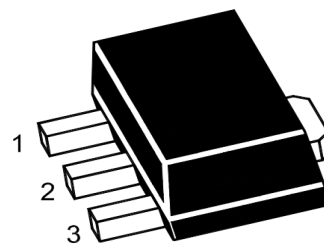




2SD2150 TRANSISTOR (NPN)

FEATURES

- Excellent current-to-gain characteristics
- Low collector saturation voltage $V_{CE(sat)}$
 $V_{CE(sat)}=0.5V(\text{max})$ for $I_C/I_B=2A/0.1A$



1.Base 2.Collector 3.Emitter

MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

SOT-89-3L

| Symbol | Parameter | Value | Unit |
|----------------|--|---------|--------------------|
| V_{CBO} | Collector-Base Voltage | 40 | V |
| V_{CEO} | Collector-Emitter Voltage | 20 | V |
| V_{EBO} | Emitter-Base Voltage | 6 | V |
| I_C | Collector Current -Continuous | 3 | A |
| P_C | Collector Power Dissipation | 500 | mW |
| T_J, T_{stg} | Operation Junction and Storage Temperature Range | -55~150 | $^{\circ}\text{C}$ |

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

| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|--------------------------------------|-----------------|---|-----|-----|-----|---------------|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C = 50\mu\text{A}, I_E = 0$ | 40 | | | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C = 1\text{mA}, I_B = 0$ | 20 | | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E = 50\mu\text{A}, I_C = 0$ | 6 | | | V |
| Collector cut-off current | I_{CBO} | $V_{CB} = 30\text{V}, I_E = 0$ | | | 0.1 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB} = 5\text{V}, I_C = 0$ | | | 0.1 | μA |
| DC current gain | h_{FE}^* | $V_{CE} = 2\text{V}, I_C = 100\text{mA}$ | 180 | | 560 | |
| Collector-emitter saturation voltage | $V_{CE(sat)}^*$ | $I_C = 2\text{A}, I_B = 100\text{mA}$ | | | 0.5 | V |
| Transition frequency | f_T^* | $V_{CE} = 2\text{V}, I_C = 500\text{mA}$ $f = 100\text{MHz}$ | | 290 | | MHz |
| Collector output capacitance | C_{ob} | $V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$ | | 25 | | pF |

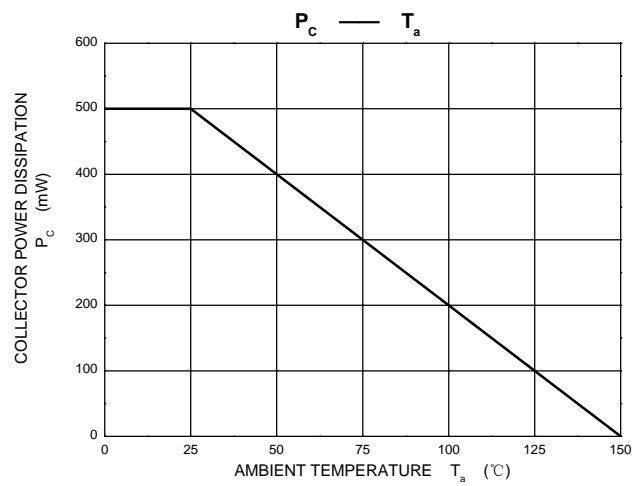
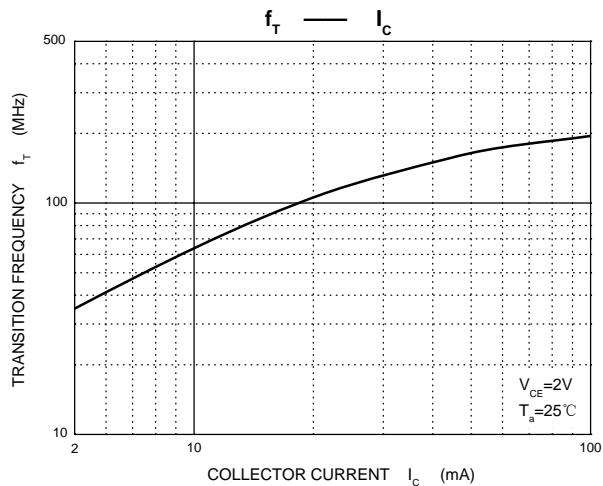
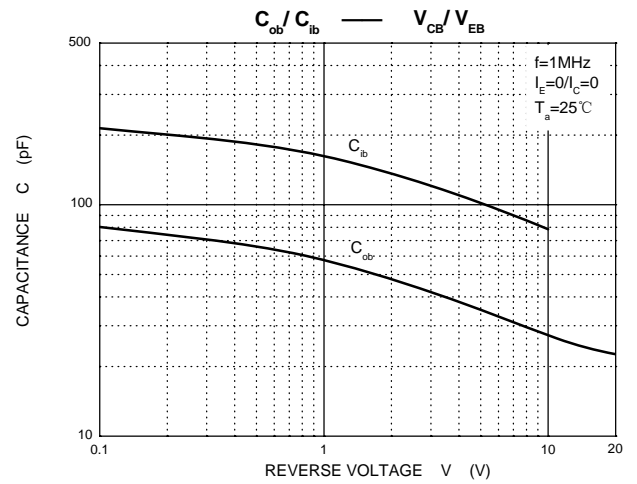
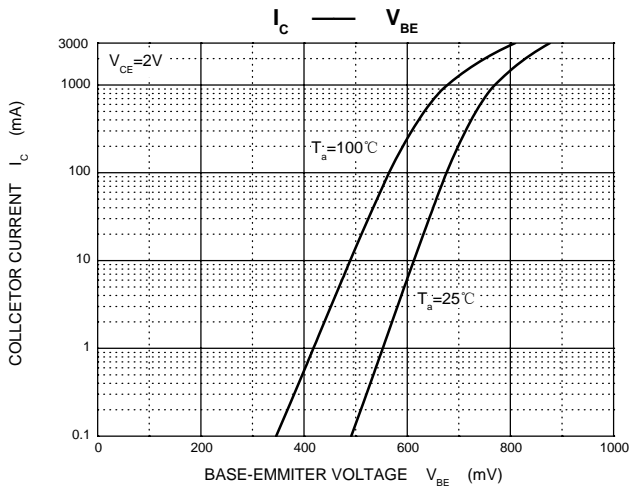
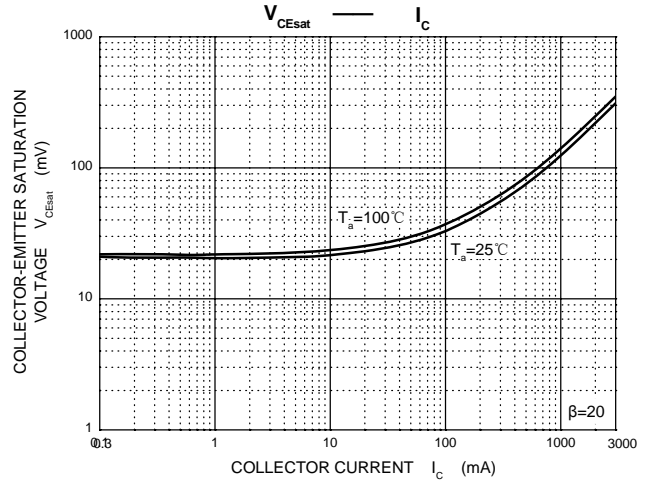
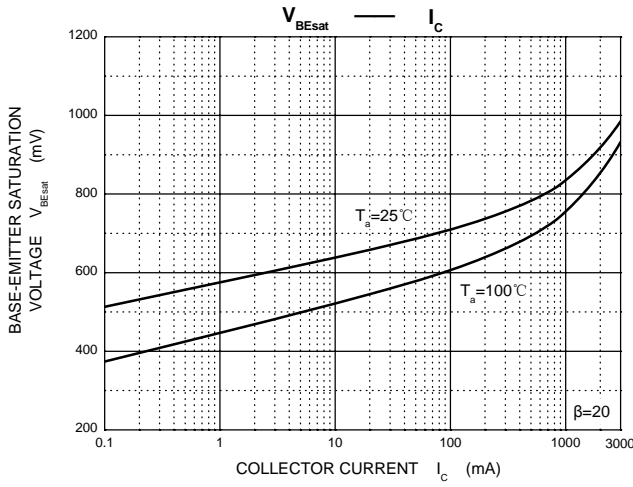
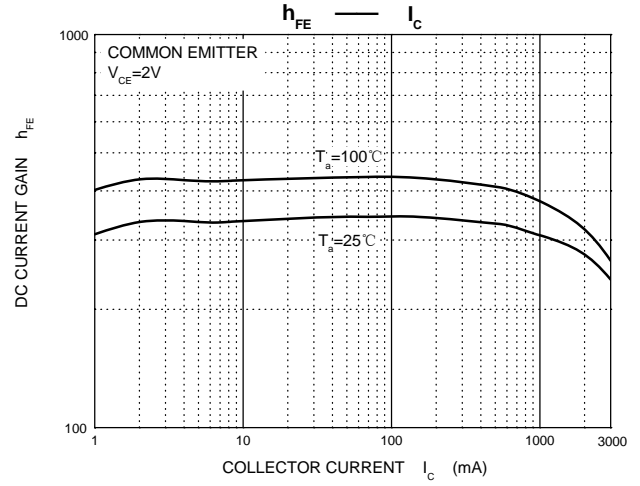
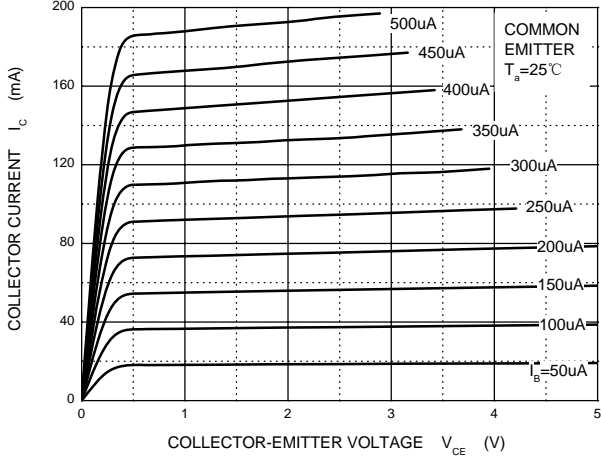
*Pulse test: $t_p \leq 300\mu\text{S}, \delta \leq 0.02$.

CLASSIFICATION OF h_{FE}

| Rank | R | S |
|---------|---------|---------|
| Range | 180-390 | 270-560 |
| Marking | CFR | CFS |

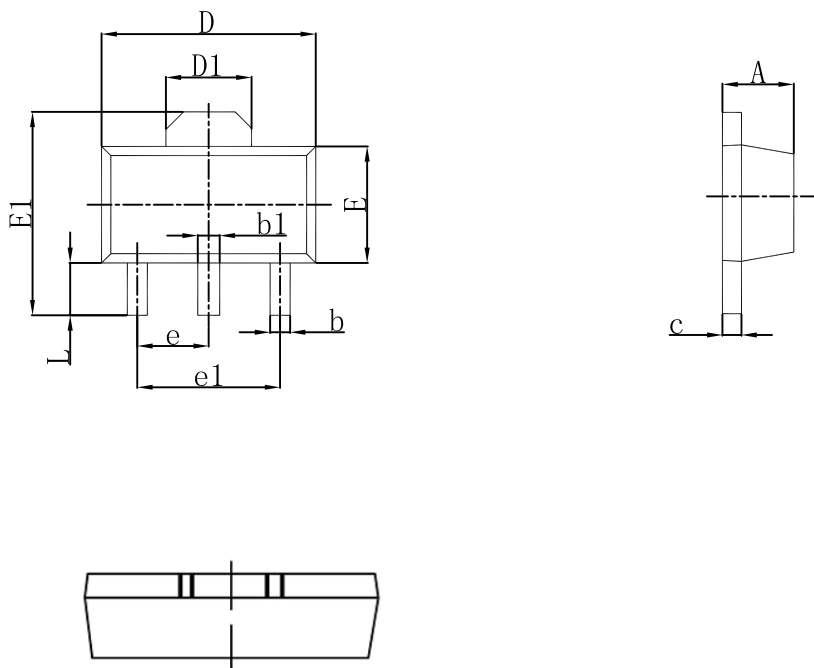


Static Characteristic





SOT-89-3L Outlines Dimensions



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|-------|----------------------|-------|
| | Min | Max | Min | Max |
| A | 1.400 | 1.600 | 0.055 | 0.063 |
| b | 0.320 | 0.520 | 0.013 | 0.020 |
| b1 | 0.400 | 0.580 | 0.016 | 0.023 |
| c | 0.350 | 0.440 | 0.014 | 0.017 |
| D | 4.400 | 4.600 | 0.173 | 0.181 |
| D1 | 1.550 REF. | | 0.061 REF. | |
| E | 2.300 | 2.600 | 0.091 | 0.102 |
| E1 | 3.940 | 4.250 | 0.155 | 0.167 |
| e | 1.500 TYP. | | 0.060 TYP. | |
| e1 | 3.000 TYP. | | 0.118 TYP. | |
| L | 0.900 | 1.200 | 0.035 | 0.047 |