

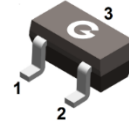
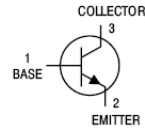
## Features

- Low voltage use
- High  $f_T$
- Low Cob

HF

## Mechanical Data

- Case: SOT-523
- Molding compound, UL flammability classification rating 94V-0
- Terminals: Matte tin plated leads, solderable per MIL-STD-202, Method 208



SOT-523

## Ordering Information

| Part Number | Package | Shipping               | Marking Code |
|-------------|---------|------------------------|--------------|
| 2SC5006T    | SOT-523 | 3000 pcs / Tape & Reel | 6T           |

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

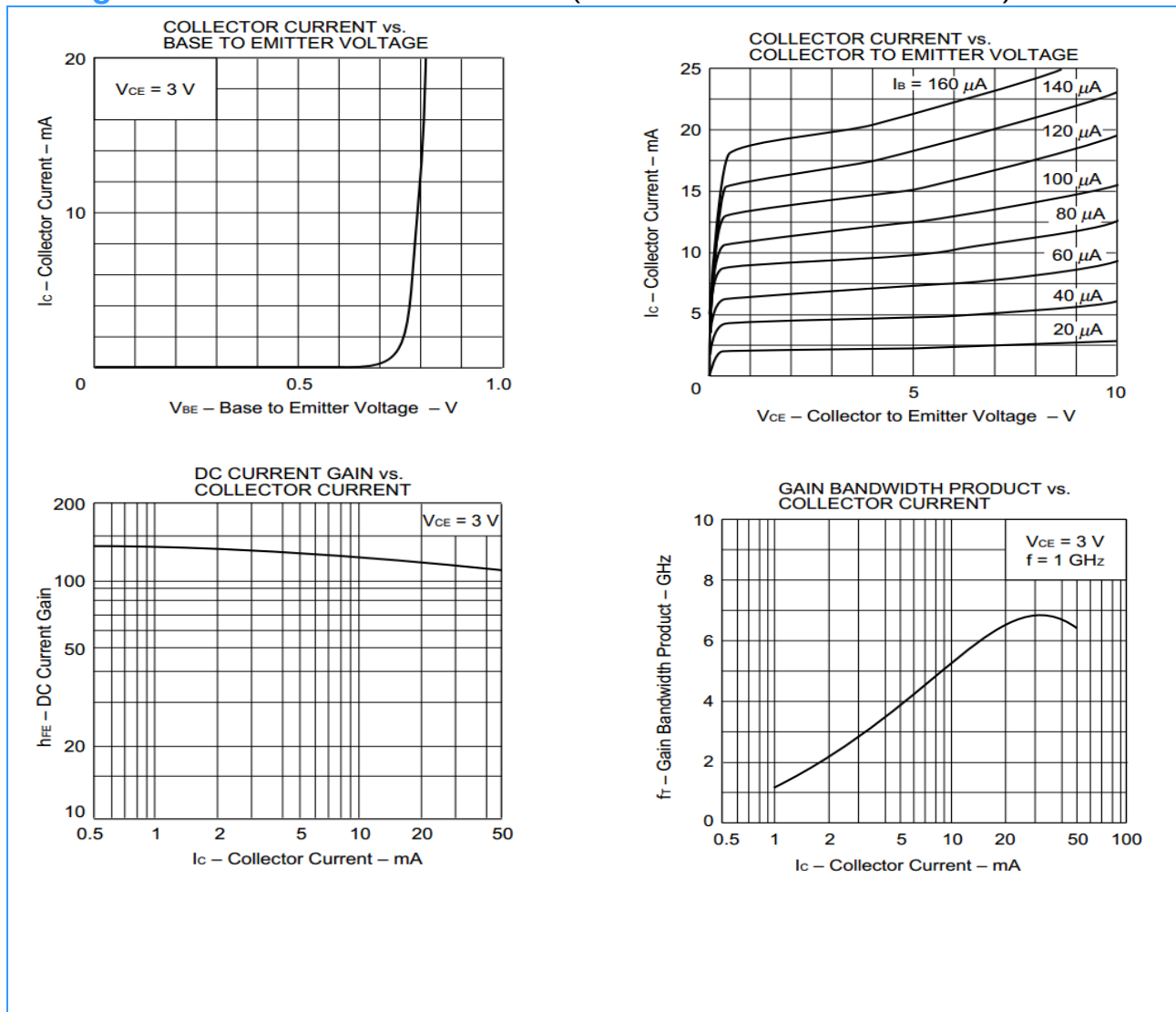
| Symbol                        | Parameter                                              | Value       | Units                |
|-------------------------------|--------------------------------------------------------|-------------|----------------------|
| <b>MAXIMUM RATINGS</b>        |                                                        |             |                      |
| $V_{CBO}$                     | Collector-Base Voltage                                 | 20          | V                    |
| $V_{CEO}$                     | Collector-Emitter Voltage                              | 12          | V                    |
| $V_{EBO}$                     | Emitter-Base Voltage                                   | 3           | V                    |
| $I_C$                         | Collector Current - Continuous                         | 0.1         | A                    |
| <b>Thermal Characteristic</b> |                                                        |             |                      |
| $P_{tot}$                     | Total Power Dissipation, $T_a \leq 25^{\circ}\text{C}$ | 125         | mW                   |
| $T_J$                         | Junction Temperature                                   | -55 to +150 | $^{\circ}\text{C}$   |
| $T_{STG}$                     | Junction and Storage Temperature                       | -55 to +150 | $^{\circ}\text{C}$   |
| $R_{th(j-a)}$                 | Thermal resistance from junction to ambient            | 1000        | $^{\circ}\text{C/W}$ |

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

| Parameter                           | Symbol        | Test conditions                                                  | MIN | TYP  | MAX | UNIT          |
|-------------------------------------|---------------|------------------------------------------------------------------|-----|------|-----|---------------|
| Collector-Base Breakdown Voltage    | $V_{(BR)CBO}$ | $I_C = 10\mu\text{A}$ , $I_E = 0$                                | 20  | -    | -   | V             |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C = 1\text{mA}$ , $I_B = 0$                                   | 12  | -    | -   | V             |
| Emitter-Base Breakdown Voltage      | $V_{(BR)EBO}$ | $I_E = 10\mu\text{A}$ , $I_C = 0$                                | 3   | -    | -   | V             |
| RCollector Cut-Off Current          | $I_{CBO}$     | $V_{CB} = 10\text{V}$ , $I_E = 0$                                | -   | -    | 1   | $\mu\text{A}$ |
| Emitter Cut-Off Current             | $I_{EBO}$     | $V_{EB} = 1\text{V}$ , $I_C = 0$                                 | -   | -    | 1   | $\mu\text{A}$ |
| DC Current Gain (Note 1)            | $h_{FE}$      | $V_{CE} = 3\text{V}$ , $I_C = 7\text{mA}$                        | 80  | -    | 160 |               |
| Transition Frequency                | $f_T$         | $V_{CE} = 3\text{V}$ , $I_C = 7\text{mA}$ ,<br>$f = 1\text{GHz}$ | 3   | 4.5  | -   | GHz           |
| Collector Output Capacitance        | $C_{ob}$      | $V_{CB} = 10\text{V}$ , $I_E = 0$ , $f = 1\text{MHz}$            | -   | 0.55 | 1   | pF            |

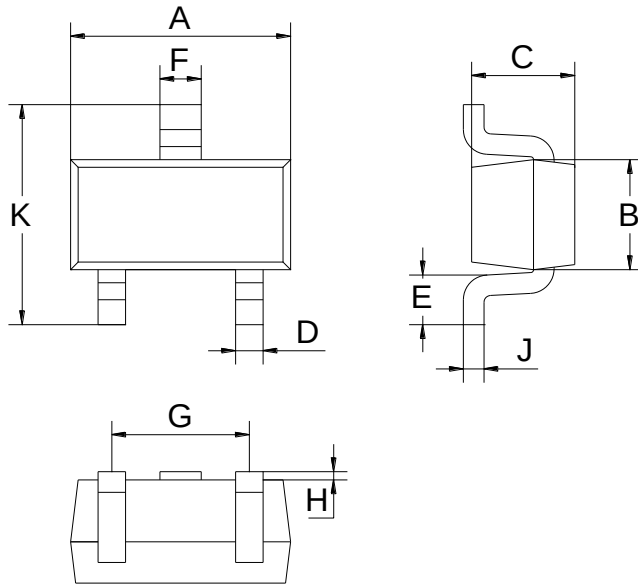
Note1: Pulsed Condition: Pulse Width = 300 sec, Duty Cycle  $\leq 2\%$

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



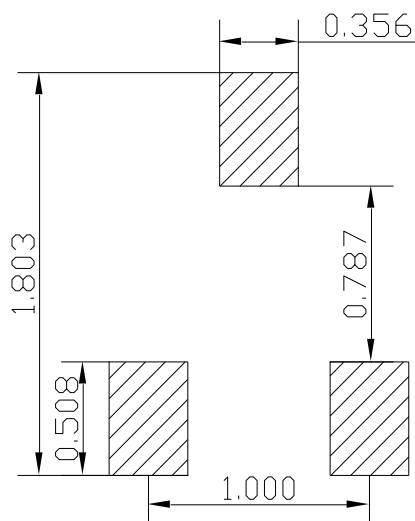
**Package Outline Dimensions** (unit: mm)

**SOT-523**



| SOT-523 |      |      |
|---------|------|------|
| Dim     | Min  | Max  |
| A       | 1.50 | 1.70 |
| B       | 0.75 | 0.85 |
| C       | 0.60 | 0.80 |
| D       | 0.15 | 0.30 |
| E       | 0.30 | 0.40 |
| F       | 0.25 | 0.40 |
| G       | 0.90 | 1.10 |
| H       | 0.02 | 0.10 |
| J       | 0.08 | 0.18 |
| K       | 1.45 | 1.75 |

**SOLDERING FOOTPRINT** (unit: mm)



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