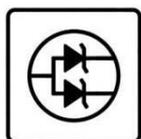


# MSKSEMI 美森科

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT



PLED

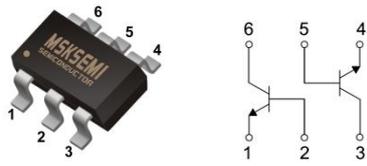
## MMDT5551

Product specification

**FEATURES**

- Epitaxial Planar Die Construction
- Complementary PNP Type Available(MMDT5401)
- Ideal for Medium Power Amplification and Switching

**Reference News**

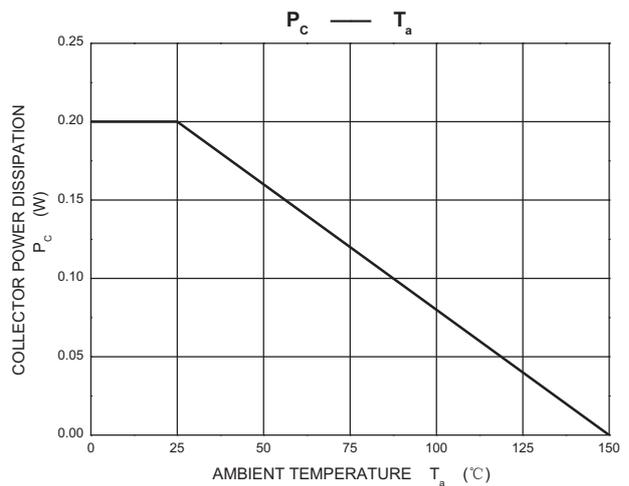
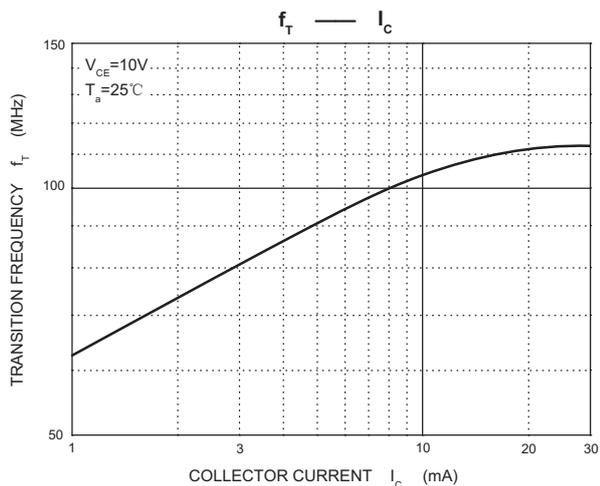
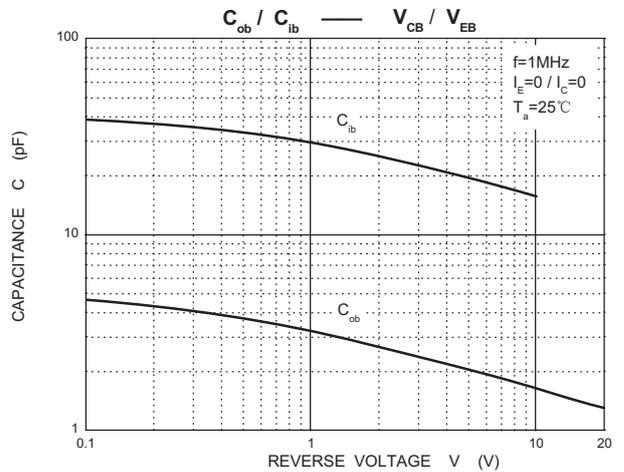
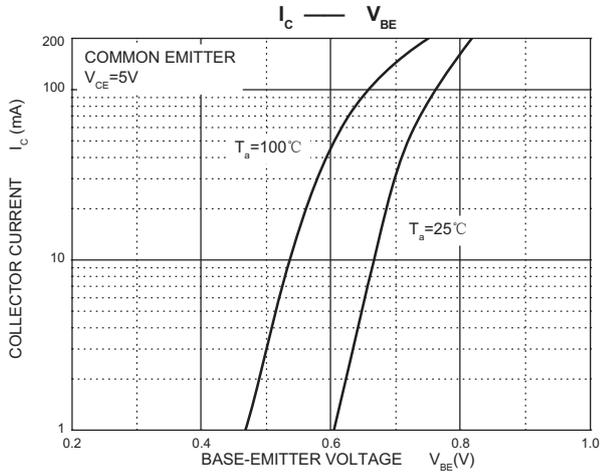
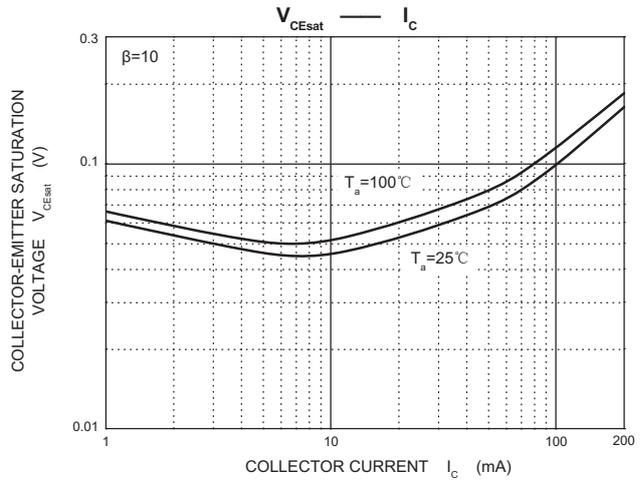
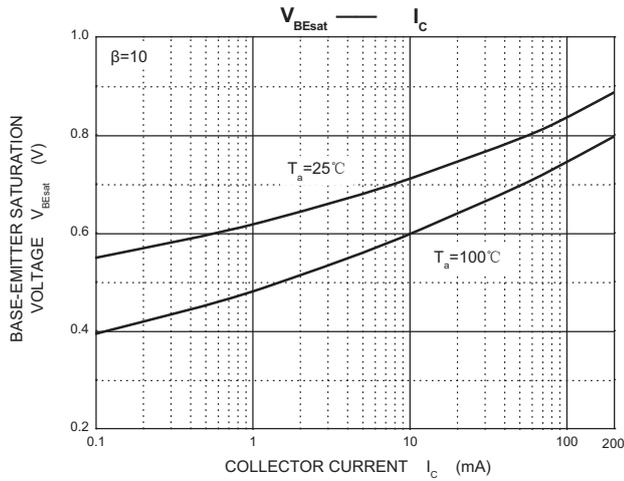
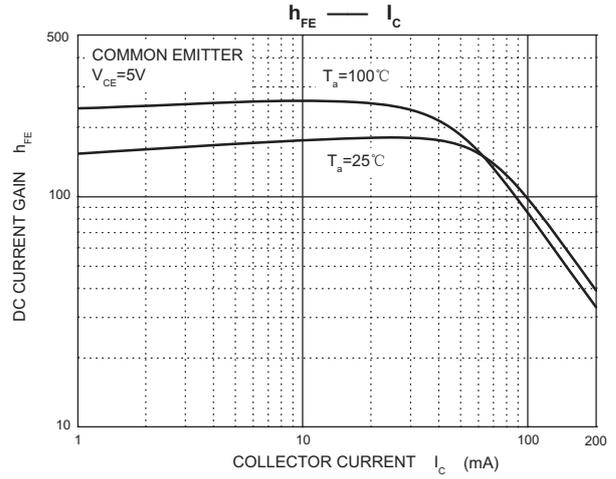
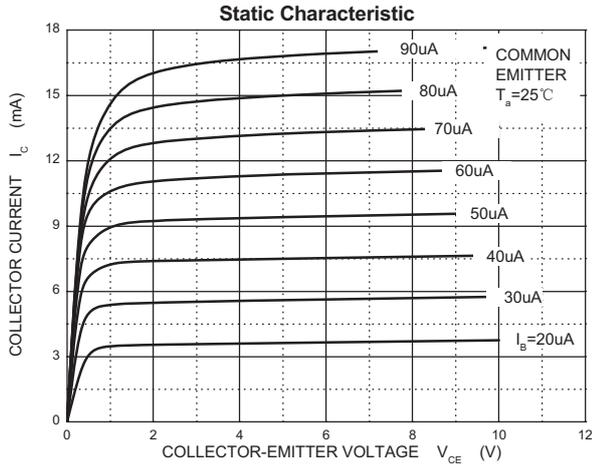
| PACKAGE OUTLINE  | MARKING   |
|--|---|
|  |  |
| SOT-363  |   |

**MAXIMUM RATINGS (Ta=25°C unless otherwise noted)**

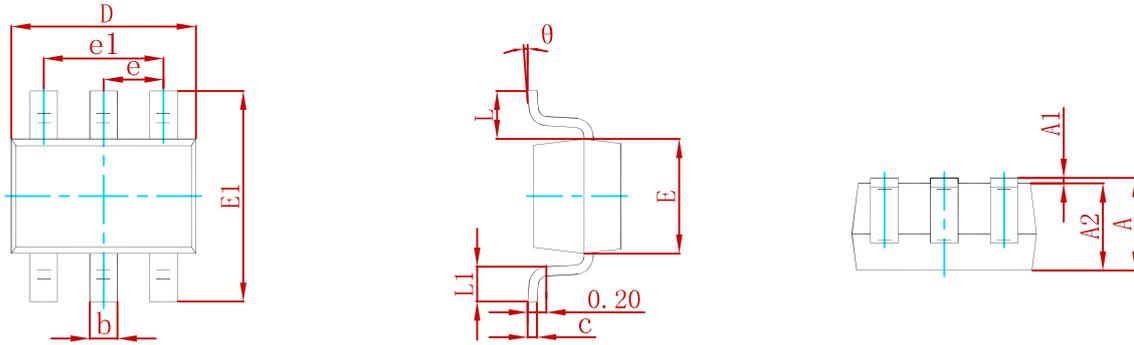
| Symbol                            | parameter  | Value    | Units |
|-----------------------------------|--|----------|-------|
| V <sub>CB0</sub>                  | collector- Base Voltage                          | 180      | V     |
| V <sub>CE0</sub>                  | collector-Emitter Voltage                        | 160      | V     |
| V <sub>EBO</sub>                  | Emitter-Base Voltage                             | 6        | V     |
| I <sub>c</sub>                    | collector current -continuous                    | 0.2      | A     |
| p <sub>c</sub>                    | collector Power Dissipation                      | 0.2      | W     |
| T <sub>J</sub> , T <sub>stg</sub> | operation Junction and storage Temperature Range | -55~+150 | °C    |

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

| parameter                            | Symbol                | Test conditions   | Min | Typ | Max  | Unit |
|--------------------------------------|-----------------------|---|-----|-----|------|------|
| Collector-base breakdown Voltage     | V <sub>(BR)cBO</sub>  | I <sub>c</sub> =100μA, I <sub>E</sub> =0                                | 180 |     |      | V    |
| Collector-emitter breakdown Voltage  | V <sub>(BR)cEO</sub>  | I <sub>c</sub> =1mA, I <sub>B</sub> =0                                  | 160 |     |      | V    |
| Emitter-base breakdown Voltage       | V <sub>(BR)EBO</sub>  | I <sub>E</sub> =10μA, I <sub>c</sub> =0                                 | 6   |     |      | V    |
| Collector cut-off current            | I <sub>cBO</sub>      | V <sub>cB</sub> =120V, I <sub>E</sub> =0                                |     |     | 0.05 | μA   |
| Emitter cut-off current              | I <sub>EBO</sub>      | V <sub>EB</sub> =4V, I <sub>c</sub> =0                                  |     |     | 0.05 | μA   |
| DC current gain                      | h <sub>FE(1)</sub>    | V <sub>cE</sub> =5 V, I <sub>c</sub> =1mA                               | 80  |     |      |      |
|                                      | h <sub>FE(2)</sub>    | V <sub>cE</sub> =5 V, I <sub>c</sub> =10mA                              | 100 |     | 300  |      |
|                                      | h <sub>FE(3)</sub>    | V <sub>cE</sub> =5 V, I <sub>c</sub> =50mA                              | 30  |     |      |      |
| Collector-emitter saturation Voltage | V <sub>cE(sat)1</sub> | I <sub>c</sub> =10mA, I <sub>B</sub> =1mA                               |     |     | 0.15 | V    |
|                                      | V <sub>cE(sat)2</sub> | I <sub>c</sub> =50mA, I <sub>B</sub> =5mA                               |     |     | 0.2  | V    |
| Base-emitter saturation Voltage      | V <sub>BE(sat)1</sub> | I <sub>c</sub> =10mA, I <sub>B</sub> =1mA                               |     |     | 1    | V    |
|                                      | V <sub>BE(sat)2</sub> | I <sub>c</sub> =50mA, I <sub>B</sub> =5mA                               |     |     | 1    | V    |
| Transition frequency                 | f <sub>T</sub>        | V <sub>cE</sub> =10V, I <sub>c</sub> =10mA, f=100MHz                    | 100 |     | 300  | MHz  |
| Output Capacitance                   | C <sub>ob</sub>       | V <sub>cB</sub> =10V, I <sub>E</sub> =0, f=1MHz                         |     |     | 6    | pF   |
| Noise Figure                         | NF                    | V <sub>cE</sub> =5V, I <sub>c</sub> =0.2mA, R <sub>S</sub> =1KΩ, f=1KHz |     |     | 8    | dB   |

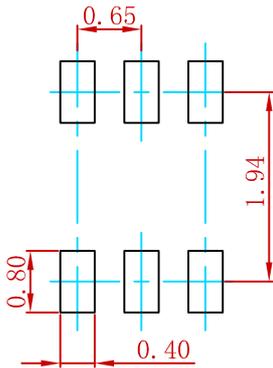


**PACKAGE MECHANICAL DATA**



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min                       | Max   | Min                  | Max   |
| A      | 0.900                     | 1.100 | 0.035                | 0.043 |
| A1     | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2     | 0.900                     | 1.000 | 0.035                | 0.039 |
| b      | 0.150                     | 0.350 | 0.006                | 0.014 |
| c      | 0.100                     | 0.150 | 0.004                | 0.006 |
| D      | 2.000                     | 2.200 | 0.079                | 0.087 |
| E      | 1.150                     | 1.350 | 0.045                | 0.053 |
| E1     | 2.150                     | 2.400 | 0.085                | 0.094 |
| e      | 0.650 TYP                 |       | 0.026 TYP            |       |
| e1     | 1.200                     | 1.400 | 0.047                | 0.055 |
| L      | 0.525 REF                 |       | 0.021 REF            |       |
| L1     | 0.260                     | 0.460 | 0.010                | 0.018 |
| theta  | 0°                        | 8°    | 0°                   | 8°    |

**Suggested Pad Layout**



Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05$ mm.
3. The pad layout is for reference purposes only.

**REEL SPECIFICATION**

| P/N      | PKG     | QTY  |
|----------|---------|------|
| MMDT5551 | SOT-363 | 3000 |

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