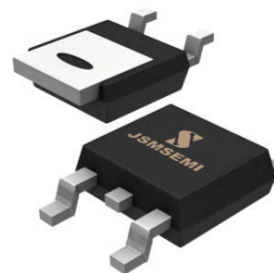


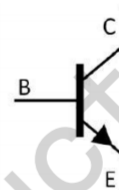
## DESCRIPTION

- Collector-Emitter Breakdown Voltage  
 $-V_{(BR)CEO} = 100V(\text{Min})$
- Collector-Emitter Saturation Voltage  
 $-V_{CE(sat)} = 1.5V(\text{Max}) @ I_C = 6A$
- Complement to Type MJD42C



## APPLICATIONS

- Designed for low power audio amplifier and low-current, high-speed switching applications



## ABSOLUTE MAXIMUM RATINGS( $T_a = 25^\circ\text{C}$ )

| SYMBOL    | PARAMETER                                               | VALUE   | UNIT             |
|-----------|---------------------------------------------------------|---------|------------------|
| $V_{CBO}$ | Collector-Base Voltage                                  | 100     | V                |
| $V_{CEO}$ | Collector-Emitter Voltage                               | 100     | V                |
| $V_{EBO}$ | Emitter-Base Voltage                                    | 5       | V                |
| $I_C$     | Collector Current-Continuous                            | 6       | A                |
| $I_{CM}$  | Collector Current-Peak                                  | 10      | A                |
| $I_B$     | Base Current                                            | 2       | A                |
| $P_C$     | Collector Power Dissipation<br>$T_C = 25^\circ\text{C}$ | 20      | W                |
|           | Collector Power Dissipation<br>$T_a = 25^\circ\text{C}$ | 1.75    |                  |
| $T_j$     | Junction Temperature                                    | 150     | $^\circ\text{C}$ |
| $T_{stg}$ | Storage Temperature Range                               | -65~150 | $^\circ\text{C}$ |

## THERMAL CHARACTERISTICS

| SYMBOL        | PARAMETER                               | MAX  | UNIT               |
|---------------|-----------------------------------------|------|--------------------|
| $R_{th\ j-c}$ | Thermal Resistance, Junction to Case    | 6.25 | $^\circ\text{C/W}$ |
| $R_{th\ j-a}$ | Thermal Resistance, Junction to Ambient | 71.4 | $^\circ\text{C/W}$ |

**ELECTRICAL CHARACTERISTICS** ( $T_C=25^{\circ}\text{C}$  unless otherwise specified)

| SYMBOL         | PARAMETER                            | CONDITIONS                               | MIN | MAX | UNIT          |
|----------------|--------------------------------------|------------------------------------------|-----|-----|---------------|
| $V_{CEO(SUS)}$ | Collector-Emitter Sustaining Voltage | $I_C = 30\text{mA}; I_B = 0$             | 100 | --  | V             |
| $V_{CE(sat)}$  | Collector-Emitter Saturation Voltage | $I_C = 6\text{A}; I_B = 0.6\text{A}$     | --  | 1.5 | V             |
| $V_{BE(on)}$   | Base-Emitter On Voltage              | $I_C = 6\text{A}; V_{CE} = 4\text{V}$    | --  | 2.0 | V             |
| $I_{CBO}$      | Collector Cutoff Current             | $V_{CB} = 100\text{V}; I_E = 0$          | --  | 10  | $\mu\text{A}$ |
| $I_{CEO}$      | Collector Cutoff Current             | $V_{CE} = 60\text{V}; I_B = 0$           | --  | 50  | $\mu\text{A}$ |
| $I_{EBO}$      | Emitter Cutoff Current               | $V_{EB} = 5\text{V}; I_C = 0$            | --  | 0.5 | mA            |
| $h_{FE-1}$     | DC Current Gain                      | $I_C = 0.3\text{A}; V_{CE} = 4\text{V}$  | 30  | --  |               |
| $h_{FE-2}$     | DC Current Gain                      | $I_C = 3\text{A}; V_{CE} = 4\text{V}$    | 15  | 75  |               |
| $f_T$          | Current-Gain—Bandwidth Product       | $I_C = 0.5\text{A}; V_{CE} = 10\text{V}$ | 3   | --  | MHz           |

## Switching Time

|           |               |                                                                                                |    |     |               |
|-----------|---------------|------------------------------------------------------------------------------------------------|----|-----|---------------|
| $t_{on}$  | Turn-On Time  | $I_C = 6\text{A}; I_{B1} = -I_{B2} = 0.6\text{A};$<br>$V_{BE(off)} = 4\text{V}, R_L = 5\Omega$ | -- | 0.6 | $\mu\text{s}$ |
| $t_{off}$ | Turn-Off Time |                                                                                                | -- | 1.0 | $\mu\text{s}$ |

**PRODUCT DISCLAIMER**

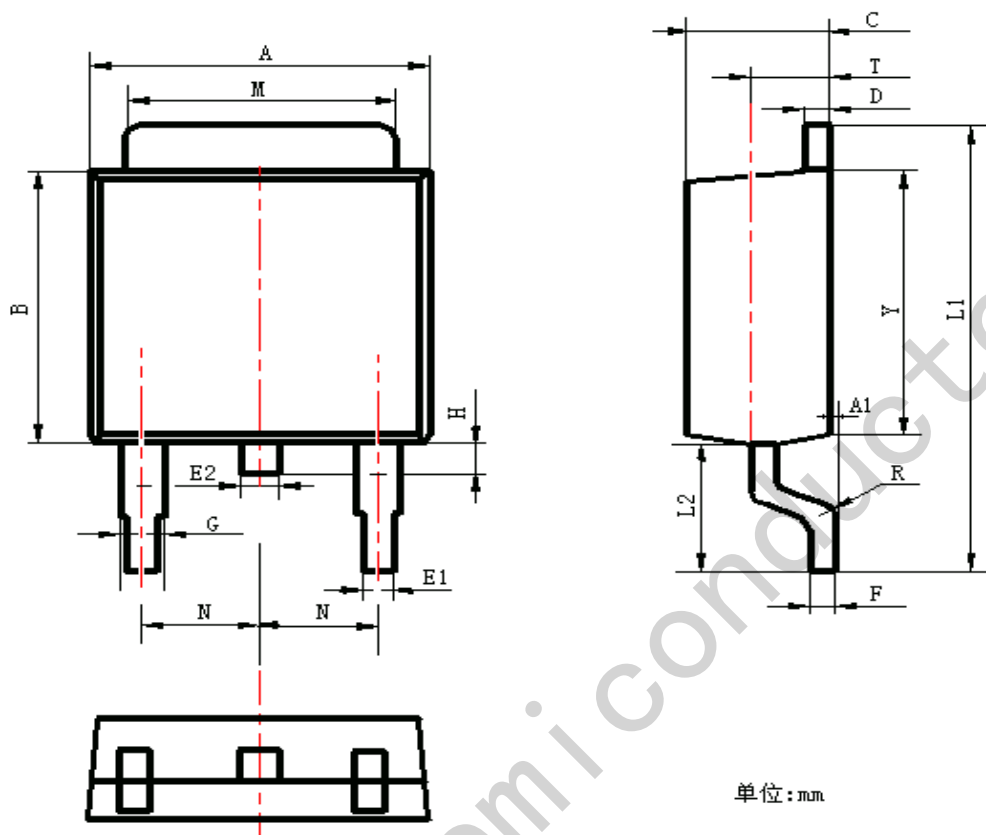
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## TO-252 Package Information



单位: mm

| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min.                      | Max.  | Min.                 | Max.  |
| A      | 6.30                      | 6.90  | 0.248                | 0.272 |
| A1     | 0.00                      | 0.16  | 0.000                | 0.006 |
| B      | 5.70                      | 6.30  | 0.224                | 0.248 |
| C      | 2.10                      | 2.50  | 0.083                | 0.098 |
| D      | 0.30                      | 0.70  | 0.012                | 0.028 |
| E1     | 0.60                      | 0.90  | 0.024                | 0.035 |
| E2     | 0.70                      | 1.00  | 0.028                | 0.039 |
| F      | 0.30                      | 0.60  | 0.012                | 0.024 |
| G      | 0.70                      | 1.20  | 0.028                | 0.047 |
| L1     | 9.60                      | 10.50 | 0.378                | 0.413 |
| L2     | 2.70                      | 3.10  | 0.106                | 0.122 |
| H      | 0.40                      | 1.00  | 0.016                | 0.039 |
| M      | 5.10                      | 5.50  | 0.201                | 0.217 |
| N      | 2.09                      | 2.49  | 0.082                | 0.098 |
| R      | 0.30                      |       | 0.012                |       |
| T      | 1.40                      | 1.60  | 0.055                | 0.063 |
| Y      | 5.10                      | 6.30  | 0.201                | 0.248 |