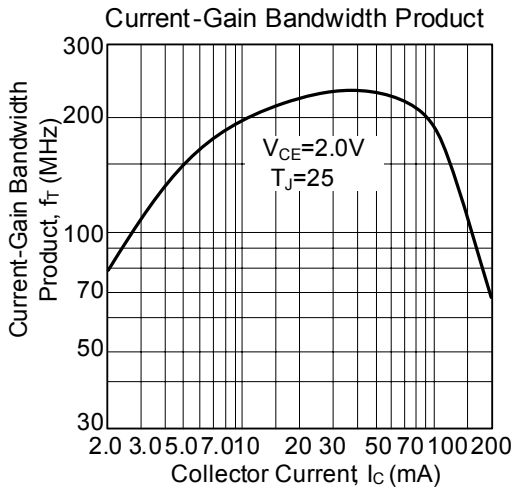
Note 1: Pulse test: $PW \leq 300\mu s$, Duty Cycle $\leq 2\%$

- 2: f_T is defined as the frequency at which I_{hfe} extrapolates to unity.

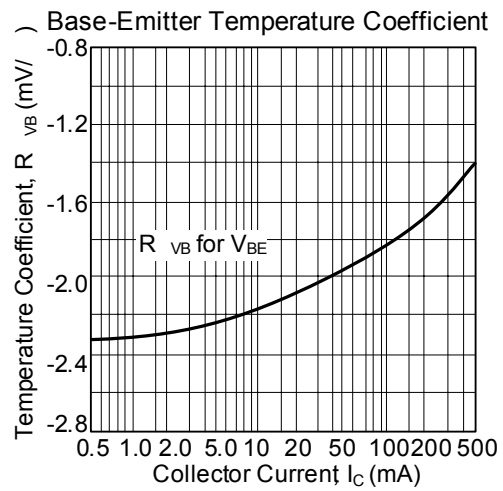
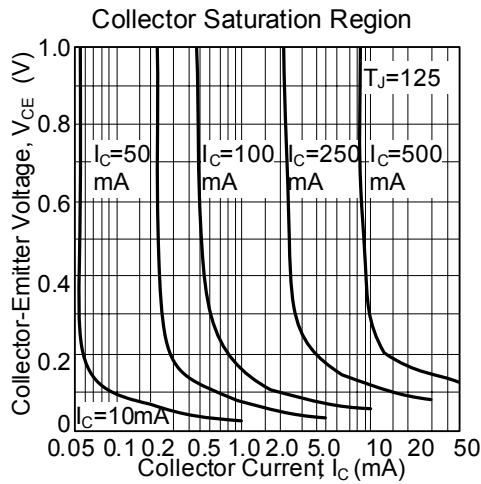
SWITCHING TIME TEST CIRCUITS



TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)



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