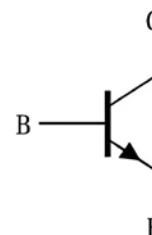


## Features

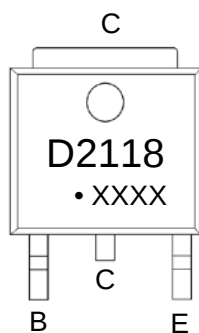
- Low  $V_{CE(sat)}$ .
- Excellent DC Current Gain Characteristics.



TO-252-2L top view



Schematic diagram



Marking and pin assignment



Halogen-Free

## Maximum Ratings( $T_a=25^{\circ}\text{C}$ unless otherwise noted)

| Symbol         | Parameter                                        | Value    | Unit               |
|----------------|--------------------------------------------------|----------|--------------------|
| $V_{CBO}$      | Collector-Base Voltage                           | 50       | V                  |
| $V_{CEO}$      | Collector-Emitter Voltage                        | 20       | V                  |
| $V_{EBO}$      | Emitter-Base Voltage                             | 6        | V                  |
| $I_C$          | Collector Current                                | 5        | A                  |
| $P_C$          | Collector Power Dissipation                      | 1        | W                  |
| $T_J, T_{stg}$ | Operation Junction and Storage Temperature Range | -55~+150 | $^{\circ}\text{C}$ |

## Ordering Information (Example)

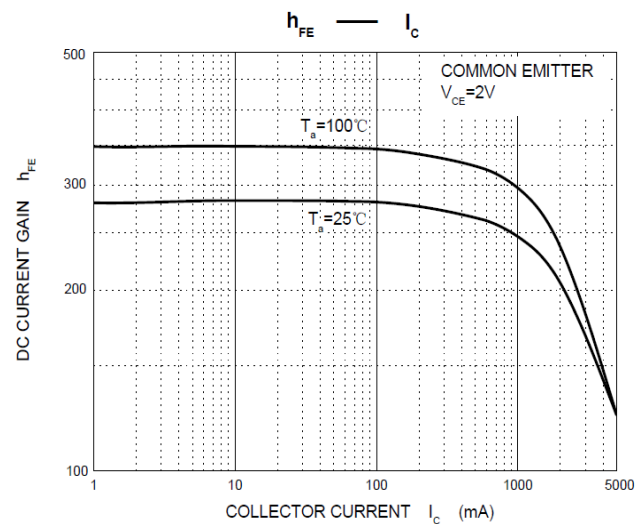
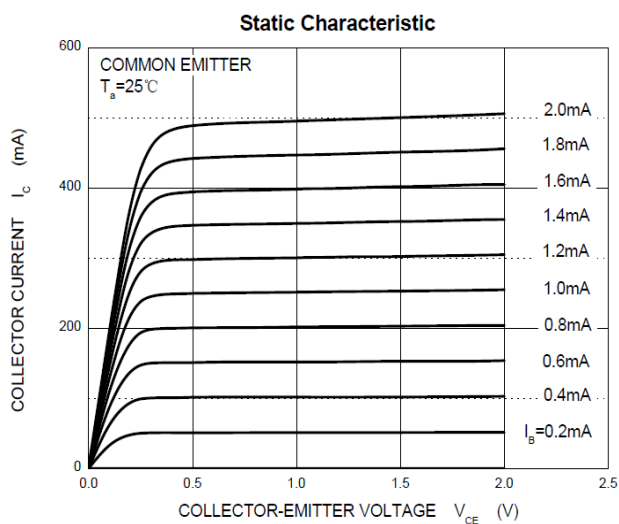
| Type    | Package   | Marking | Minimum Package(pcs) | Inner Box Quantity(pcs) | Outer Carton Quantity(pcs) | Delivery Mode |
|---------|-----------|---------|----------------------|-------------------------|----------------------------|---------------|
| 2SD2118 | TO-252-2L | D2118   | 2,500                | 5,000                   | 35,000                     | 13"reel       |

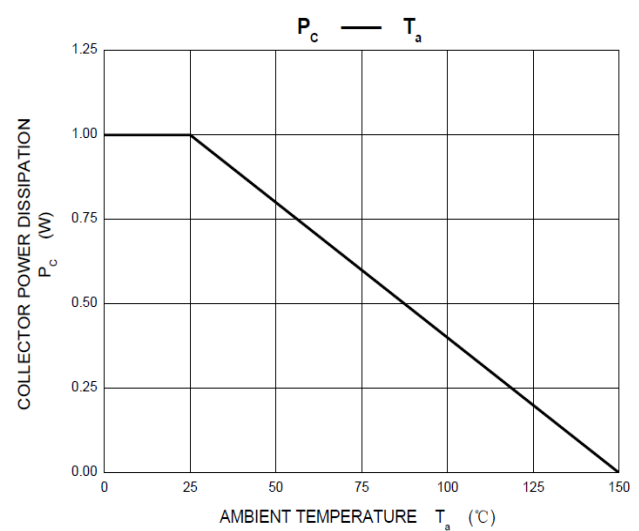
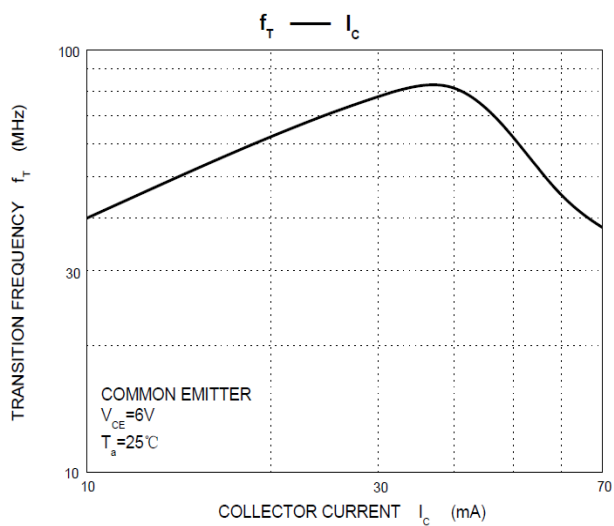
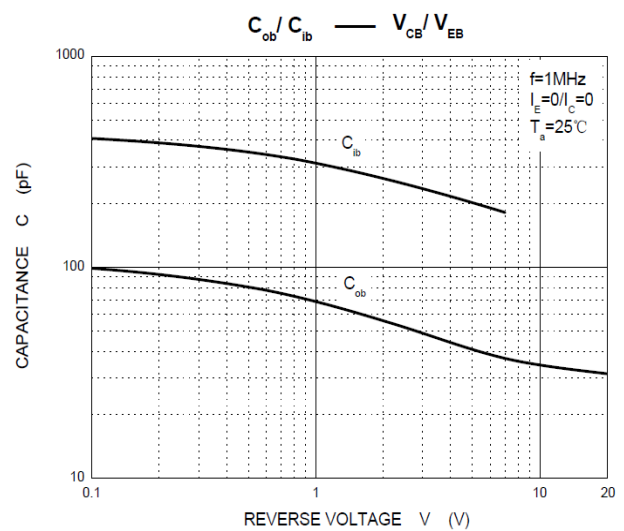
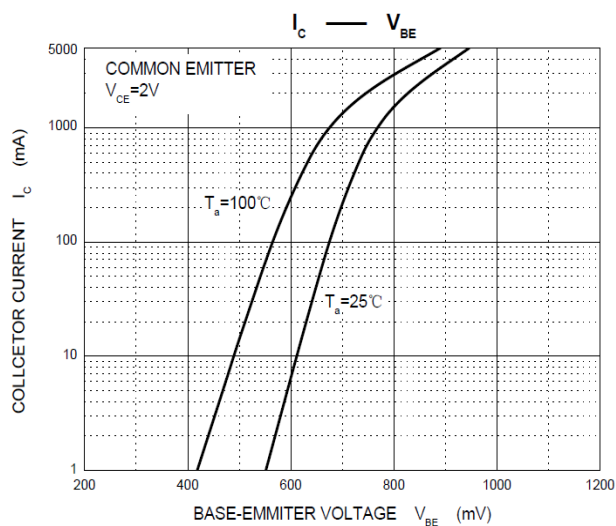
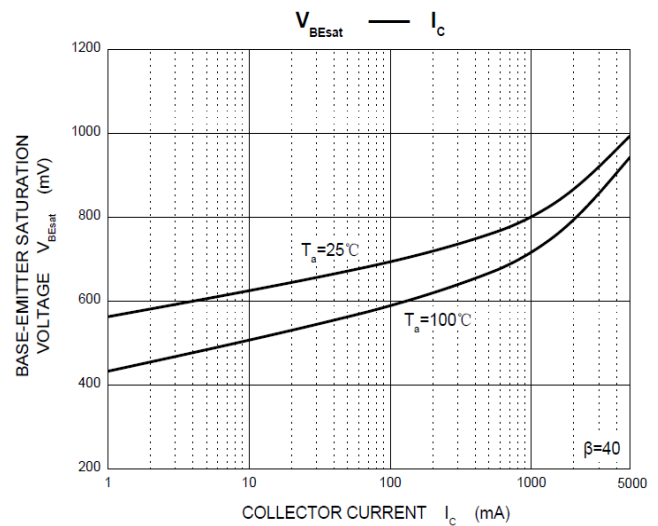
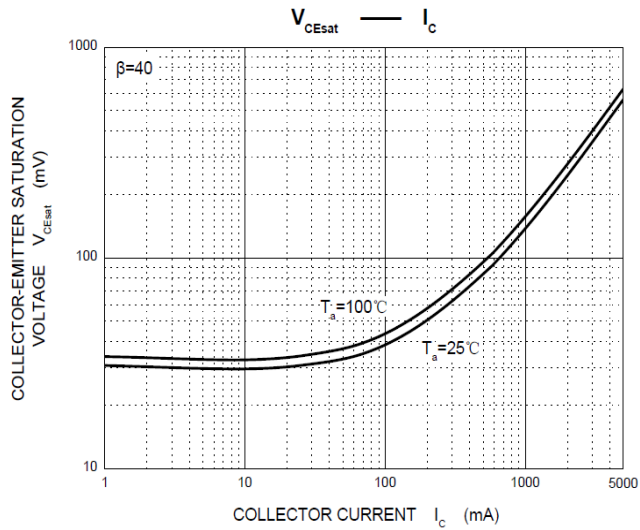
**Electrical Characteristics (T<sub>J</sub>=25°C unless otherwise noted)**

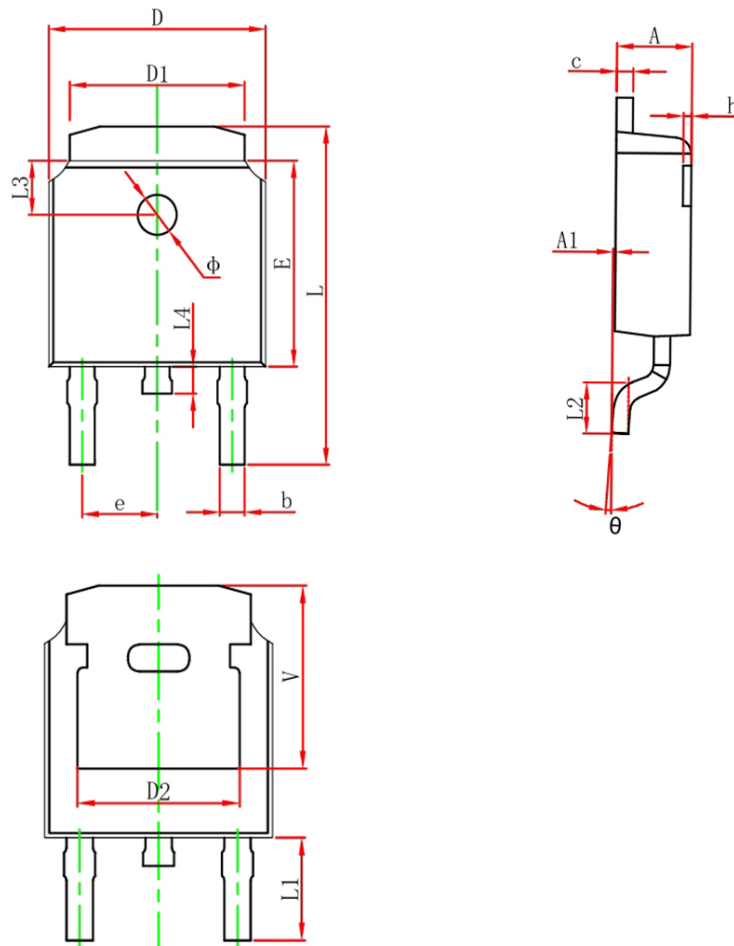
| Symbol               | Parameter                            | Condition                                           | Min | Typ | Max | Unit |
|----------------------|--------------------------------------|-----------------------------------------------------|-----|-----|-----|------|
| V <sub>(BR)CBO</sub> | Collector-base breakdown voltage     | I <sub>C</sub> =50μA, I <sub>E</sub> =0             | 50  | --  | --  | V    |
| V <sub>(BR)CEO</sub> | Collector-emitter breakdown voltage  | I <sub>C</sub> =1mA, I <sub>B</sub> =0              | 20  | --  | --  | V    |
| V <sub>(BR)EBO</sub> | Emitter-base breakdown voltage       | I <sub>E</sub> = 50μA, I <sub>C</sub> =0            | 6   | --  | --  | V    |
| I <sub>CBO</sub>     | Collector cut-off current            | V <sub>CB</sub> =40V, I <sub>E</sub> =0             | --  | --  | 0.5 | μA   |
| I <sub>EBO</sub>     | Emitter cut-off current              | V <sub>EB</sub> =5V, I <sub>C</sub> =0              | --  | --  | 0.5 | μA   |
| h <sub>FE</sub>      | DC current gain                      | V <sub>CE</sub> =2V, I <sub>C</sub> =0.5A           | 120 | --  | 390 |      |
| V <sub>CE(sat)</sub> | Collector-emitter saturation voltage | I <sub>C</sub> =4A, I <sub>B</sub> =100mA           | --  | --  | 1   | V    |
| C <sub>ob</sub>      | Collector output capacitance         | V <sub>CB</sub> =20V, I <sub>E</sub> =0, f=1MHz     | 30  | --  | --  | pF   |
| f <sub>T</sub>       | Transition frequency                 | V <sub>CE</sub> =6V, I <sub>C</sub> =50mA, f=100MHz | --  | 150 | --  | MHz  |

**Classification Of h<sub>FE</sub>**

| Rank  | Q       | R       |
|-------|---------|---------|
| Range | 120-270 | 180-390 |

**Typical Characteristics**




**TO-252-2L Package information**


| Symbol   | Dimensions in Millimeters(mm) |        | 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        | 0.450                         | 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 | 0.386                | 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 |
| $\phi$   | 1.100                         | 1.300  | 0.043                | 0.051 |
| $\theta$ | 0°                            | 8°     | 0°                   | 8°    |
| h        | 0.000                         | 0.300  | 0.000                | 0.012 |
| V        | 5.250 REF.                    |        | 0.207 REF.           |       |