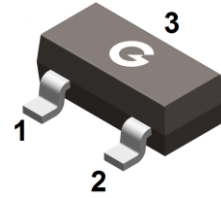
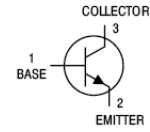


### Features

- Low Collector-Emitter saturation voltage  $V_{CE(sat)}$  and corresponding low  $R_{CE(sat)}$
- High collector current capability
- High collector current gain
- Improved efficiency due to reduced heat generation

HF



SOT-23-3L

### Mechanical Data

- Case: SOT-23-3L
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208

### Ordering Information

| Part Number | Package   | Shipping Quantity      | Marking Code |
|-------------|-----------|------------------------|--------------|
| GT4350-3L   | SOT-23-3L | 3000 pcs / Tape & Reel | T4350        |

### Maximum Ratings (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

| Parameter                           | Symbol        | Value | Unit |
|-------------------------------------|---------------|-------|------|
| Collector-Base Breakdown Voltage    | $V_{CBO}$     | 50    | V    |
| Collector-Emitter Breakdown Voltage | $V_{CEO}$     | 50    | V    |
| Emitter-Base Breakdown Voltage      | $V_{EBO}$     | 5     | V    |
| Collector Current (Continuous)      | $I_C$         | 2     | A    |
| Collector Current (Pulse)           | $I_{CM}$      | 4     | A    |
| Equivalent On-Resistance            | $R_{CE(sat)}$ | 130   | mΩ   |

### Thermal Characteristics

| Parameter                          | Symbol          | Value      | Unit               |
|------------------------------------|-----------------|------------|--------------------|
| Power Dissipation                  | $P_D$           | 400        | mW                 |
| Thermal Resistance Junction-to-Air | $R_{\theta JA}$ | 313        | $^\circ\text{C/W}$ |
| Junction Temperature Range         | $T_J$           | -55 ~ +150 | $^\circ\text{C}$   |
| Storage Temperature Range          | $T_{STG}$       | -65 ~ +150 | $^\circ\text{C}$   |

### Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

| Parameter                            | Symbol        | Test Condition                                                  | Min. | Typ. | Max. | Unit          |
|--------------------------------------|---------------|-----------------------------------------------------------------|------|------|------|---------------|
| Collector-Base Breakdown Voltage     | $V_{(BR)CBO}$ | $I_C = 10\mu\text{A}, I_E = 0$                                  | 50   | -    | -    | V             |
| Collector-Emitter Breakdown Voltage  | $V_{(BR)CEO}$ | $I_C = 1\text{mA}, I_B = 0$                                     | 50   | -    | -    | V             |
| Emitter-Base Breakdown Voltage       | $V_{(BR)EBO}$ | $I_E = 10\mu\text{A}, I_C = 0$                                  | 5    | -    | -    | V             |
| Collector Cut-off Current            | $I_{CBO}$     | $V_{CB} = 50\text{V}, I_E = 0, T_J = 25^\circ\text{C}$          | -    | -    | 0.1  | $\mu\text{A}$ |
|                                      |               | $V_{CB} = 50\text{V}, I_E = 0, T_J = 150^\circ\text{C}$         | -    | -    | 50   | $\mu\text{A}$ |
| Emitter Cut-off Current              | $I_{EBO}$     | $V_{EB} = 5\text{V}, I_C = 0$                                   | -    | -    | 100  | nA            |
| DC Current Gain                      | $h_{FE}$      | $V_{CE} = 2\text{V}, I_C = 100\text{mA}$                        | 300  | -    | -    | -             |
|                                      |               | $V_{CE} = 2\text{V}, I_C = 500\text{mA}$                        | 300  | -    | -    |               |
|                                      |               | $V_{CE} = 2\text{V}, I_C = 1\text{A}$                           | 300  | -    | -    |               |
|                                      |               | $V_{CE} = 2\text{V}, I_C = 2\text{A}$                           | 200  | -    | -    |               |
|                                      |               | $V_{CE} = 2\text{V}, I_C = 3\text{A}$                           | 100  | -    | -    |               |
| Collector-emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = 500\text{mA}, I_B = 50\text{mA}$                         | -    | -    | 80   | mV            |
|                                      |               | $I_C = 1\text{A}, I_B = 50\text{mA}$                            | -    | -    | 160  |               |
|                                      |               | $I_C = 2\text{A}, I_B = 100\text{mA}$                           | -    | -    | 280  |               |
|                                      |               | $I_C = 2\text{A}, I_B = 200\text{mA}$                           | -    | -    | 260  |               |
|                                      |               | $I_C = 3\text{A}, I_B = 300\text{mA}$                           | -    | -    | 370  |               |
| Base-emitter Saturation Voltage      | $V_{BE(sat)}$ | $I_C = 2\text{A}, I_B = 100\text{mA}$                           | -    | -    | 1.1  | V             |
|                                      |               | $I_C = 3\text{A}, I_B = 300\text{mA}$                           | -    | -    | 1.2  |               |
| Base-emitter Voltage                 | $V_{BE(on)}$  | $I_C = 1\text{A}, V_{CE} = 2\text{V}$                           | -    | -    | 1.2  | V             |
| Transition Frequency                 | $f_T$         | $V_{CE} = 5\text{V}, I_C = 100\text{mA}$<br>$f = 100\text{MHz}$ | 100  | -    | -    | MHz           |
| Output Capacitance                   | $C_{ob}$      | $V_{CB} = 10\text{V}, I_E = I_C = 0$<br>$f = 1\text{MHz}$       | -    | -    | 25   | pF            |

Ratings and Characteristic Curves (@  $T_A = 25^\circ\text{C}$  unless otherwise specified)

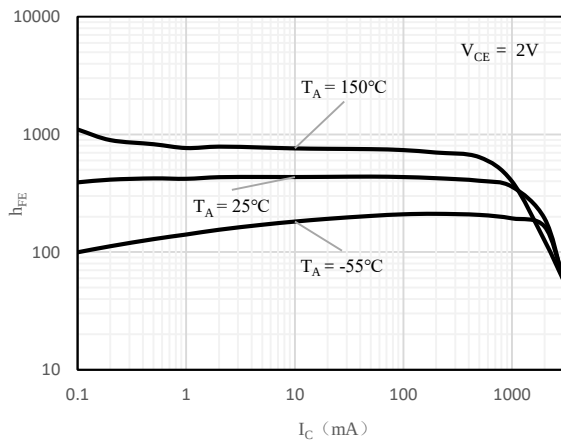


Fig 1  $h_{FE}$  vs.  $I_C$

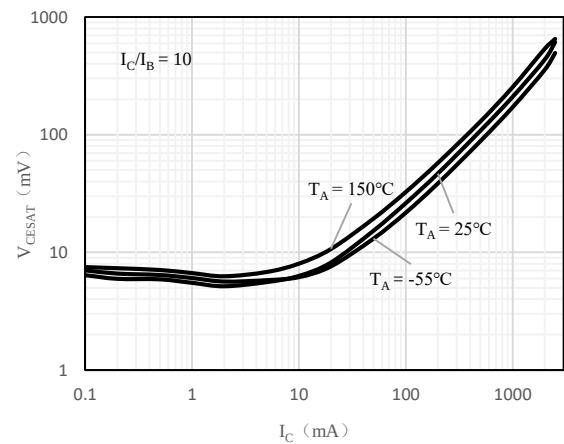


Fig 2  $V_{CE(sat)}$  vs.  $I_C$

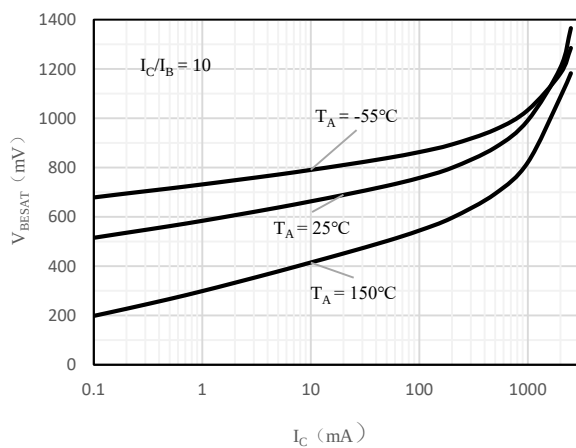


Fig 3  $V_{BE(sat)}$  vs.  $I_C$

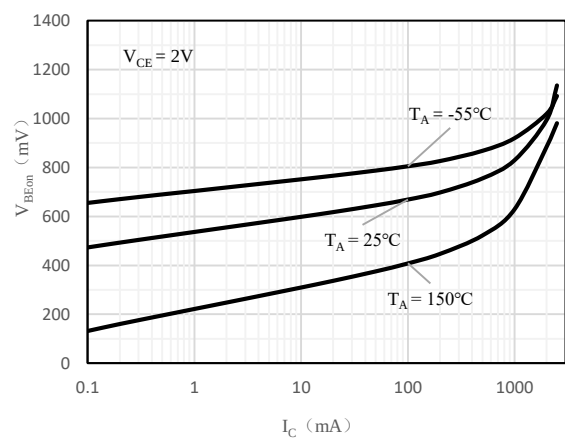
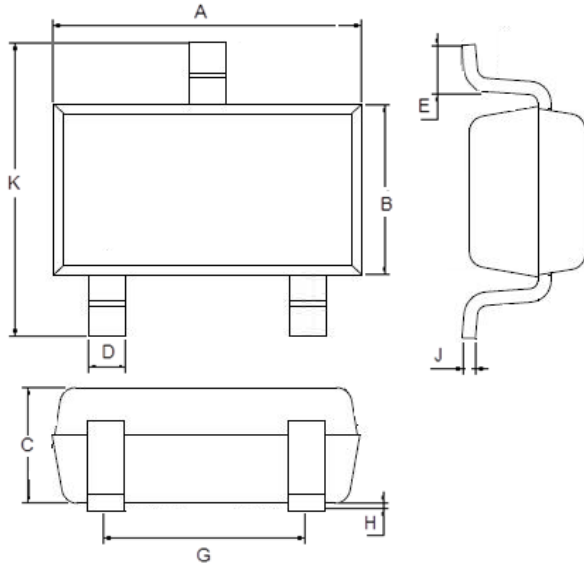


Fig 4  $V_{BE(on)}$  vs.  $I_C$

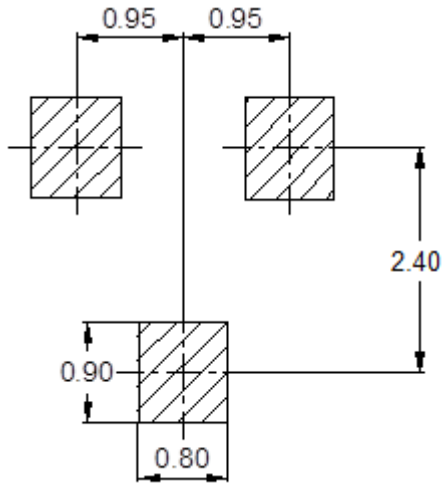
## Package Outline Dimensions (Unit: mm)



| SOT-23-3L |      |      |
|-----------|------|------|
| Dimension | Min. | Max. |
| A         | 2.80 | 3.00 |
| B         | 1.50 | 1.70 |
| C         | 1.00 | 1.20 |
| D         | 0.35 | 0.45 |
| E         | 0.35 | 0.55 |
| G         | 1.80 | 2.00 |
| H         | 0.02 | 0.10 |
| J         | 0.10 | 0.20 |
| K         | 2.60 | 3.00 |

## Mounting Pad Layout (Unit: mm)

### SOT-23-3L



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