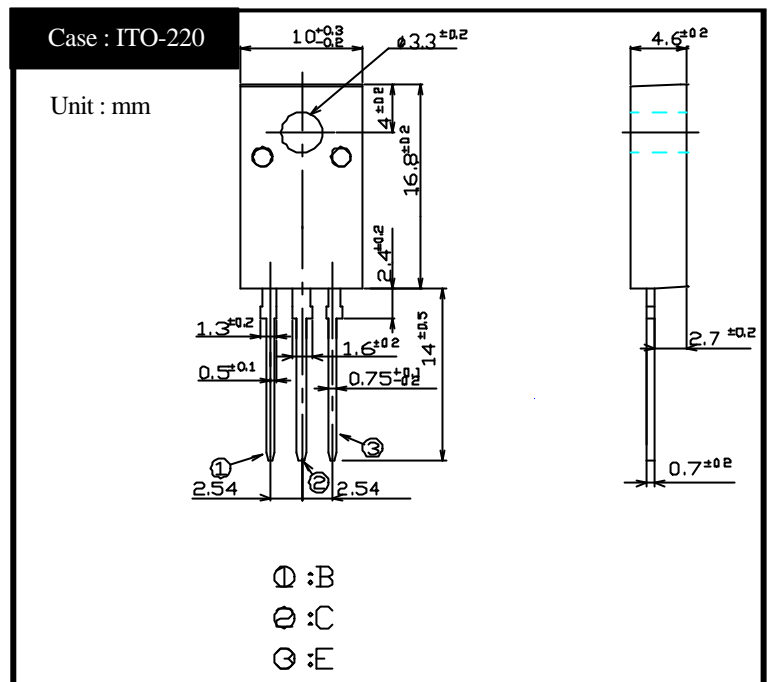


**2SC4833**  
**(TP5V40FS)**

**5A NPN**

### OUTLINE DIMENSIONS



### RATINGS

#### Absolute Maximum Ratings

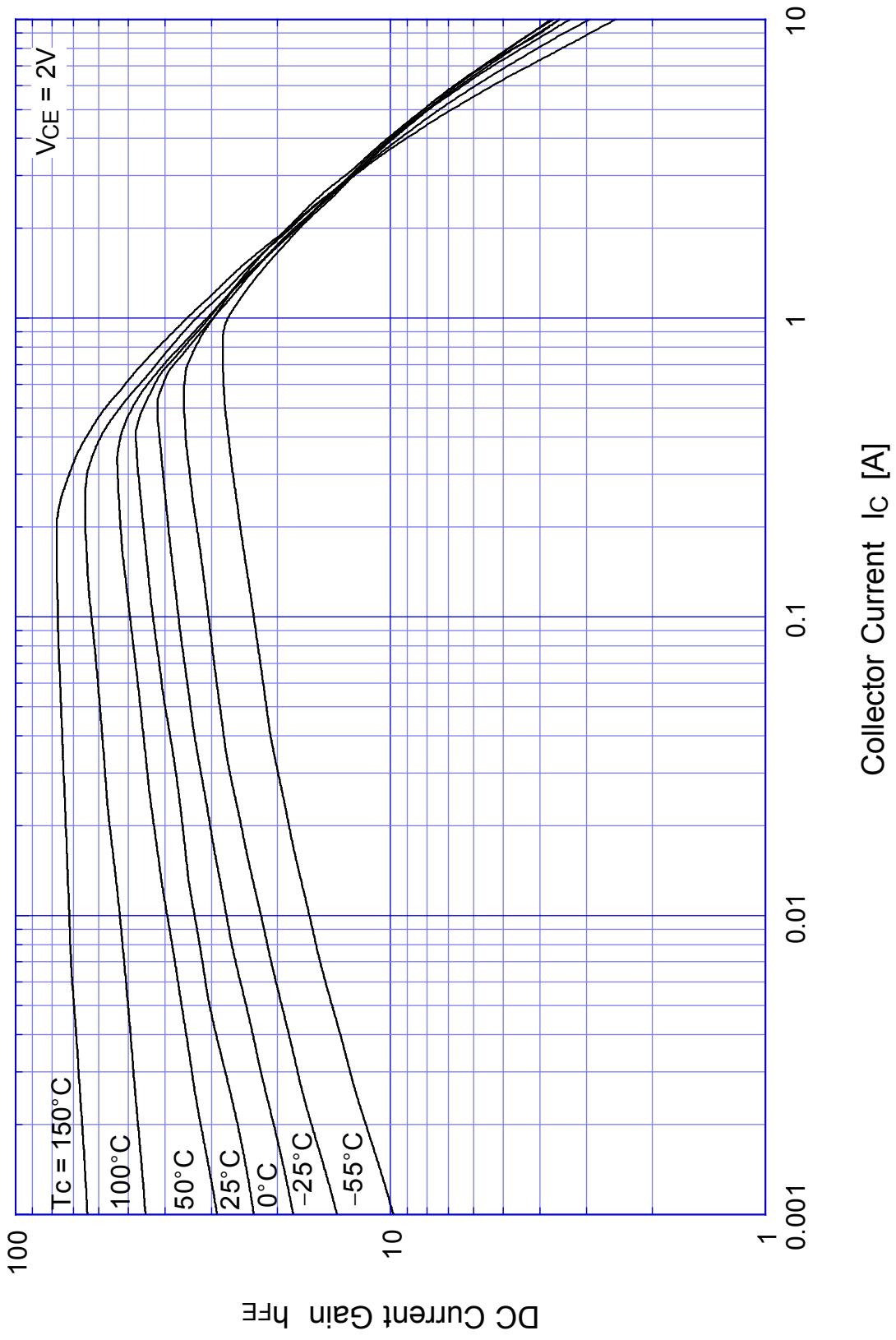
| Item                         | Symbol           | Conditions                     | Ratings   | Unit |
|------------------------------|------------------|--------------------------------|-----------|------|
| Storage Temperature          | T <sub>stg</sub> |                                | -55 ~ 150 |      |
| Junction Temperature         | T <sub>j</sub>   |                                | 150       |      |
| Collector to Base Voltage    | V <sub>CB0</sub> |                                | 500       | V    |
| Collector to Emitter Voltage | V <sub>CEO</sub> |                                | 400       | V    |
| Emitter to Base Voltage      | V <sub>EBO</sub> |                                | 7         | V    |
| Collector Current DC         | I <sub>C</sub>   |                                | 5         | A    |
| Collector Current Peak       | I <sub>CP</sub>  |                                | 10        |      |
| Base Current DC              | I <sub>B</sub>   |                                | 2         | A    |
| Base Current Peak            | I <sub>BP</sub>  |                                | 4         |      |
| Total Transistor Dissipation | P <sub>T</sub>   | T <sub>C</sub> = 25            | 35        | W    |
| Dielectric Strength          | V <sub>dis</sub> | Terminals to case, AC 1 minute | 2         | kV   |
| Mounting Torque              | TOR              | (Recommended torque : 0.3N·m)  | 0.5       | N·m  |

#### Electrical Characteristics (T<sub>C</sub>=25 )

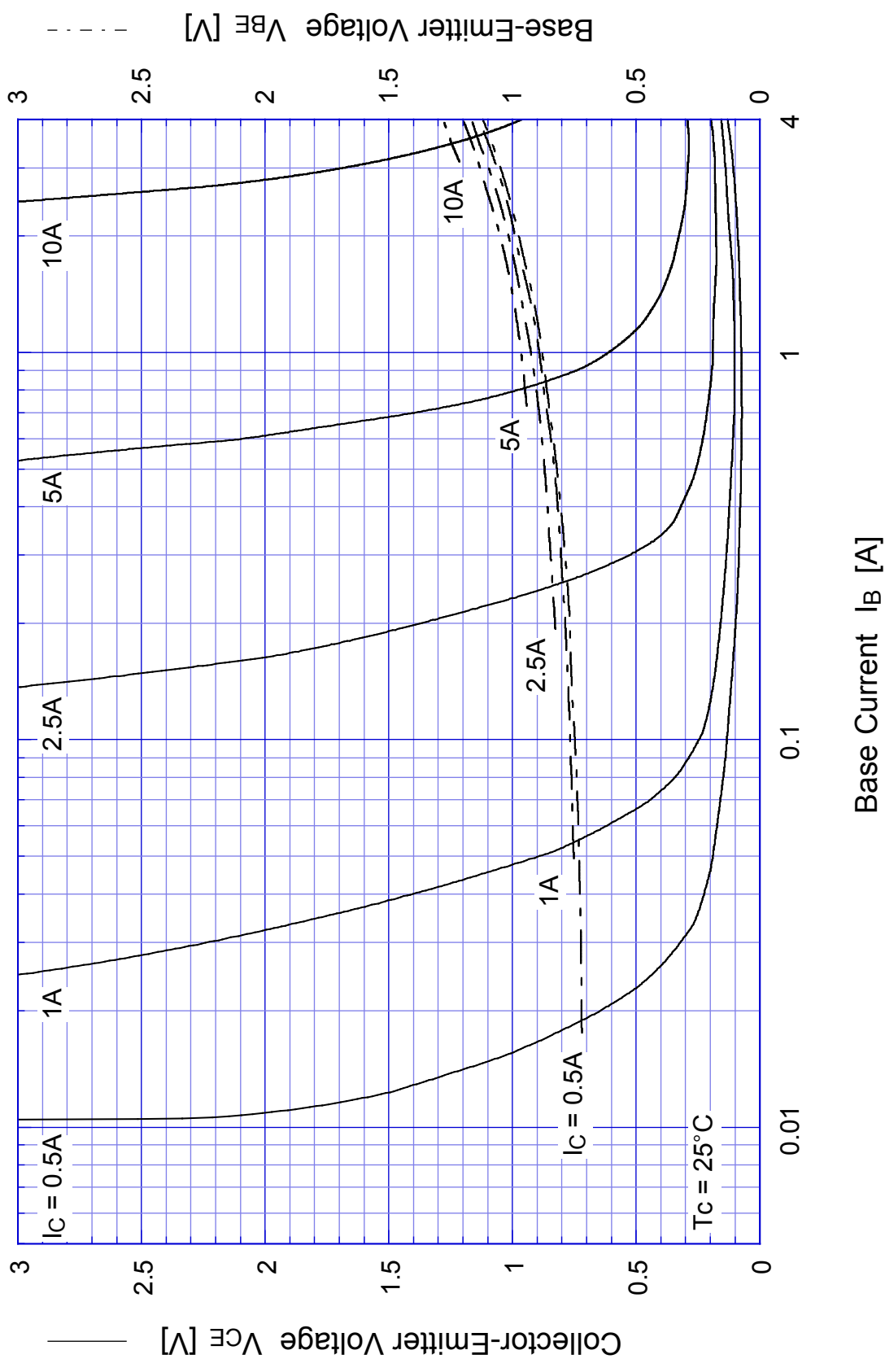
| Item                                    | Symbol                | Conditions                                   | Ratings  | Unit |
|---|-----------------------|--|----------|------|
| Collector to Emitter Sustaining Voltage | V <sub>CEO(sus)</sub> | I <sub>C</sub> = 0.1A                        | Min 400  | V    |
| Collector Cutoff Current                | I <sub>CB0</sub>      | At rated Voltage                             | Max 0.1  | mA   |
|   | I <sub>CEO</sub>      |  | Max 0.1  |      |
| Emitter Cutoff Current                  | I <sub>EBO</sub>      | At rated Voltage                             | Max 0.1  | mA   |
| DC Current Gain                         | h <sub>FE</sub>       | V <sub>CE</sub> = 2V, I <sub>C</sub> = 2.5A  | 10 ~ 25  |      |
|   | h <sub>FEL</sub>      | V <sub>CE</sub> = 2V, I <sub>C</sub> = 1mA   | Min 10   |      |
| Collector to Emitter Saturation Voltage | V <sub>CE(sat)</sub>  | I <sub>C</sub> = 2.5A                        | Max 1.0  | V    |
| Base to Emitter Saturation Voltage      | V <sub>BE(sat)</sub>  | I <sub>B</sub> = 0.5A                        | Max 1.5  | V    |
| Thermal Resistance                      | θ <sub>JC</sub>       | Junction to case                             | Max 3.57 | /W   |
| Transition Frequency                    | f <sub>T</sub>        | V <sub>CE</sub> = 10V, I <sub>C</sub> = 0.5A | TYP 13   | MHz  |
| Turn on Time                            | t <sub>on</sub>       | I <sub>C</sub> = 2.5A                        | Max 0.3  | μs   |
| Storage Time                            | t <sub>s</sub>        | I <sub>B1</sub> = 0.5A, I <sub>B2</sub> = 1A | Max 1.3  |      |
| Fall Time                               | t <sub>f</sub>        | R <sub>L</sub> = 60 Ω, V <sub>BB2</sub> = 4V | Max 0.1  |      |

# 2SC4833

$h_{FE} - I_c$

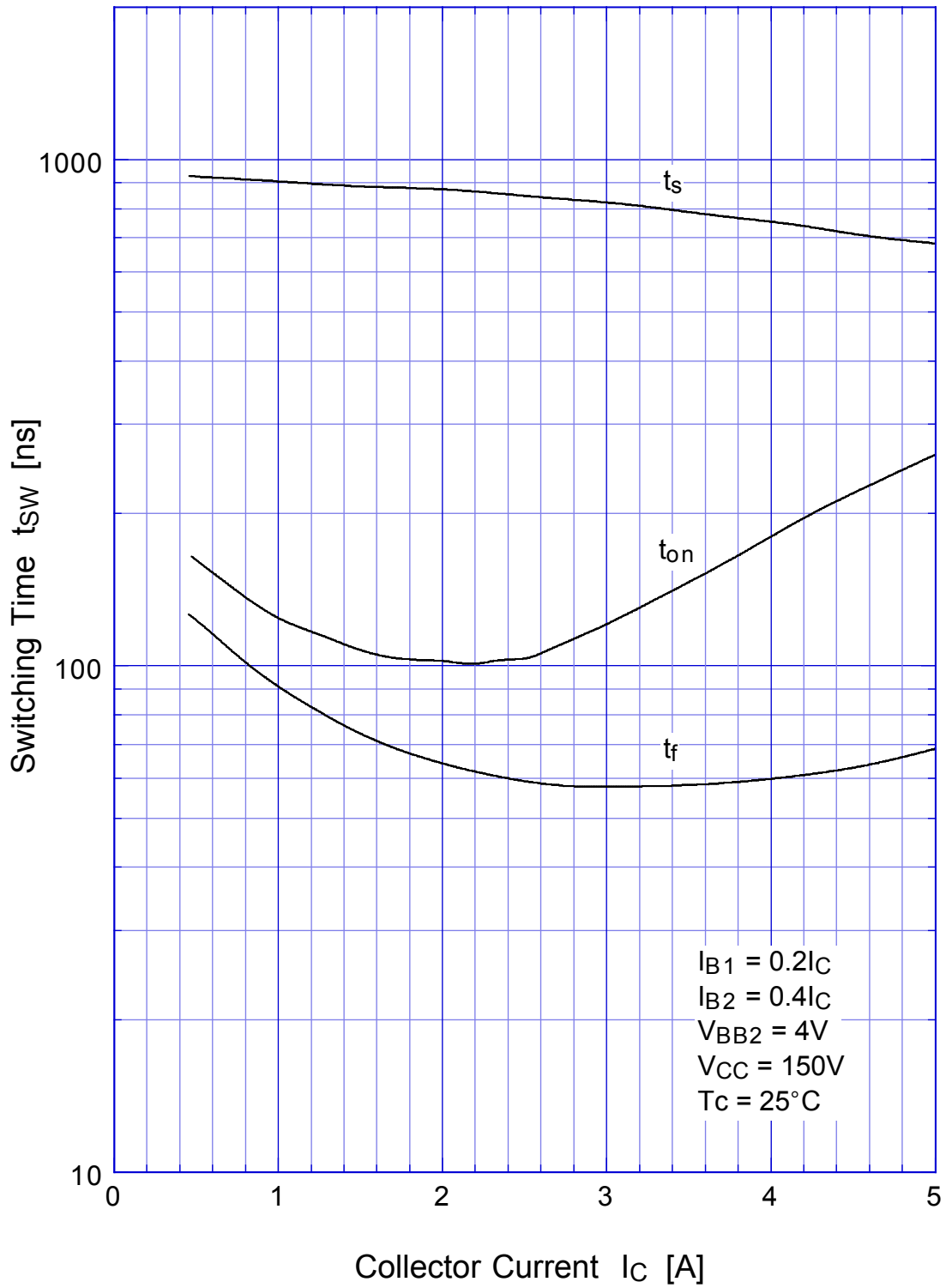


# 2SC4833 Saturation Voltage



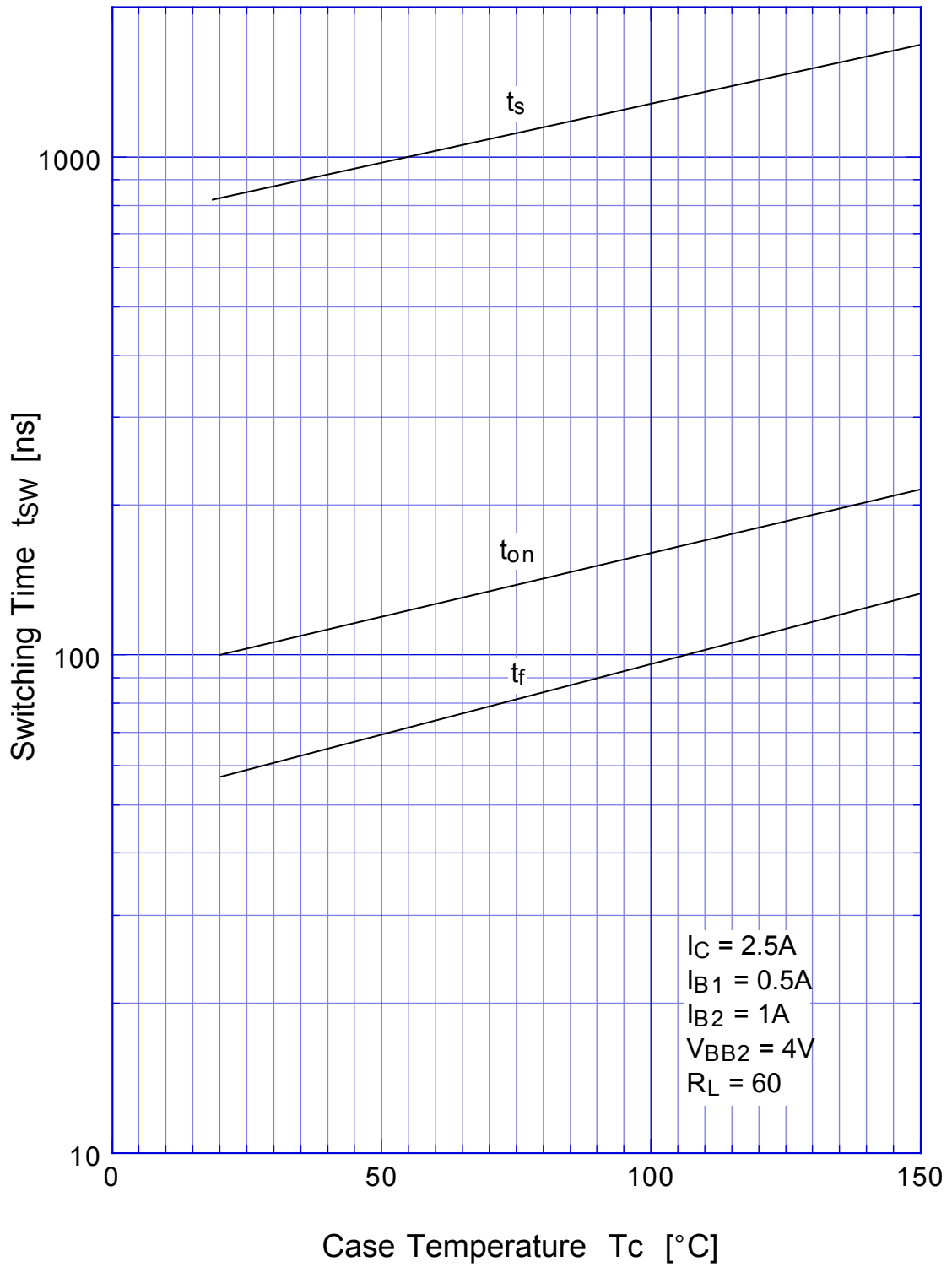
# 2SC4833

## Switching Time - $I_C$



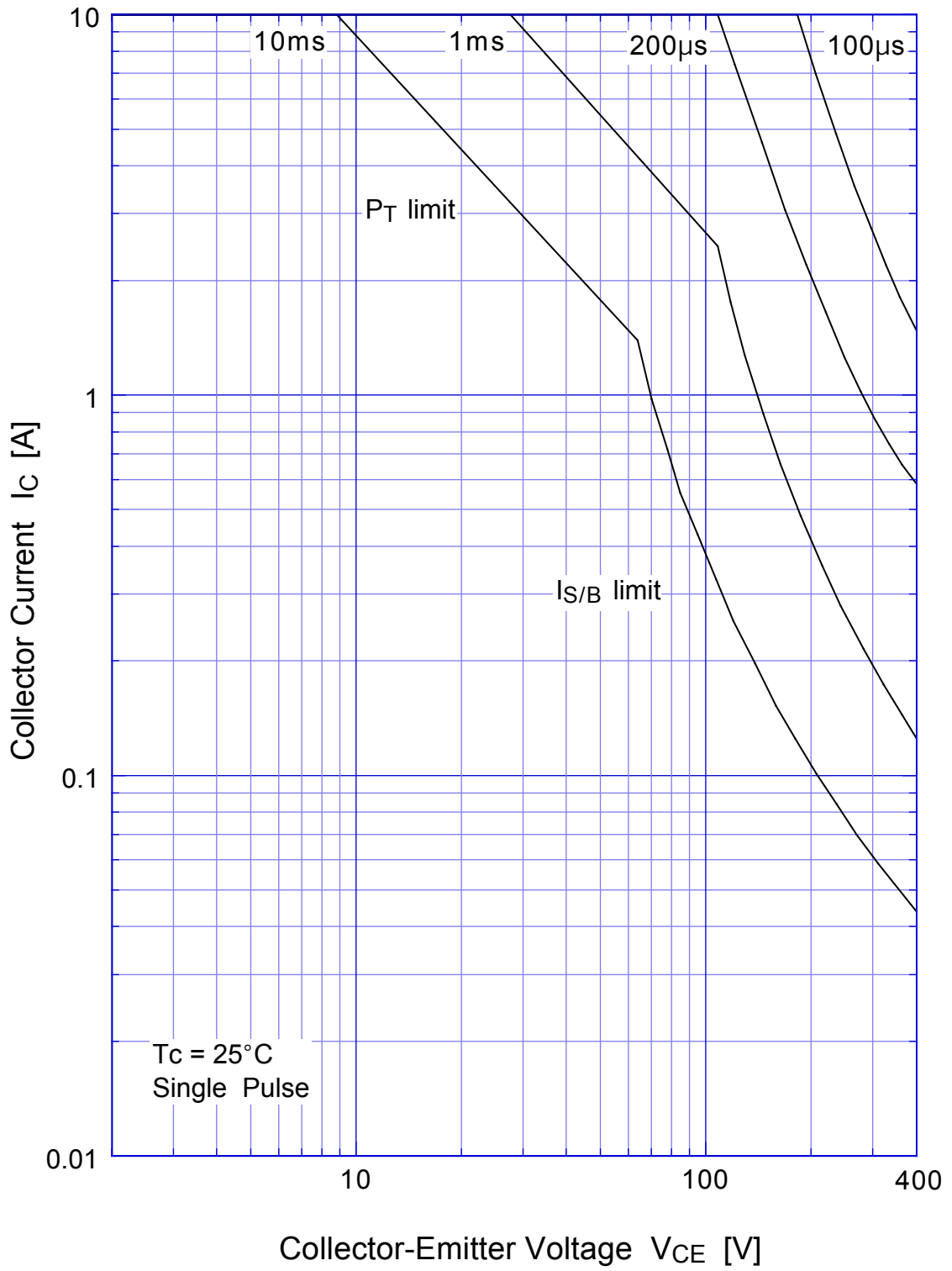
# 2SC4833

## Switching Time - Tc

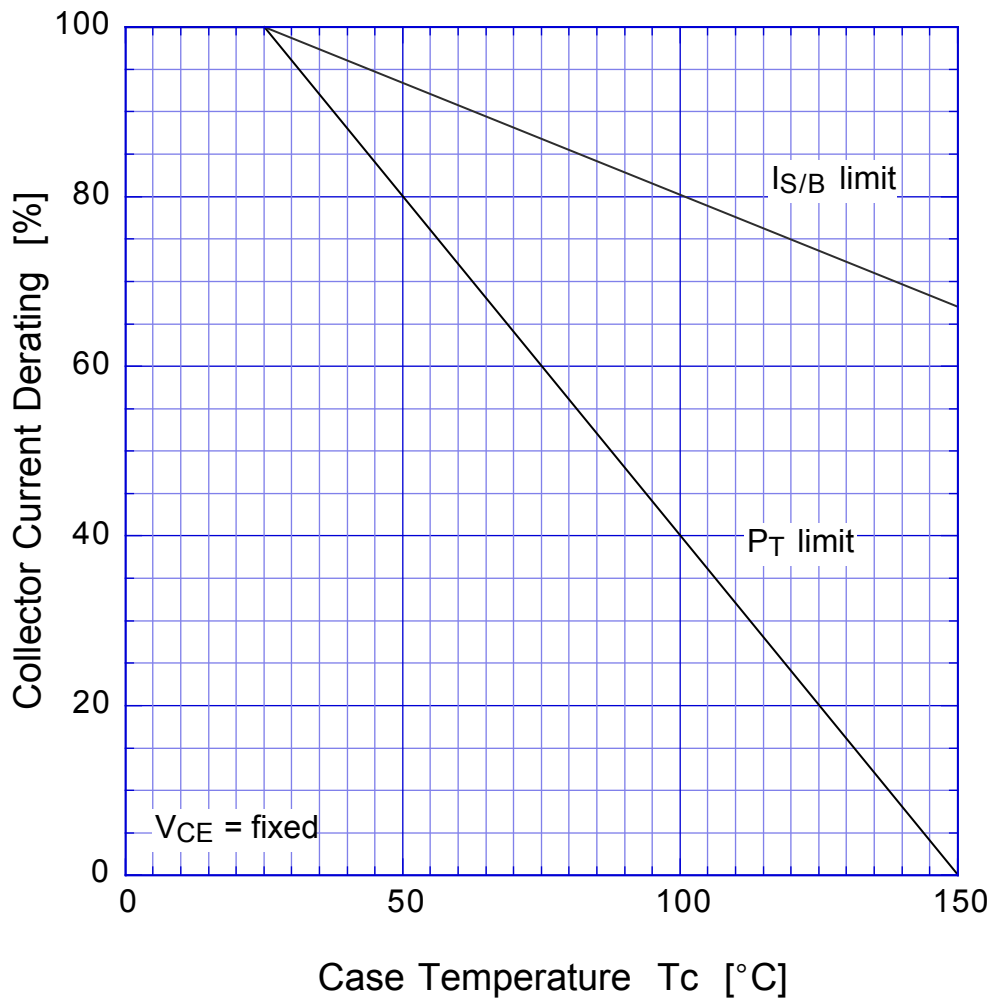


# 2SC4833

# Forward Bias SOA

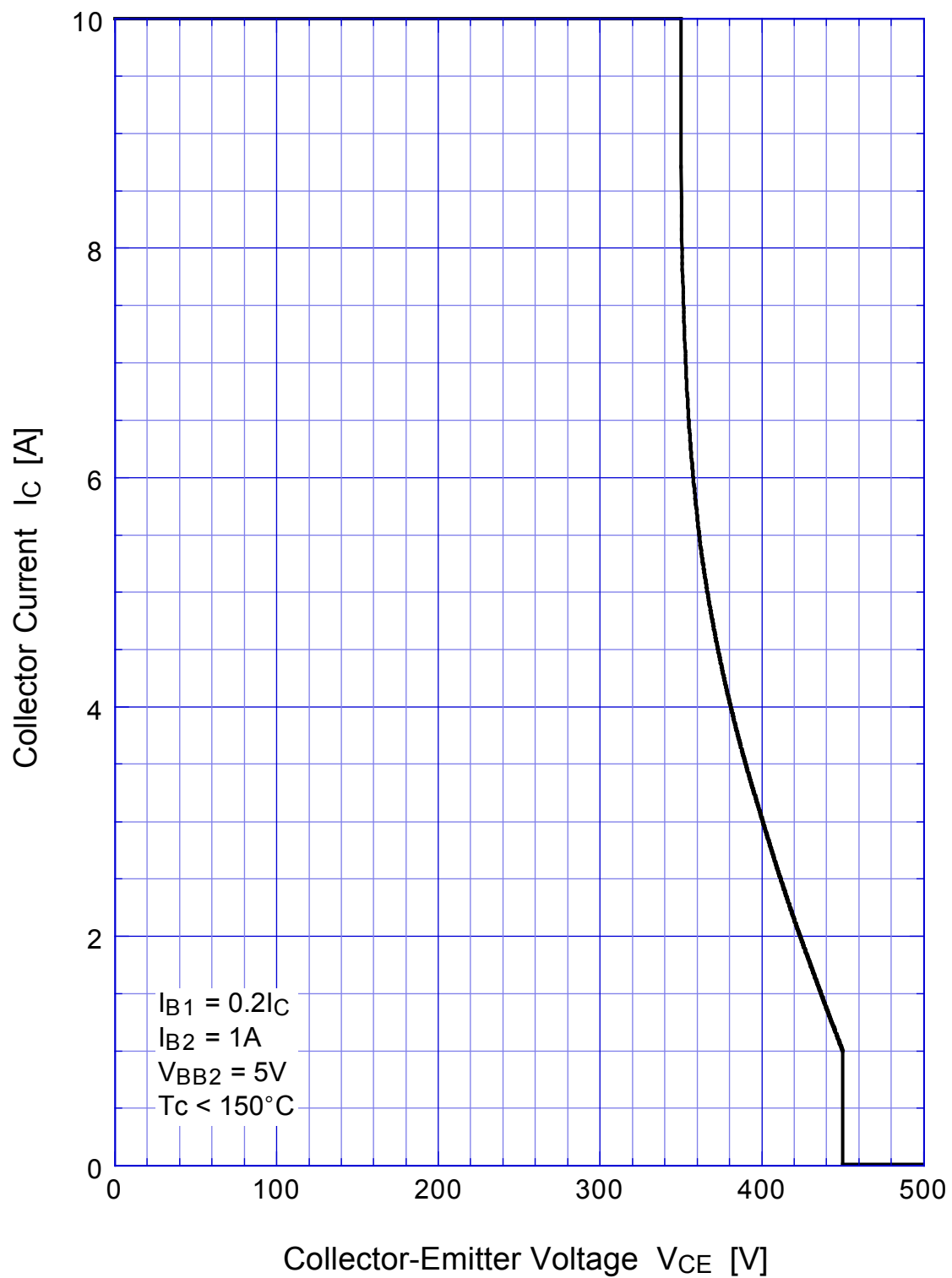


## 2SC4833 Collector Current Derating



2SC4833

Reverse Bias SOA





# 2SC4833 Transient Thermal Impedance

