

# MSKSEMI 美森科

SEMICONDUCTOR



ESD



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GDT



PLED

## MJD122(MS)


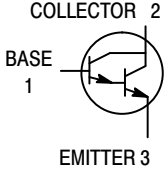

Product specification

**TRANSISTOR (NPN)**

**FEATURES**

- High DC Current Gain
- Electrically Similar to Popular TIP122
- Built-in a Damper Diode at E-C

**Reference News**

| PACKAGE OUTLINE                                                                                                                | Pin Configuration                                                                  | Marking                                                                              |
|--------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|  <p>1.BASE<br/>2.COLLECTOR<br/>3.EMITTER</p> |  |  |

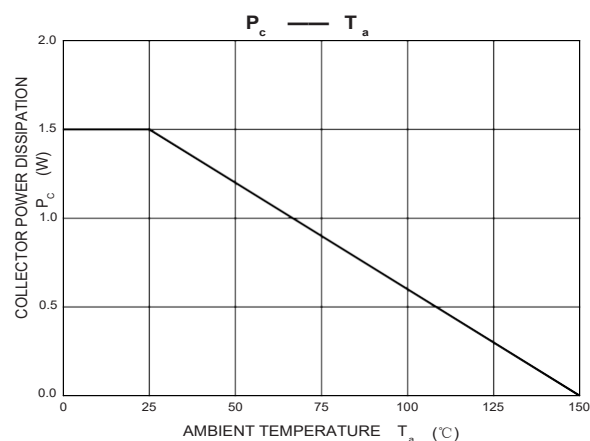
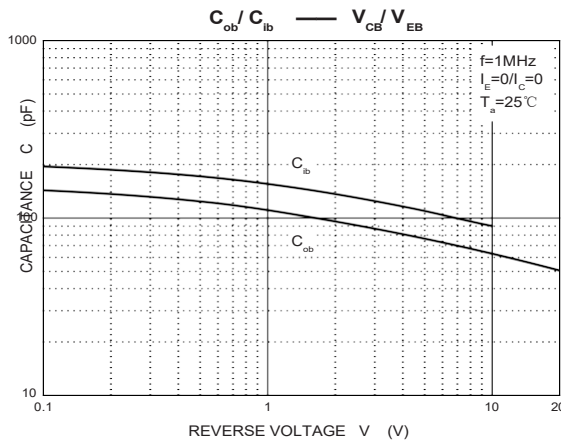
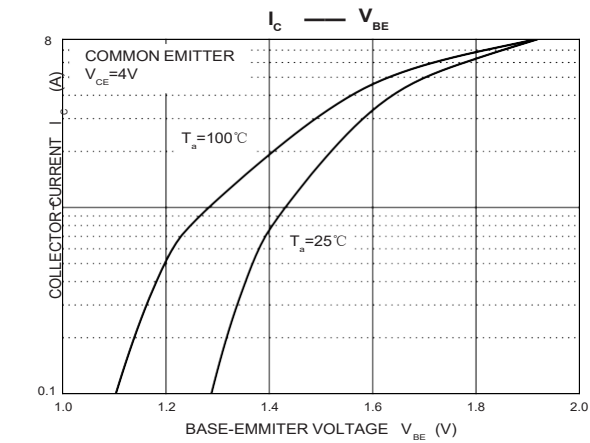
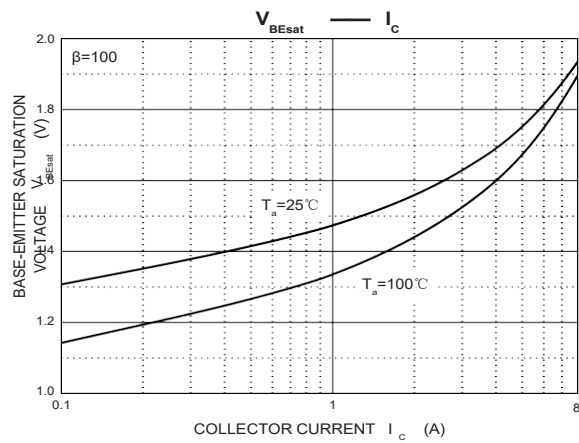
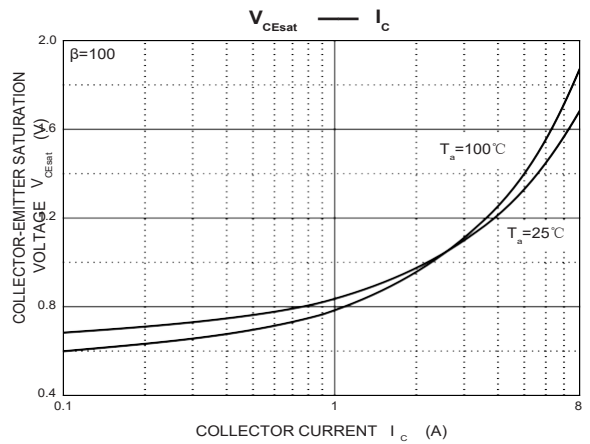
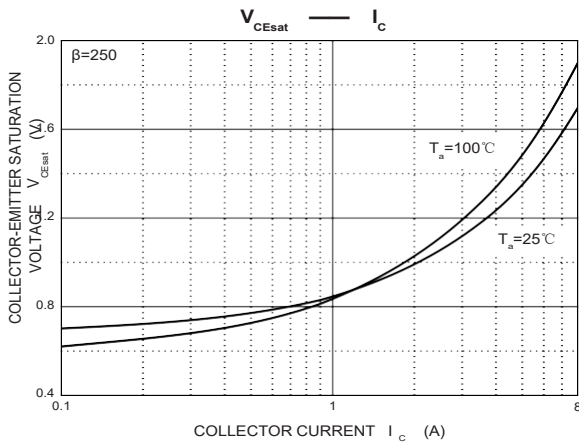
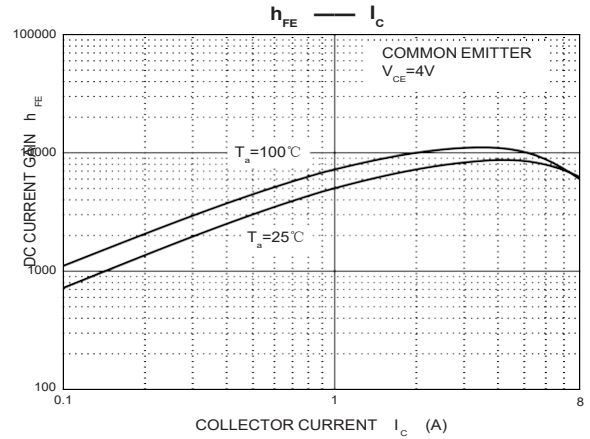
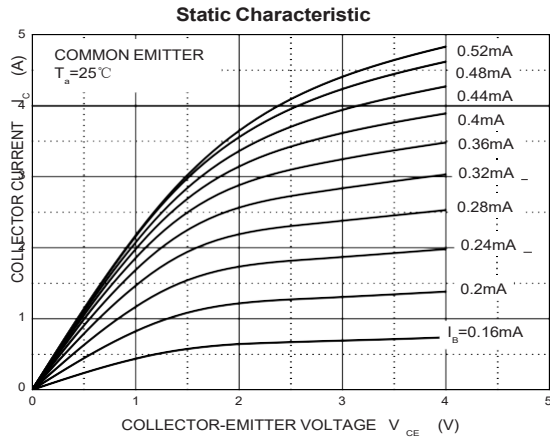
**MAXIMUM RATINGS (Ta=25 °C unless otherwise noted)**

| Symbol                           | Parameter                                        | Value   | Unit |
|----------------------------------|--------------------------------------------------|---------|------|
| V <sub>CBO</sub>                 | Collector-Base Voltage                           | -100    | V    |
| V <sub>CEO</sub>                 | Collector-Emitter Voltage                        | -100    | V    |
| V <sub>EBO</sub>                 | Emitter-Base Voltage                             | -5      | V    |
| I <sub>c</sub>                   | Collector Current -Continuous                    | -6      | A    |
| I <sub>cP</sub> *                | Collector Current -Pluse                         | -10     | A    |
| P <sub>c</sub>                   | Collector Power Dissipation                      | 1.25    | W    |
| T <sub>J</sub> ,T <sub>stg</sub> | Operating Junction and Storage Temperature Range | -55-150 | °C   |

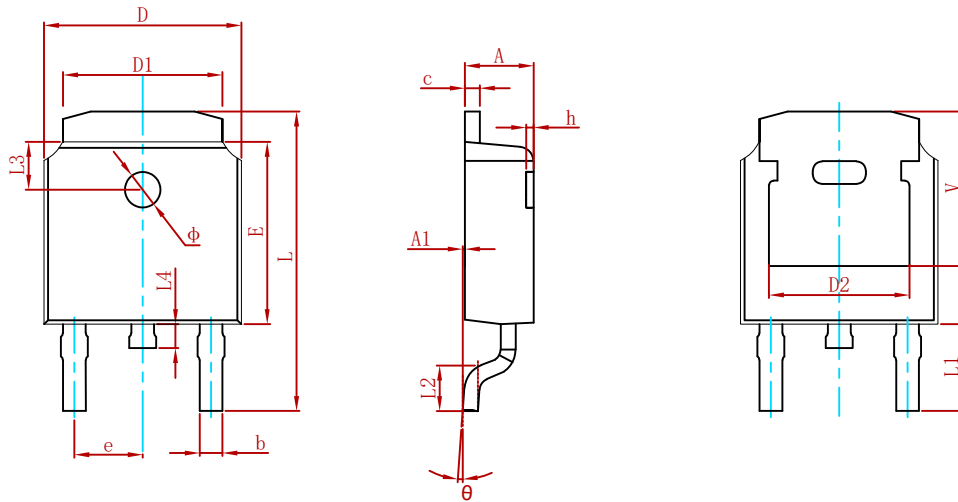
**ELECTRICAL CHARACTERISTICS(T<sub>a</sub>=25°C unless otherwise specified)**

| Parameter                            | Symbol                   | Test conditions                                   | Min  | Typ | Max   | Unit |
|--------------------------------------|--------------------------|---------------------------------------------------|------|-----|-------|------|
| Collector-base breakdown voltage     | V <sub>(BR)CBO</sub>     | I <sub>C</sub> =1mA, I <sub>E</sub> =0            | 100  |     |       | V    |
| Collector-emitter breakdown voltage  | V <sub>(BR)CEO</sub>     | I <sub>C</sub> =30mA, I <sub>B</sub> =0           | 100  |     |       | V    |
| Emitter-base breakdown voltage       | V <sub>(BR)EBO</sub>     | I <sub>E</sub> =3mA, I <sub>C</sub> =0            | 5    |     |       | V    |
| Collector cut-off current            | I <sub>CBO</sub>         | V <sub>CB</sub> =100V, I <sub>E</sub> =0          |      |     | 10    | μA   |
| Collector-emitter cut-off current    | I <sub>CEO</sub>         | V <sub>CE</sub> =50V, I <sub>E</sub> =0           |      |     | 10    | μA   |
| Emitter cut-off current              | I <sub>EBO</sub>         | V <sub>EB</sub> =5V, I <sub>C</sub> =0            |      |     | 2     | mA   |
| DC current gain                      | h <sub>FE(2)</sub>       | V <sub>CE</sub> =4V, I <sub>C</sub> =4A           | 1000 |     | 12000 |      |
|                                      | h <sub>FE(3)</sub>       | V <sub>CE</sub> =4V, I <sub>C</sub> =8A           | 100  |     |       |      |
| Collector-emitter saturation voltage | V <sub>CE(sat) (1)</sub> | I <sub>C</sub> =4A, I <sub>B</sub> =16mA          |      |     | 2     | V    |
|                                      | V <sub>CE(sat) (2)</sub> | I <sub>C</sub> =8A, I <sub>B</sub> =80mA          |      |     | 4     | V    |
| Base-emitter saturation voltage      | V <sub>BE(sat)</sub>     | I <sub>C</sub> =8A, I <sub>B</sub> =80mA          |      |     | 4.5   | V    |
| Base-emitter voltage*                | V <sub>BE</sub>          | V <sub>CE</sub> =4V, I <sub>C</sub> =4A           |      |     | 2.8   | V    |
| Collector output capacitance         | C <sub>ob</sub>          | V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=0.1MHz |      |     | 200   | pF   |

Typical Characteristics

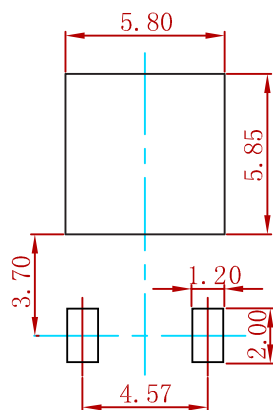


**PACKAGE MECHANICAL DATA**



| Symbol | Dimensions In Millimeters |        | Dimensions In Inches |       |
|--------|---------------------------|--------|----------------------|-------|
|        | Min.                      | Max.   | Min.                 | Max.  |
| A      | 2.200                     | 2.400  | 0.087                | 0.094 |
| A1     | 0.000                     | 0.127  | 0.000                | 0.005 |
| b      | 0.635                     | 0.770  | 0.025                | 0.030 |
| c      | 0.460                     | 0.580  | 0.018                | 0.023 |
| D      | 6.500                     | 6.700  | 0.256                | 0.264 |
| D1     | 5.100                     | 5.460  | 0.201                | 0.215 |
| D2     | 4.830 REF.                |        | 0.190 REF.           |       |
| E      | 6.000                     | 6.200  | 0.236                | 0.244 |
| e      | 2.186                     | 2.386  | 0.086                | 0.094 |
| L      | 9.712                     | 10.312 | 0.382                | 0.406 |
| L1     | 2.900 REF.                |        | 0.114 REF.           |       |
| L2     | 1.400                     | 1.700  | 0.055                | 0.067 |
| L3     | 1.600 REF.                |        | 0.063 REF.           |       |
| L4     | 0.600                     | 1.000  | 0.024                | 0.039 |
| φ      | 1.100                     | 1.300  | 0.043                | 0.051 |
| θ      | 0°                        | 8°     | 0°                   | 8°    |
| h      | 0.000                     | 0.300  | 0.000                | 0.012 |
| V      | 5.250 REF.                |        | 0.207 REF.           |       |

**Suggested Pad Layout**



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

**REEL SPECIFICATION**

| P/N        | PKG    | QTY  |
|------------|--------|------|
| MJD122(MS) | TO-252 | 2500 |

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