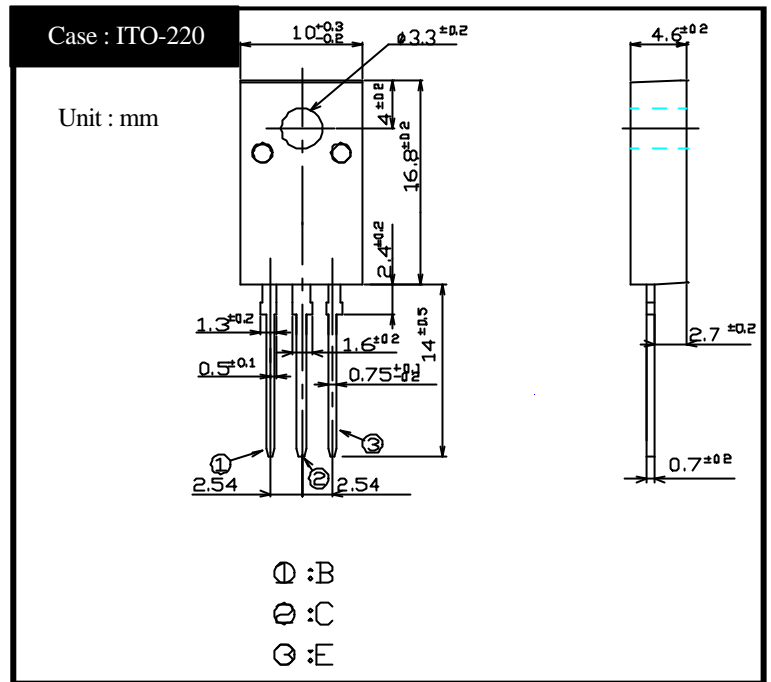


**2SC4149**  
**(TP10S4)**

**10A NPN**

### OUTLINE DIMENSIONS



### RATINGS

#### Absolute Maximum Ratings

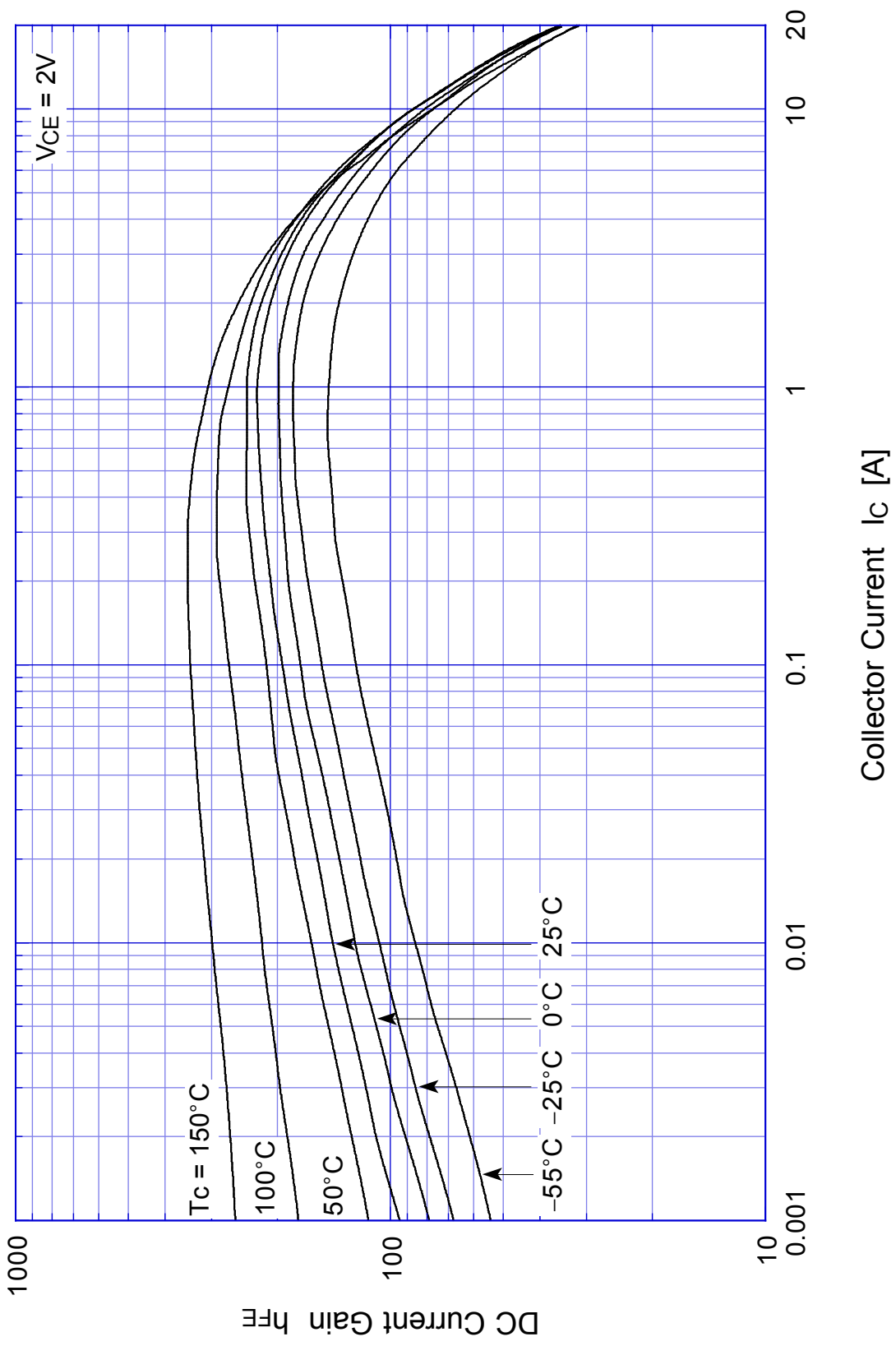
| Item                         | Symbol           | Conditions                     | Ratings   | Unit |
|------------------------------|------------------|--------------------------------|-----------|------|
| Storage Temperature          | T <sub>stg</sub> |                                | -55 ~ 150 |      |
| Junction Temperature         | T <sub>j</sub>   |                                | 150       |      |
| Collector to Base Voltage    | V <sub>CB0</sub> |                                | 60        | V    |
| Collector to Emitter Voltage | V <sub>CE0</sub> |                                | 40        | V    |
| Emitter to Base Voltage      | V <sub>EBO</sub> |                                | 7         | V    |
| Collector Current DC         | I <sub>C</sub>   |                                | 10        | A    |
| Collector Current Peak       | I <sub>CP</sub>  |                                | 20        | A    |
| Base Current DC              | I <sub>B</sub>   |                                | 1.5       | A    |
| Base Current Peak            | I <sub>BP</sub>  |                                | 2         | A    |
| Total Transistor Dissipation | P <sub>T</sub>   | T <sub>C</sub> = 25            | 25        | W    |
| Dielectric Strength          | V <sub>dis</sub> | Terminal 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 )

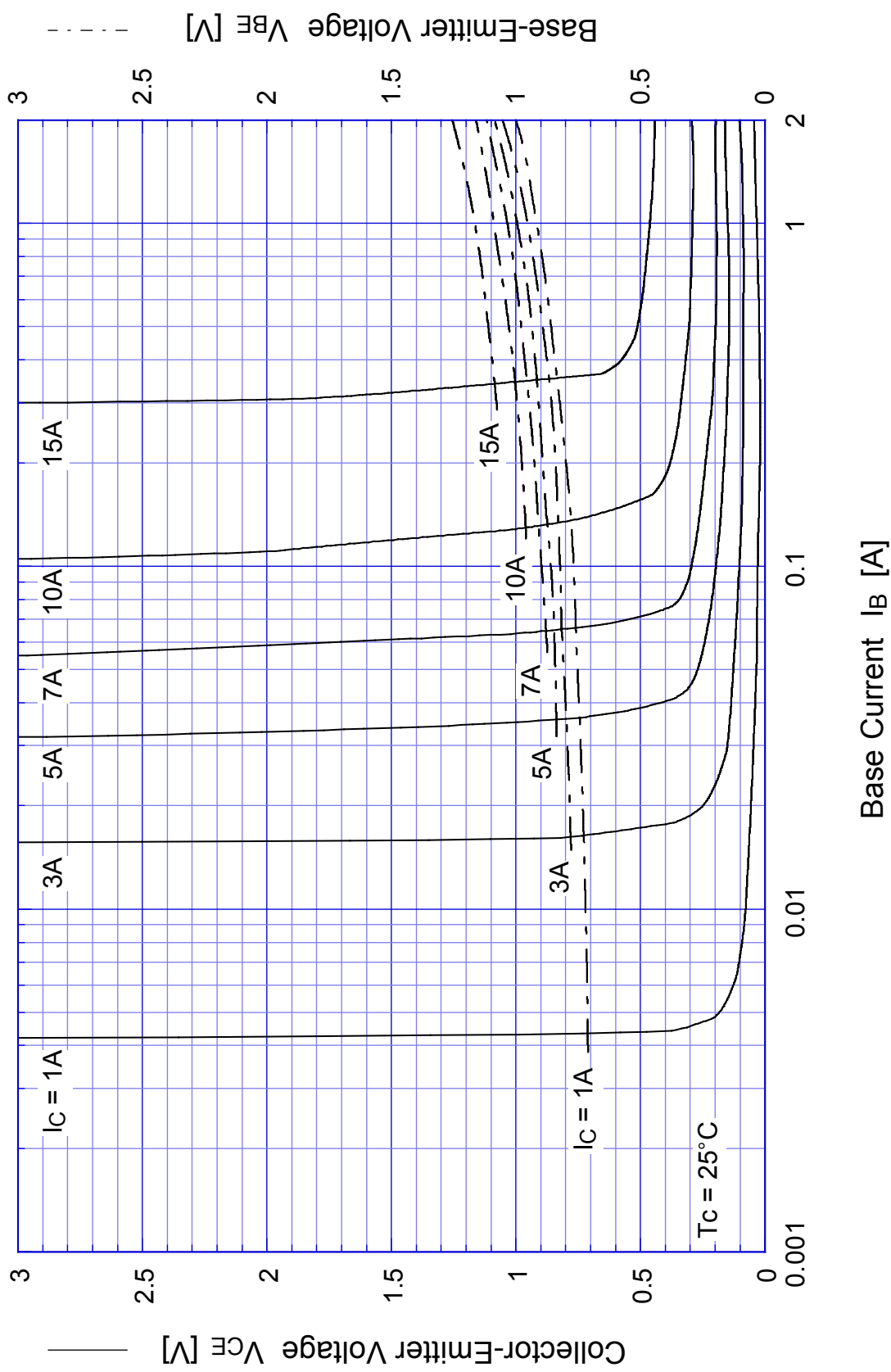
| Item                                    | Symbol                | Conditions   | Ratings | Unit |
|---|-----------------------|--|---------|------|
| Collector to Emitter Sustaining Voltage | V <sub>CE0(sus)</sub> | I <sub>C</sub> = 0.1A  | Min 40  | V    |
| Collector Cutoff Current                | I <sub>CB0</sub>      | At rated Voltage   | Max 0.1 | mA   |
|   |                       |  | 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> = 5A  | Min 70  |      |
| Collector to Emitter Saturation Voltage | V <sub>CE(sat)</sub>  | I <sub>C</sub> = 5A  | Max 0.3 | V    |
| Base to Emitter Saturation Voltage      | V <sub>BE(sat)</sub>  | I <sub>B</sub> = 0.25A   | Max 1.2 | V    |
| Thermal Resistance                      | θ <sub>JC</sub>       | Junction to case   | Max 5   | /W   |
| Transition Frequency                    | f <sub>T</sub>        | V <sub>CE</sub> = 10V, I <sub>C</sub> = 1A   | TYP 50  | MHz  |
| Turn on Time                            | t <sub>on</sub>       | I <sub>C</sub> = 5A<br>I <sub>B1</sub> = 0.5A, I <sub>B2</sub> = 0.5A<br>R <sub>L</sub> = 5 Ω, V <sub>BB2</sub> = 4V | Max 0.3 | μs   |
| Storage Time                            | t <sub>s</sub>        |  | Max 1.5 |      |
| Fall Time                               | t <sub>f</sub>        |  | Max 0.5 |      |

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$h_{FE} - I_C$

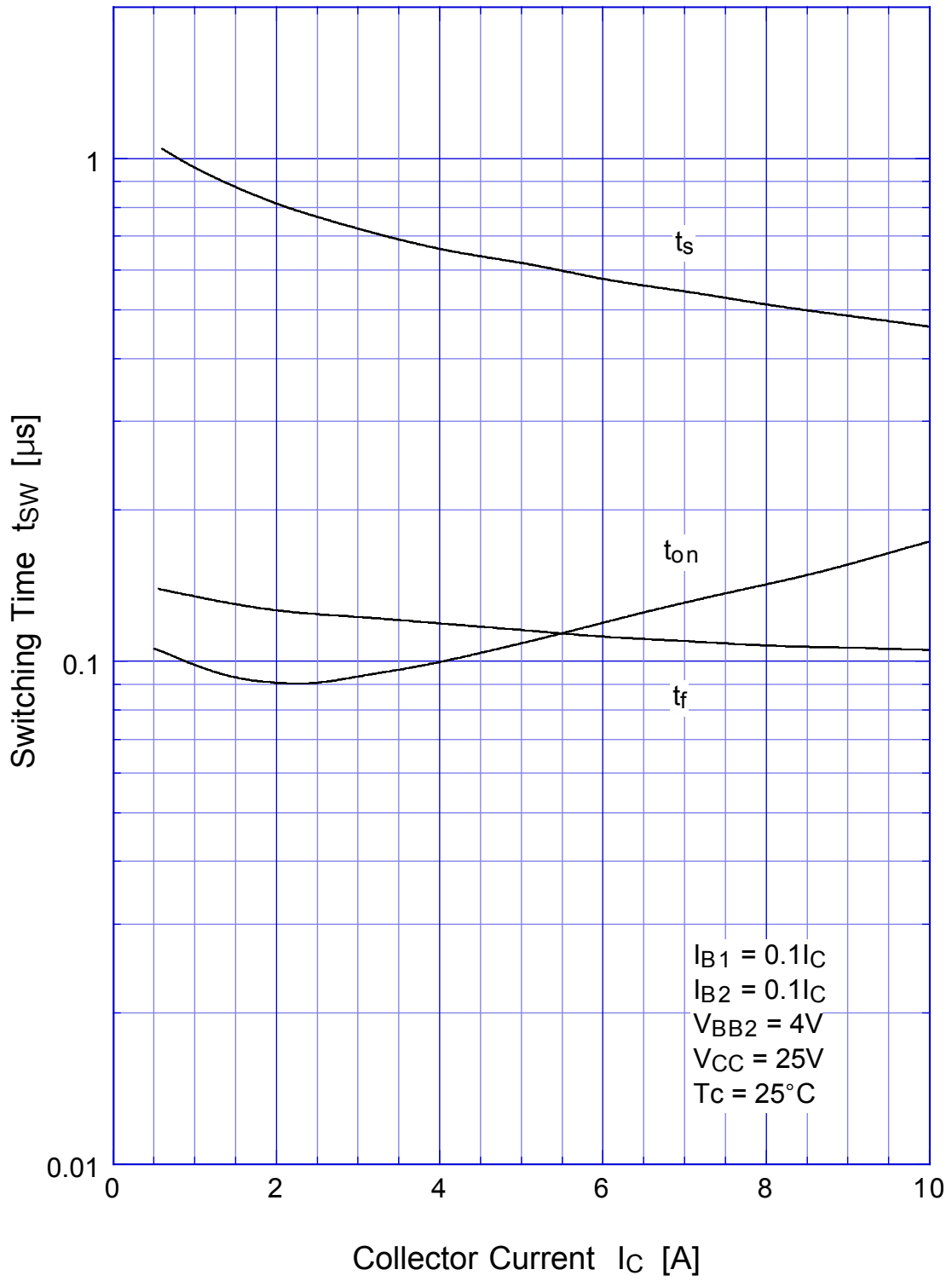


# 2SC4149 Saturation Voltage



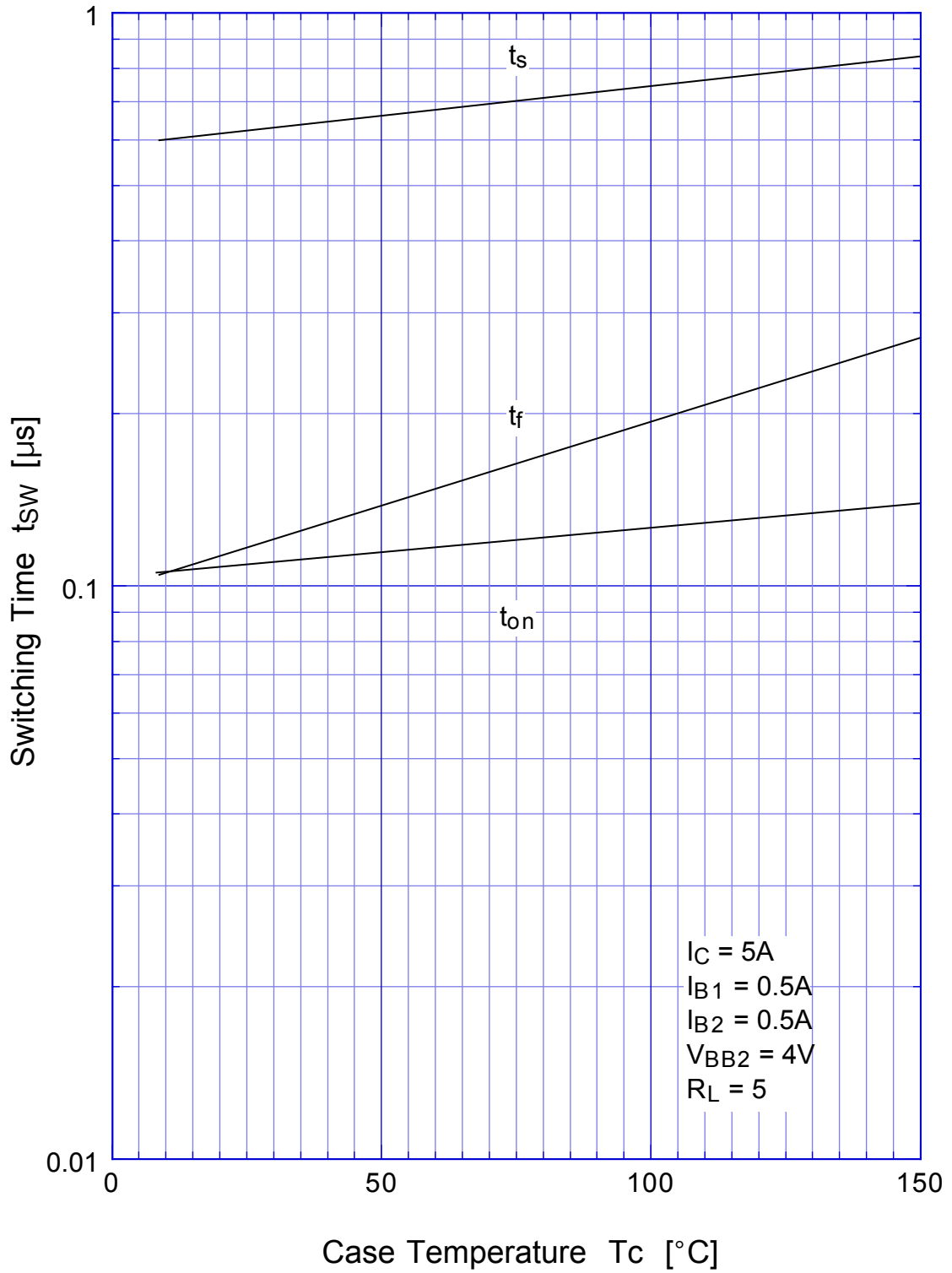
# 2SC4149

## Switching Time - $I_C$

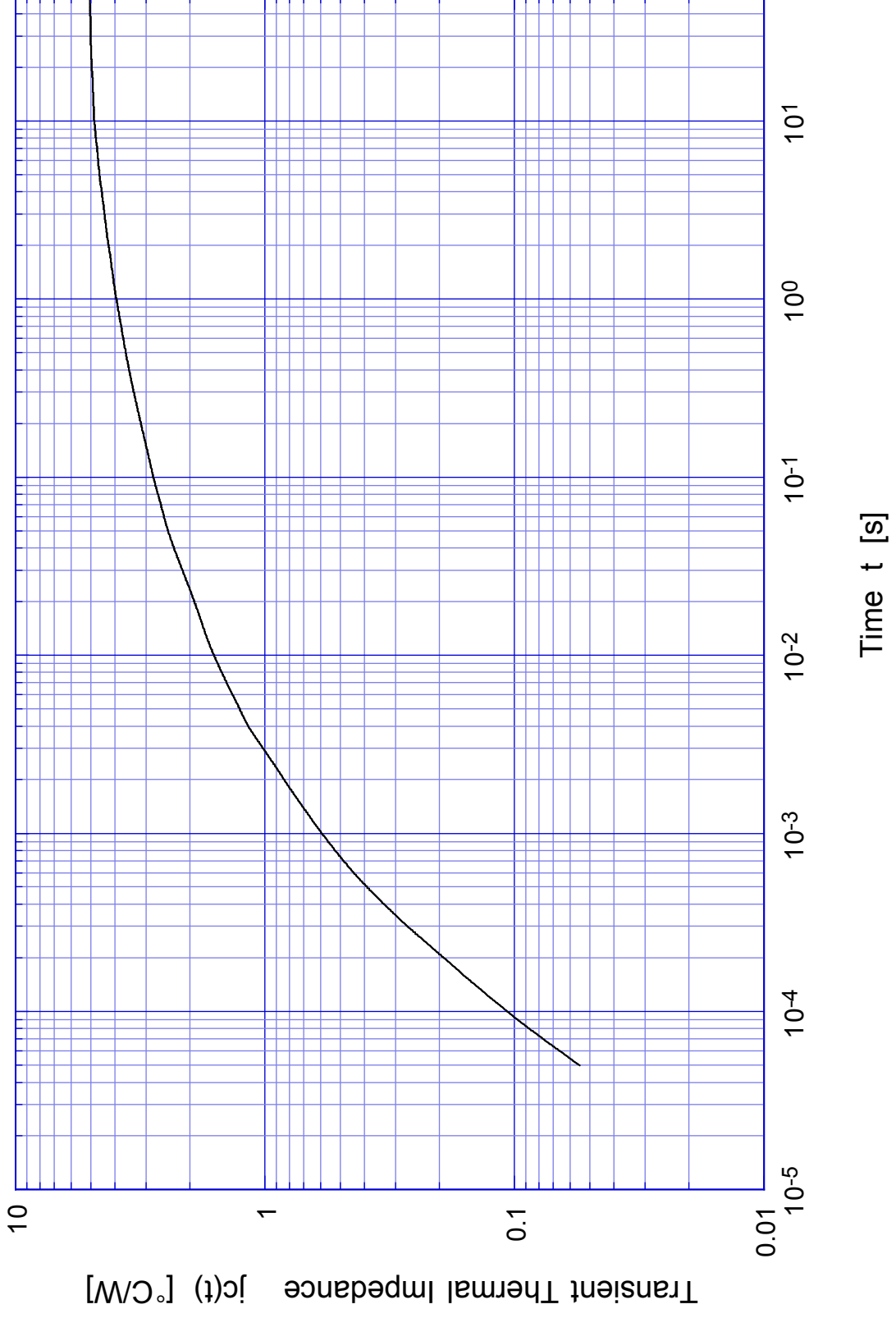


# 2SC4149

## Switching Time - Tc

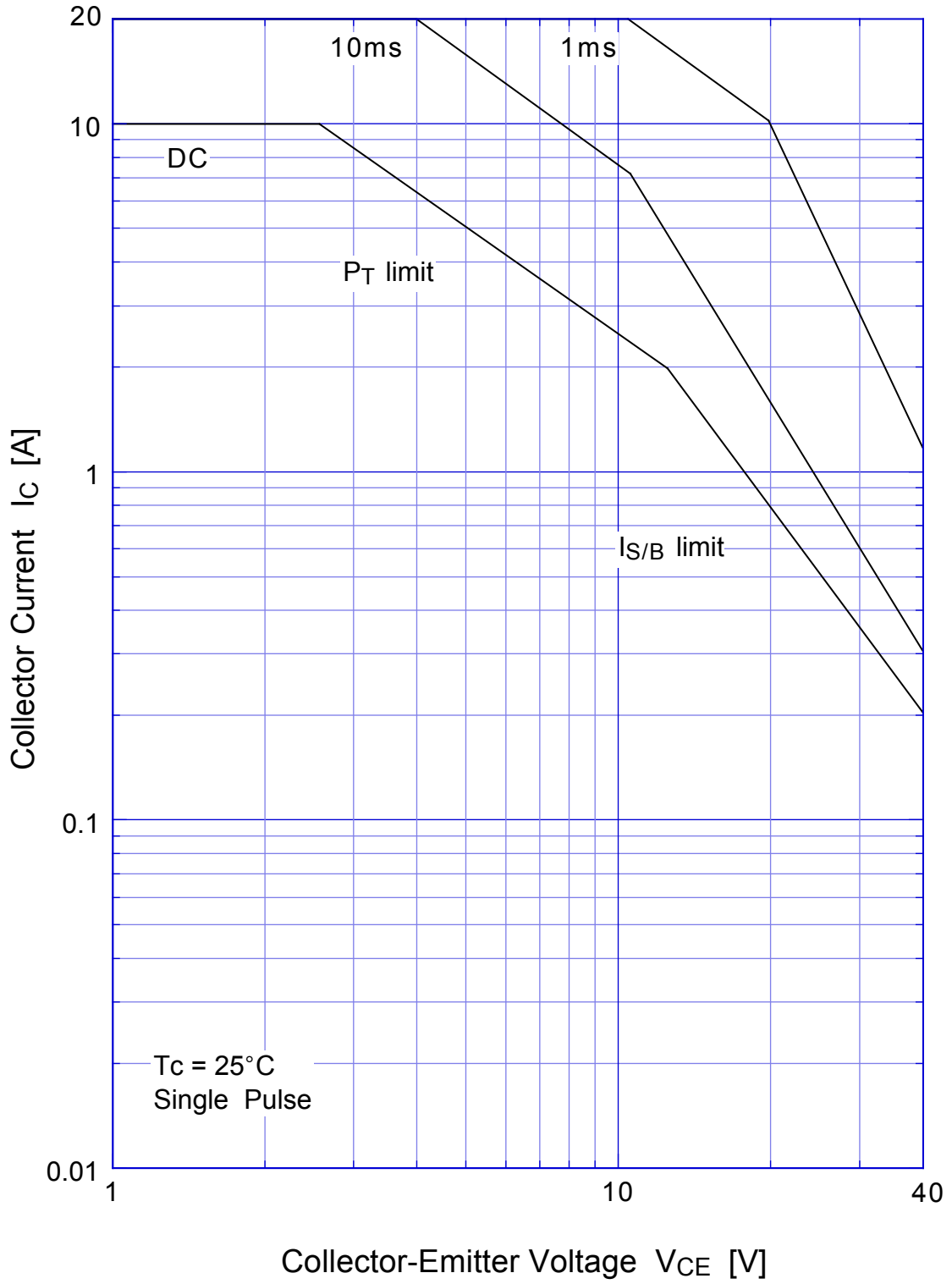


## 2SC4149 Transient Thermal Impedance



# 2SC4149

# Forward Bias SOA



## 2SC4149 Collector Current Derating

