



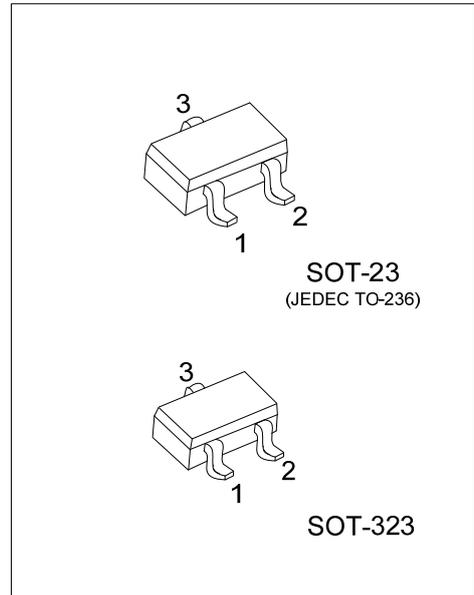
MMBTA55

PNP SILICON TRANSISTOR

AMPLIFIER TRANSISTOR

FEATURES

* Collector-Emitter Voltage: $V_{CE0}=60V$



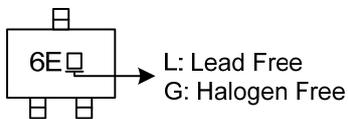
ORDERING INFORMATION

| Ordering Number | | Package | Pin Assignment | | | Packing |
|-----------------|----------------|---------|----------------|---|---|-----------|
| Lead Free | Halogen Free | | 1 | 2 | 3 | |
| MMBTA55L-AE3-R | MMBTA55G-AE3-R | SOT-23 | B | E | C | Tape Reel |
| MMBTA55L-AL3-R | MMBTA55G-AL3-R | SOT-323 | B | E | C | Tape Reel |

Note: Pin Assignment: B: Base E: Emitter C: Collector

| | |
|---|---|
| <p>MMBTA55G-AE3-R</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Green Package</p> | <p>(1) R: Tape Reel</p> <p>(2) AE3: SOT-23, AL3: SOT-323</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p> |
|---|---|

MARKING



■ ABSOLUTE MAXIMUM RATING ($T_A=25^\circ\text{C}$, unless otherwise specified)

| PARAMETER | SYMBOL | RATINGS | UNIT | |
|--------------------------------|-----------|---------------------------------|------------------|----------------------|
| Collector-base voltage | V_{CBO} | 60 | V | |
| Collector-emitter voltage | V_{CEO} | 60 | V | |
| Emitter-base voltage | V_{EBO} | 4 | V | |
| Collector current - Continuous | I_C | 500 | mA | |
| Total device dissipation | P_D | $T_A=25^\circ\text{C}$ | 350 | mW |
| | | Derate above 25°C | 2.8 | mW/ $^\circ\text{C}$ |
| Junction Temperature | T_J | +125 | $^\circ\text{C}$ | |
| Storage Temperature | T_{STG} | -40 ~ +150 | $^\circ\text{C}$ | |

Note: 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 CHARACTERISTICS

| PARAMETER | SYMBOL | RATINGS | UNIT |
|---------------------|---------------|---------|---------------------------|
| Junction to Ambient | θ_{JA} | 357 | $^\circ\text{C}/\text{W}$ |

Note: $R_{\theta JA}$ is measured with the device soldered into a typical printed circuit board.

■ ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$, unless otherwise specified)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|--|---------------|---|-----|-----|------|---------------|
| OFF CHARACTERISTICS | | | | | | |
| Collector-emitter breakdown voltage (note 1) | $V_{(BR)CEO}$ | $I_C=1.0\text{mA}, I_B=0$ | 60 | | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E=100\mu\text{A}, I_C=0$ | 4 | | | V |
| Collector cutoff current | I_{CES} | $V_{CE}=60\text{V}, I_B=0$ | | | 0.1 | μA |
| Collector cutoff current | I_{CBO} | $V_{CB}=60\text{V}, I_E=0$ | | | 0.1 | μA |
| ON CHARACTERISTICS | | | | | | |
| DC current gain | h_{FE} | $I_C=10\text{mA}, V_{CE}=1\text{V}$ | 100 | | | |
| | | $I_C=100\text{mA}, V_{CE}=1\text{V}$ | 100 | | | |
| Collector-emitter saturation voltage | $V_{CE(SAT)}$ | $I_C=100\text{mA}, I_B=10\text{mA}$ | | | 0.25 | V |
| Base-emitter on voltage | $V_{BE(ON)}$ | $I_C=100\text{mA}, V_{CE}=1\text{V}$ | | | 1.2 | V |
| SMALL-SIGNAL CHARACTERISTICS | | | | | | |
| Current gain bandwidth product (note 2) | f_T | $I_C=100\text{mA}, V_{CE}=1\text{V}, f=100\text{MHz}$ | 50 | | | MHz |

Notes: 1. Pulse test: $PW \leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$.

2. f_T is defined as the frequency at which $|h_{fe}|$ extrapolates to unity.

SWITCHING TIME TEST CIRCUIT

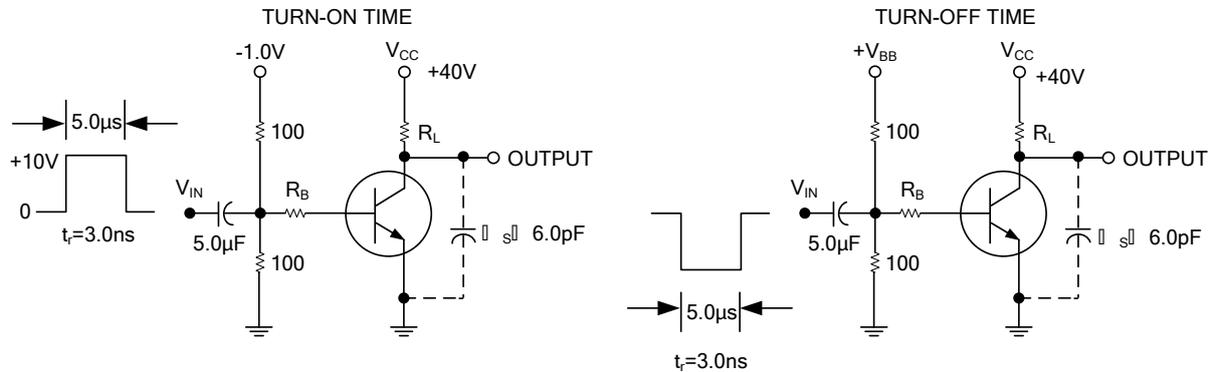


Figure 1. (Note: Total shunt capacitance of test jig and connectors for PNP test circuits, reverse all voltage polarities.)

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