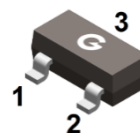
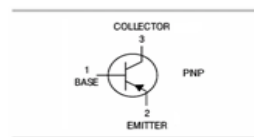


### Features

- Excellent  $h_{FE}$  Linearity
- Complementary to T2SC4617
- RoHS compliant with Halogen-free
- Qualified to AEC-Q101 Standards

HF



SOT-523

### Mechanical Data

- Case: SOT-523
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208

### Ordering Information

| Part Number | Package | Shipping Quantity      | Marking Code |
|-------------|---------|------------------------|--------------|
| T2SA1774-Q  | SOT-523 | 3000 pcs / Tape & Reel | FQ           |
| T2SA1774-R  | SOT-523 | 3000 pcs / Tape & Reel | FR           |
| T2SA1774-S  | SOT-523 | 3000 pcs / Tape & Reel | FS           |

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

| Parameter                           | Symbol    | Value | Unit |
|-------------------------------------|-----------|-------|------|
| Collector-Base Breakdown Voltage    | $V_{CBO}$ | -60   | V    |
| Collector-Emitter Breakdown Voltage | $V_{CEO}$ | -50   | V    |
| Emitter-Base Breakdown Voltage      | $V_{EBO}$ | -6    | V    |
| Continuous Collector Current        | $I_C$     | -150  | mA   |
| Peak Collector Current              | $I_{CM}$  | -200  | mA   |

### Thermal Characteristics

| Parameter                                         | Symbol          | Value      | Unit               |
|---------------------------------------------------|-----------------|------------|--------------------|
| Power Dissipation( $T_A = 25^\circ\text{C}$ )     | $P_D$           | 150        | mW                 |
| Thermal Resistance Junction-to-Air <sup>*1</sup>  | $R_{\theta JA}$ | 160        | $^\circ\text{C/W}$ |
| Thermal Resistance Junction-to-Case <sup>*1</sup> | $R_{\theta JC}$ | 90         | $^\circ\text{C/W}$ |
| Thermal Resistance Junction-to-Lead <sup>*1</sup> | $R_{\theta JL}$ | 80         | $^\circ\text{C/W}$ |
| Junction Temperature Range                        | $T_J$           | -55 ~ +150 | $^\circ\text{C}$   |
| Storage Temperature Range                         | $T_{STG}$       | -55 ~ +150 | $^\circ\text{C}$   |

Note 1: The data tested by surface mounted on a 1 inch<sup>2</sup> FR-4 board with 2OZ copper

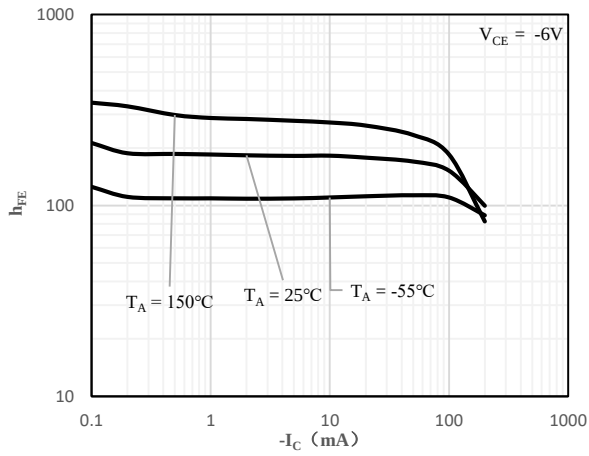
### Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

| Parameter                            | Symbol        | Test Condition                                                  | Min. | Typ. | Max. | Unit          |
|--------------------------------------|---------------|-----------------------------------------------------------------|------|------|------|---------------|
| Collector-Base Breakdown Voltage     | $V_{(BR)CBO}$ | $I_C = -50\mu\text{A}, I_E = 0$                                 | -60  | -    | -    | V             |
| Collector-Emitter Breakdown Voltage  | $V_{(BR)CEO}$ | $I_C = -1\text{mA}, I_B = 0$                                    | -50  | -    | -    | V             |
| Emitter-Base Breakdown Voltage       | $V_{(BR)EBO}$ | $I_E = -50\mu\text{A}, I_C = 0$                                 | -6   | -    | -    | V             |
| Collector Cut-off Current            | $I_{CBO}$     | $V_{CB} = -60\text{V}, I_E = 0$                                 | -    | -    | -0.1 | $\mu\text{A}$ |
| Emitter Cut-off Current              | $I_{EBO}$     | $V_{EB} = -6\text{V}, I_C = 0$                                  | -    | -    | -0.1 | $\mu\text{A}$ |
| DC Current Gain                      | $h_{FE}$      | $V_{CE} = -6\text{V}, I_C = -1\text{mA}$                        | 120  | -    | 560  | -             |
| Collector-emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = -50\text{mA}, I_B = -5\text{mA}$                         | -    | -    | -0.5 | V             |
| Base-emitter Saturation Voltage      | $V_{BE(sat)}$ | $I_C = -50\text{mA}, I_B = -5\text{mA}$                         | -    | -    | -1.2 | V             |
| Transition Frequency                 | $f_T$         | $I_C = -2\text{mA}, V_{CE} = -12\text{V}$<br>$f = 30\text{MHz}$ | -    | 140  | -    | MHz           |
| Output Capacitance                   | $C_{ob}$      | $V_{CB} = -12\text{V}, I_E = 0\text{A}, f = 1\text{MHz}$        | -    | -    | 5    | pF            |

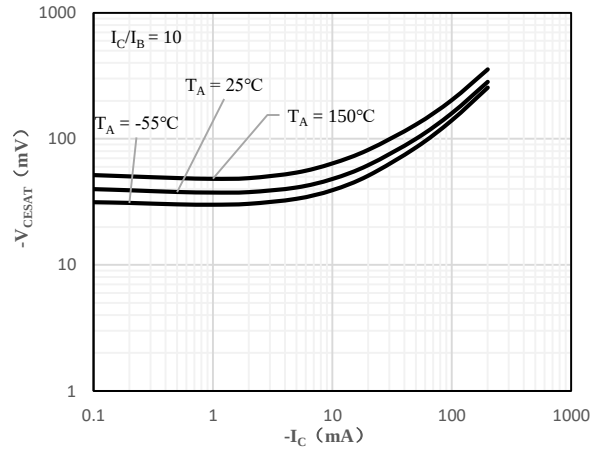
### Classification of $h_{FE}$

| Rank    | Q       | R       | S       |
|---------|---------|---------|---------|
| Range   | 120-270 | 180-390 | 270-560 |
| Marking | FQ      | FR      | FS      |

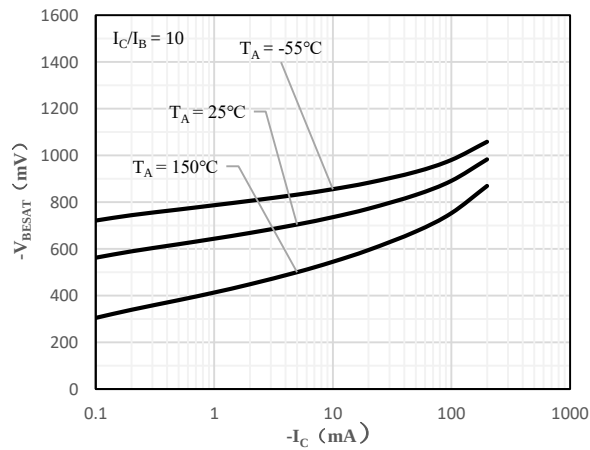
**Ratings and Characteristic Curves** (@  $T_A = 25^\circ\text{C}$  unless otherwise specified)



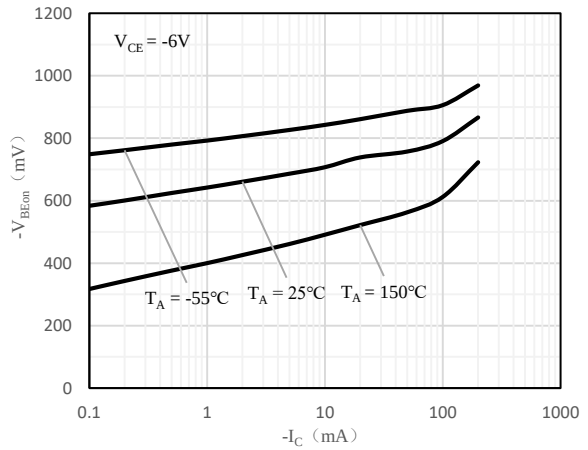
**Fig 1**  $h_{FE}$  vs.  $I_C$



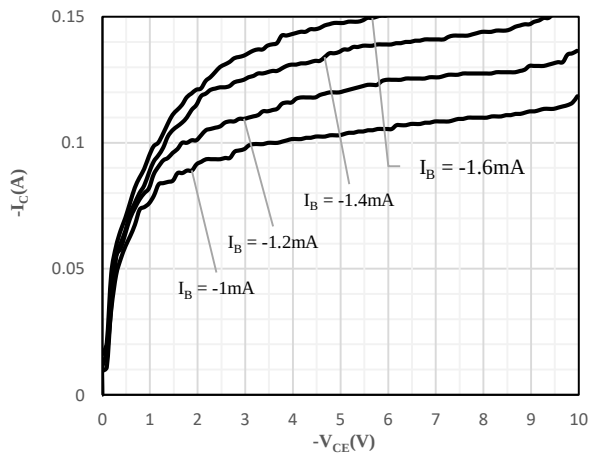
**Fig 2**  $V_{CE(sat)}$  vs.  $I_C$



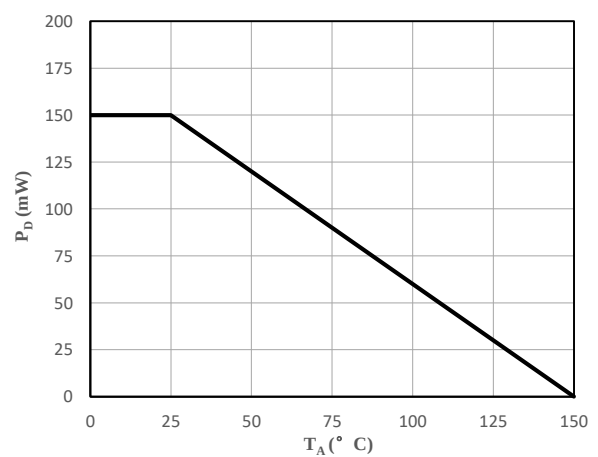
**Fig 3**  $V_{BE(sat)}$  vs.  $I_C$



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



**Fig 5**  $I_C$  vs.  $V_{CE}$



**Fig 6**  $P_D$  vs.  $T_A$

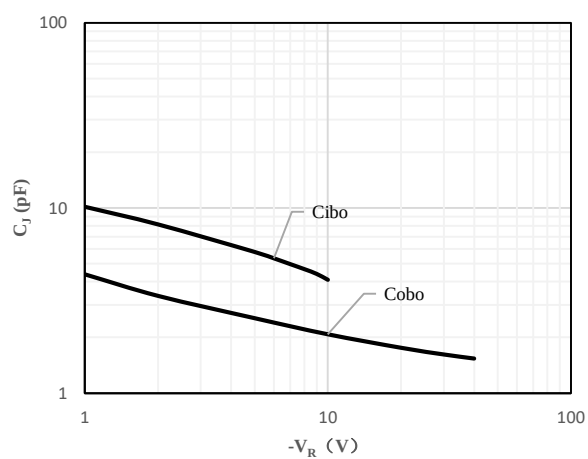
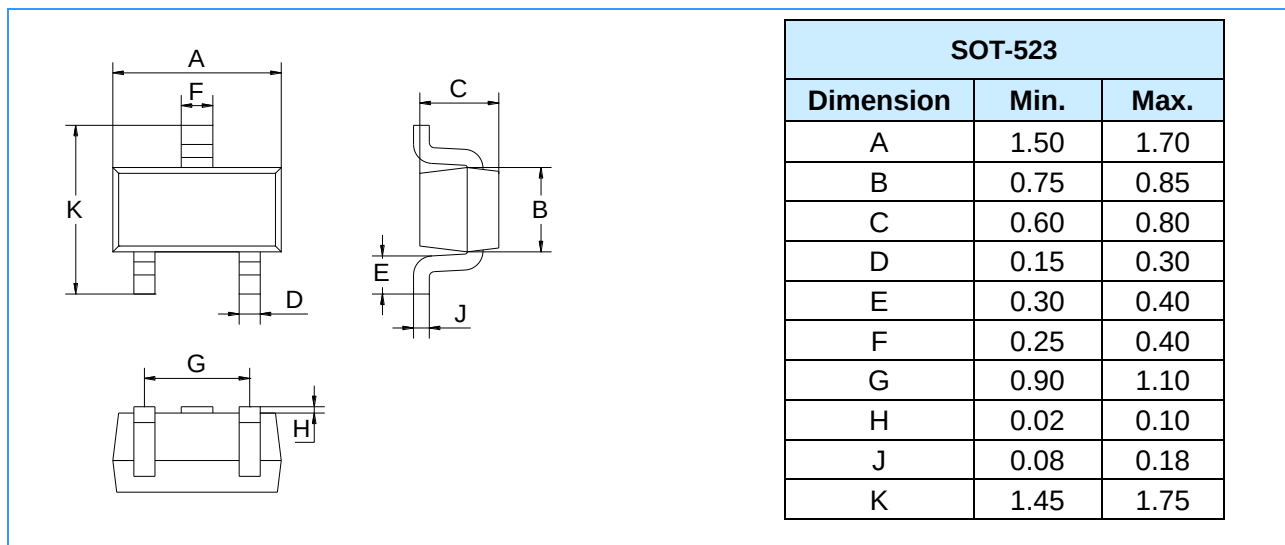


Fig 7  $C_j$  vs.  $V_r$

**Package Outline Dimensions** (Unit: mm)



**Mounting Pad Layout** (Unit: mm)

