



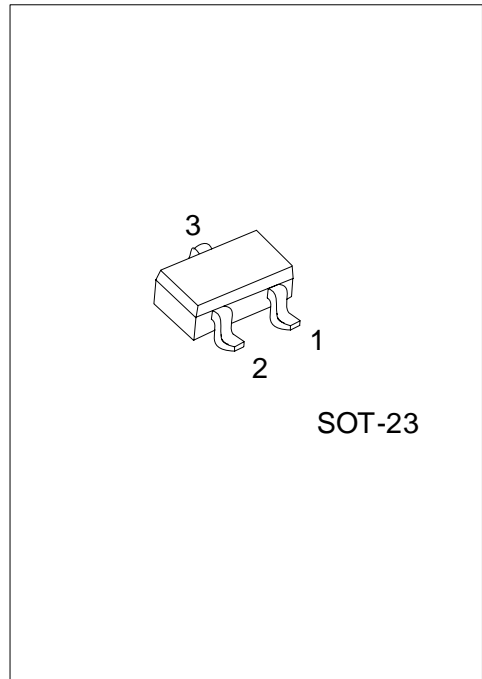
MMBT5551

NPN EPITAXIAL SILICON TRANSISTOR

HIGH VOLTAGE SWITCHING TRANSISTOR

FEATURES

- * High Collector-Emitter Voltage:
V_{CEO}=160V
- * High current gain



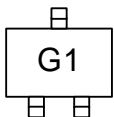
*Pb-free plating product number:MMBT5551L

ORDERING INFORMATION

| Order Number | | Package | Pin Assignment | | | Packing |
|--------------------|---------------------|---------|----------------|---|---|-----------|
| Normal | Lead Free Plating | | 1 | 2 | 3 | |
| MMBT5551-x-AE3-6-R | MMBT5551L-x-AE3-6-R | SOT-23 | E | B | C | Tape Reel |

| | |
|---|---|
| <p>MMBT5551L-x-AE3-6-R</p> <p>(1)Packing Type (2)Pin Assignment (3)Package Type (4)Rank (5)Lead Plating</p> | <p>(1) R: Tape Reel (2) refer to Pin Assignment (3) AE3: SOT-23 (4) x: refer to Classification of h_{FE} (5) L: Lead Free Plating, Blank: Pb/Sn</p> |
|---|---|

MARKING



MMBT5551

NPN EPITAXIAL SILICON TRANSISTOR

■ ABSOLUTE MAXIMUM RATINGS (Ta = 25 °C)

| PARAMETER | SYMBOL | RATINGS | UNIT |
|--|-----------------------------------|------------|------|
| Collector -Base Voltage | V _{CBO} | 180 | V |
| Collector -Emitter Voltage | V _{CEO} | 160 | V |
| Emitter -Base Voltage | V _{EBO} | 6 | V |
| DC Collector Current | I _C | 600 | mA |
| Power Dissipation | P _D | 350 | mW |
| Operating and Storage Junction Temperature | T _J , T _{STG} | -55 ~ +150 | |

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.

■ ELECTRICAL CHARACTERISTICS (Ta= 25 °C, unless otherwise specified)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|--------------------------------------|----------------------|--|----------------|-----|-------------|------|
| Collector-Base Breakdown Voltage | V _{CBO} | I _C =100μA, I _E =0 | 180 | | | V |
| Collector-Emitter Breakdown Voltage | V _{CEO} | I _C =1mA, I _B =0 | 160 | | | V |
| Emitter-Base Breakdown Voltage | V _{EBO} | I _E =10μA, I _C =0 | 6 | | | V |
| Collector Cut-off Current | I _{CBO} | V _{CB} =120V, I _E =0 | | | 50 | nA |
| Emitter Cut-off Current | I _{EBO} | V _{BE} =4V, I _C =0 | | | 50 | nA |
| DC Current Gain(note) | h _{FE} | V _{CE} =5V, I _C =1mA V _{CE} =5V, I _C =10mA V _{CE} =5V, I _C =50mA | 80 80 80 | 160 | 400 | |
| Collector-Emitter Saturation Voltage | V _{CE(SAT)} | I _C =10mA, I _B =1mA I _C =50mA, I _B =5mA | | | 0.15 0.2 | V |
| Base-Emitter Saturation Voltage | V _{BE(SAT)} | I _C =10mA, I _B =1mA I _C =50mA, I _B =5mA | | | 1 1 | V |
| Current Gain Bandwidth Product | f _T | V _{CE} =10V, I _C =10mA, f=100MHz | 100 | | 300 | MHz |
| Output Capacitance | C _{ob} | V _{CB} =10V, I _E =0, f=1MHz | | | 6.0 | pF |
| Noise Figure | N _F | I _C =0.25mA, V _{CE} =5V R _S =1kΩ, f=10Hz ~ 15.7kHz | | | 8 | dB |

Note: Pulse test: PW<300μs, Duty Cycle<2%

■ CLASSIFICATION OF h_{FE}

| RANK | A | B | C |
|-------|--------|---------|---------|
| RANGE | 80-170 | 150-240 | 200-400 |

TYPICAL CHARACTERISTICS

Fig.1 Collector Output Capacitance

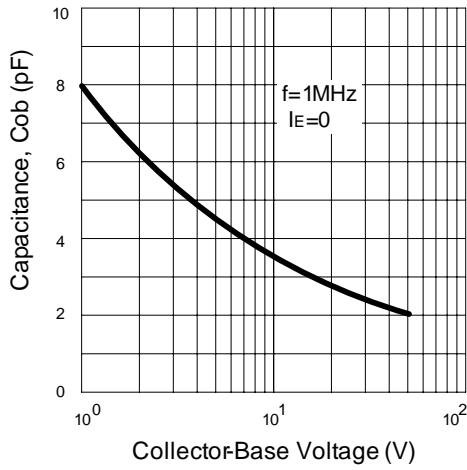


Fig.2 DC Current Gain

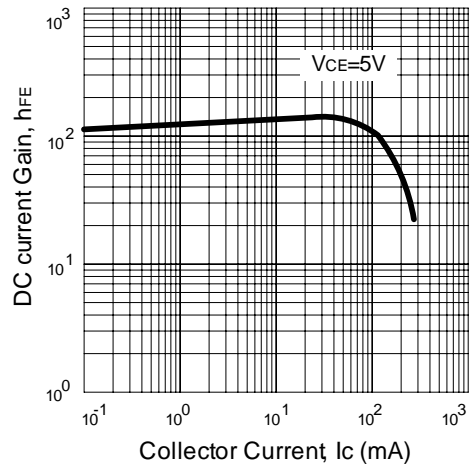


Fig.3 Base-Emitter on Voltage

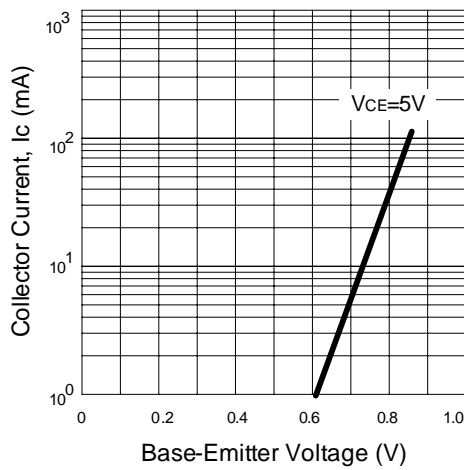


Fig.4 Saturation Voltage

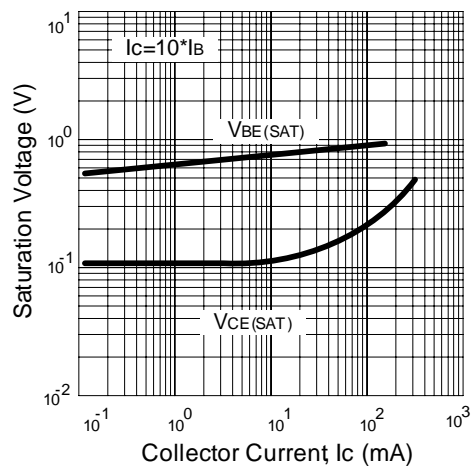
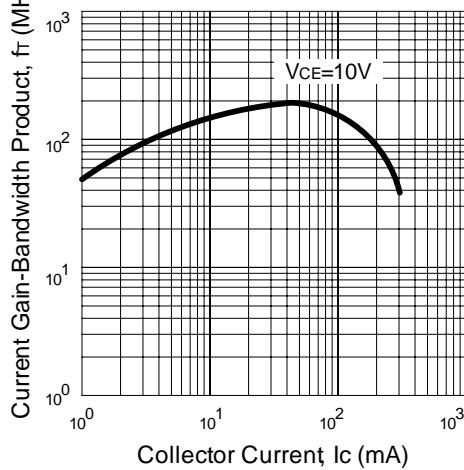


Fig.5 Current Gain-Bandwidth Product



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