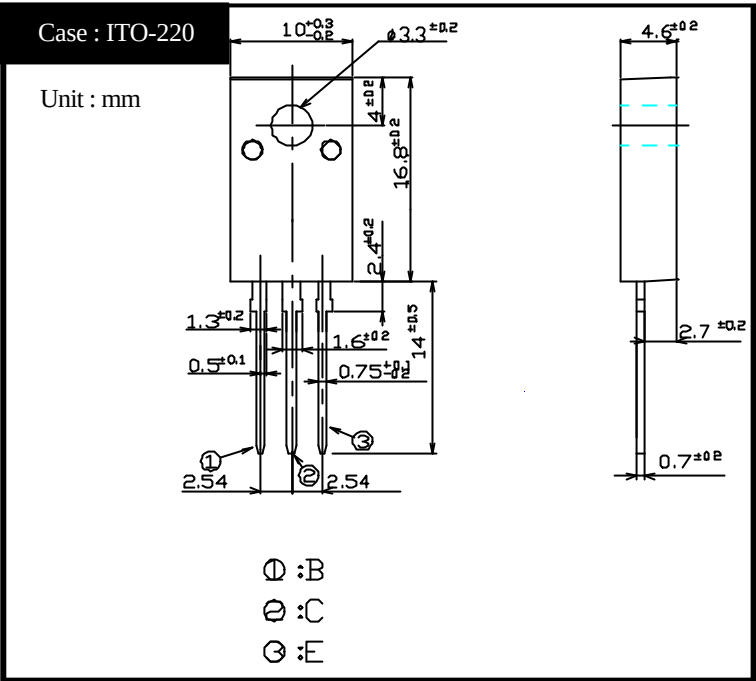


2SA1599

(TP10T4)

-10A PNP

OUTLINE DIMENSIONS



RATINGS

● Absolute Maximum Ratings

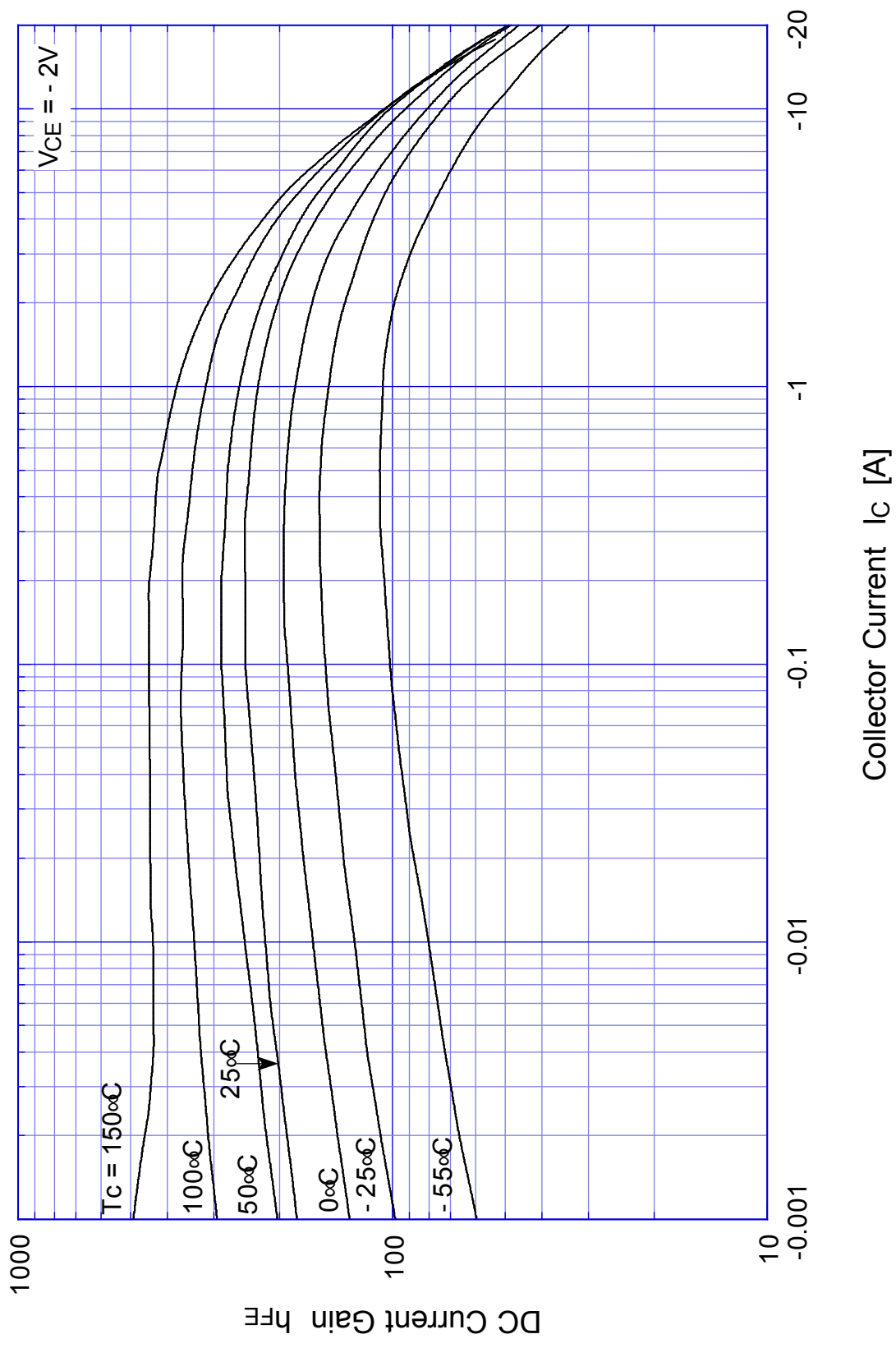
| Item                         | Symbol           | Conditions                    | Ratings | Unit |
|------------------------------|------------------|-------------------------------|---------|------|
| Storage Temperature          | Tstg             |                               | -55~150 | °C   |
| Junction Temperature         | Tj               |                               | 150     | °C   |
| Collector to Base Voltage    | V <sub>CBO</sub> |                               | -60     | V    |
| Collector to Emitter Voltage | V <sub>CEO</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>   | Tc = 25°C                     | 25      | W    |
| Dielectric Strength          | Vdis             | Terminal to case, AC 1 minute | 2       | kV   |
| Mounting Torque              | TOR              | (Recommended torque : 0.3N·m) | 0.5     | N·m  |

● Electrical Characteristics (Tc=25°C)

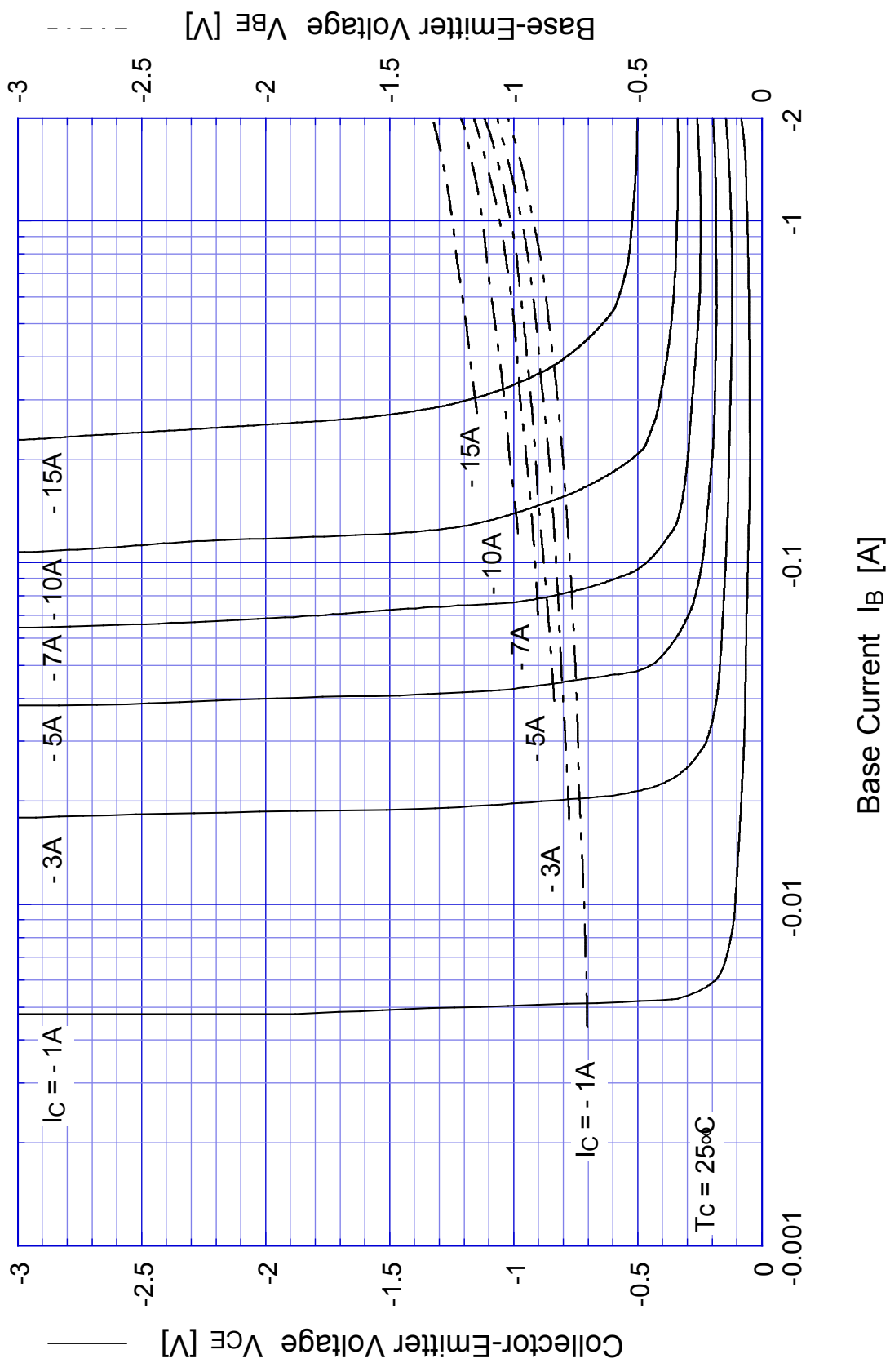
| Item                                    | Symbol                | Conditions                                                                                                              | Ratings  | Unit |
|-----------------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------|----------|------|
| Collector to Emitter Sustaining Voltage | V <sub>CEO(sus)</sub> | I <sub>C</sub> = -0.1A                                                                                                  | Min -40  | V    |
| Collector Cutoff Current                | I <sub>CBO</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    | °C/W |
| Transition Frequency                    | f <sub>T</sub>        | V <sub>CE</sub> = -10V, I <sub>C</sub> = -1A                                                                            | TYP 50   | MHz  |
| Turn on Time                            | ton                   | I <sub>C</sub> = -5A<br>I <sub>B1</sub> = -0.5A, I <sub>B2</sub> = -0.5A<br>R <sub>L</sub> = 5Ω, V <sub>BB2</sub> = -4V | Max 0.3  | μ s  |
| Storage Time                            | ts                    |                                                                                                                         | Max 1.5  |      |
| Fall Time                               | tf                    |                                                                                                                         | Max 0.5  |      |

2SA1599

$h_{FE} - I_C$

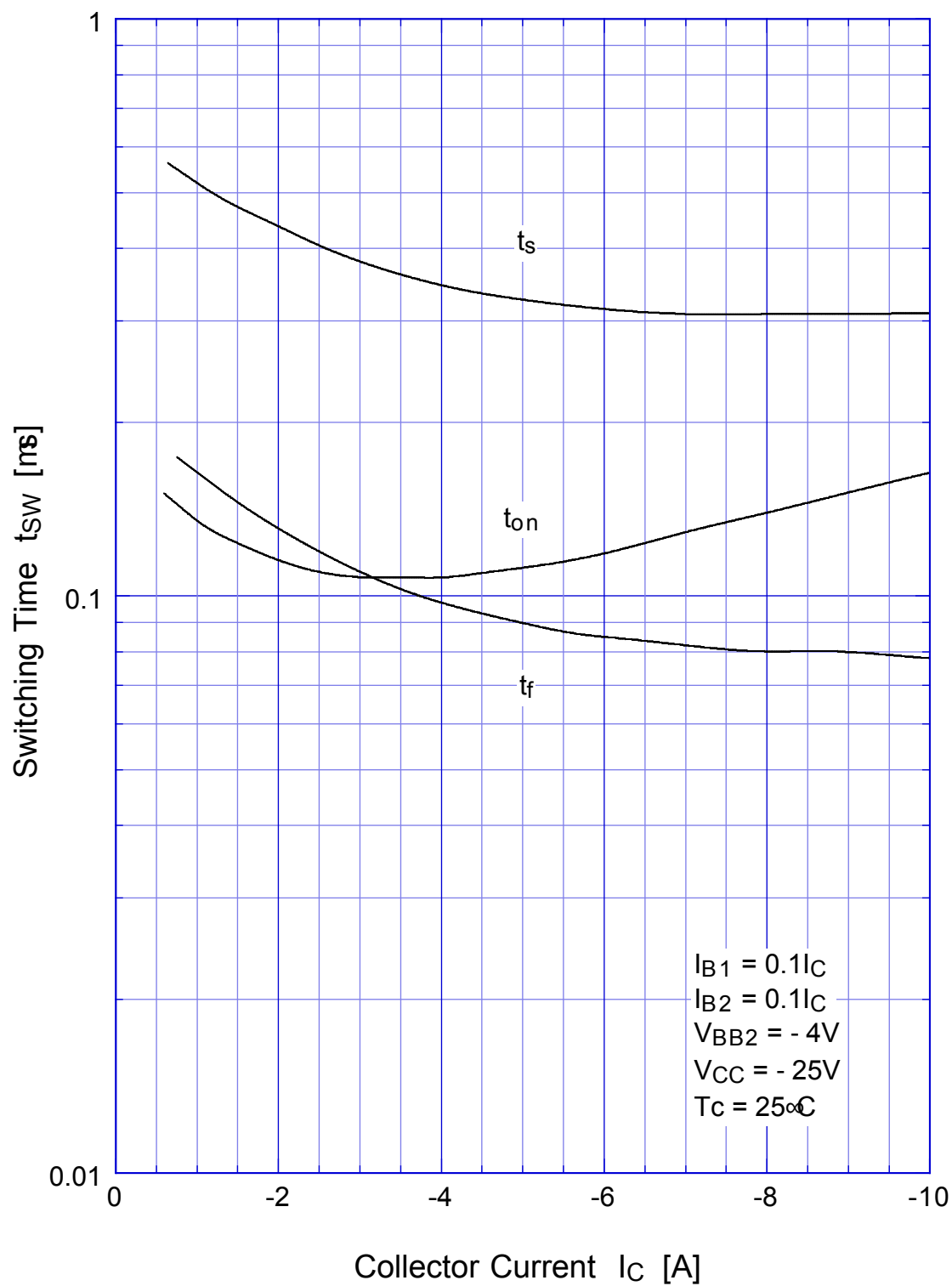


## 2SA1599 Saturation Voltage



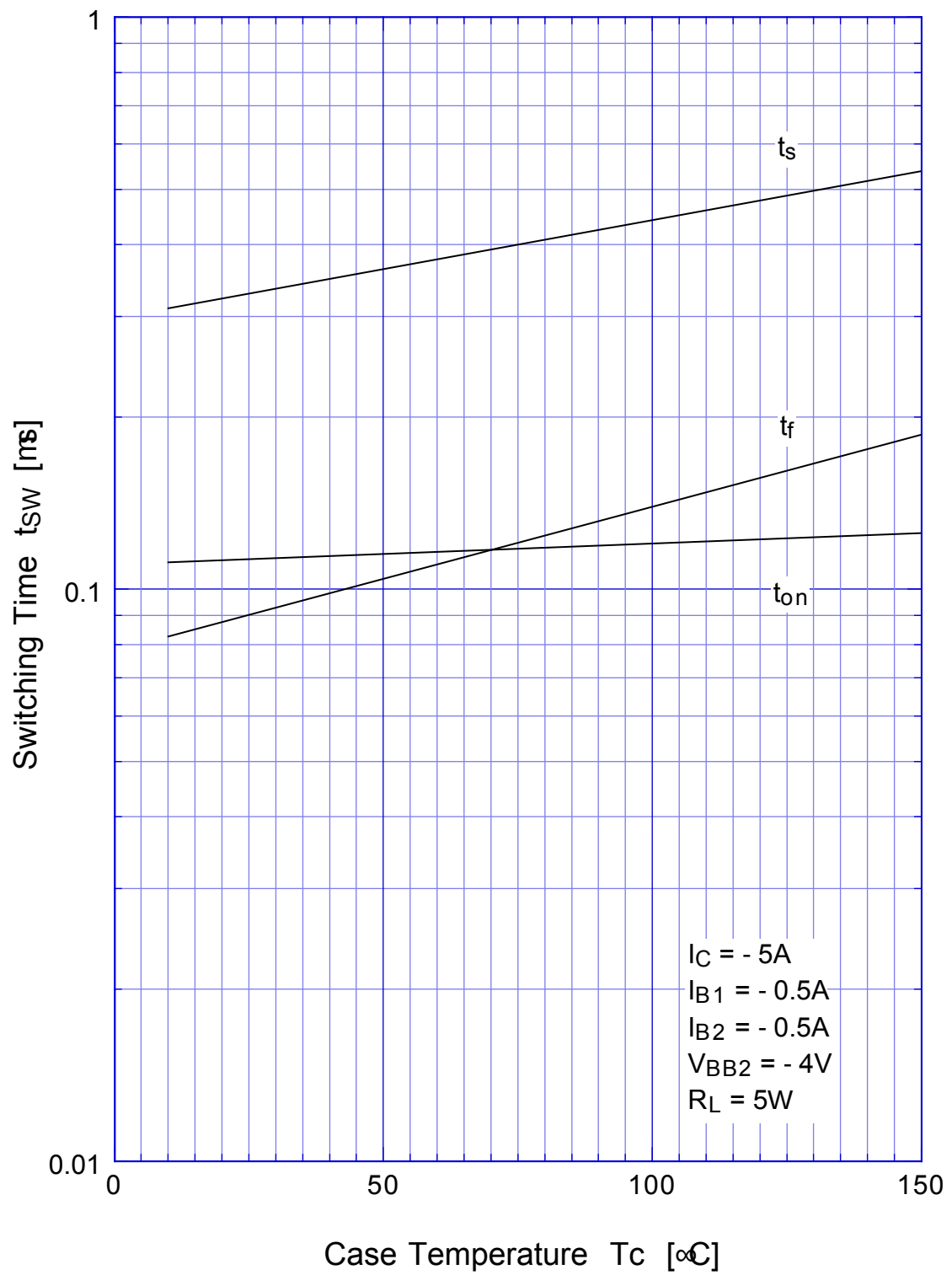
## 2SA1599

## Switching Time - $I_C$



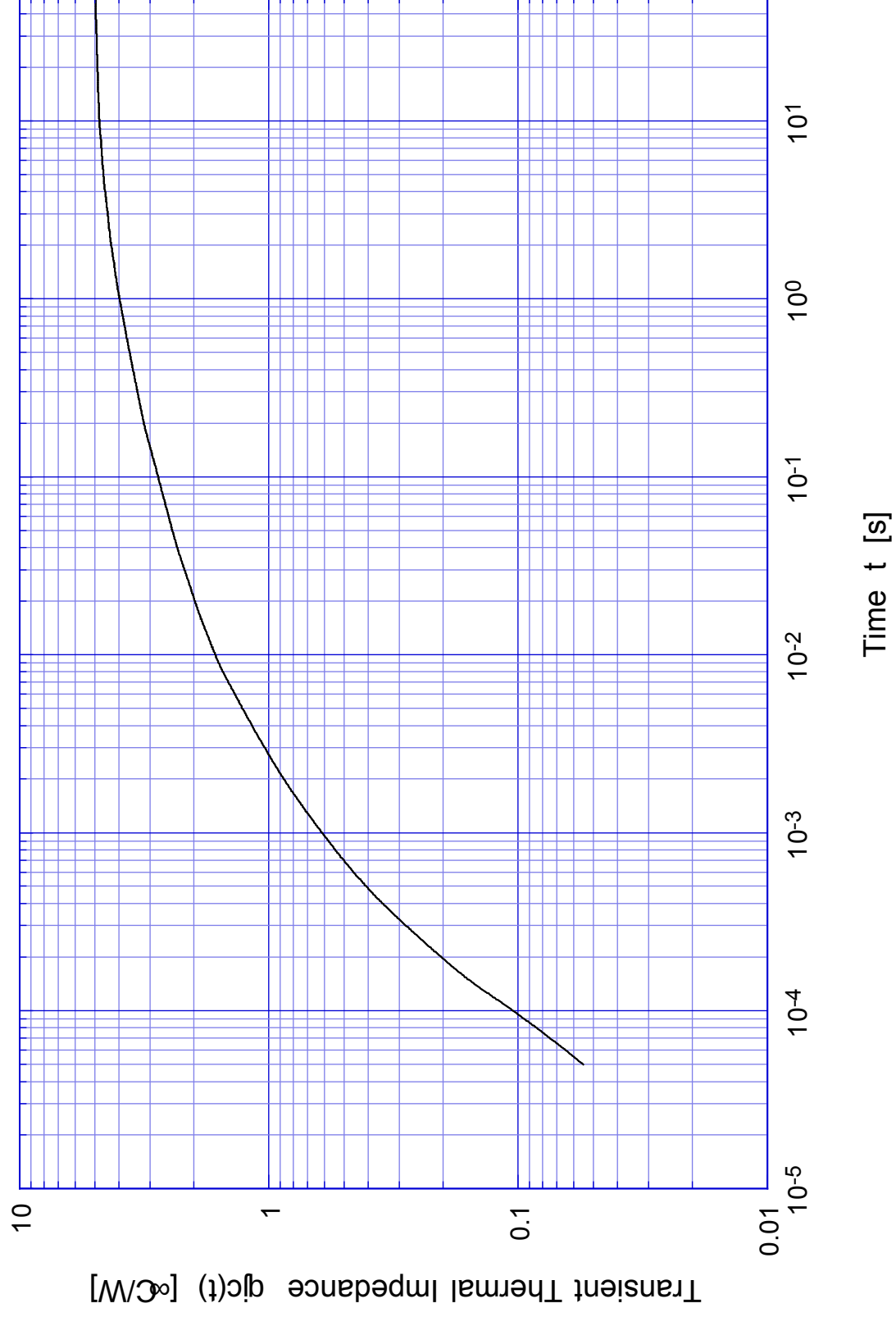
## 2SA1599

## Switching Time - $T_c$



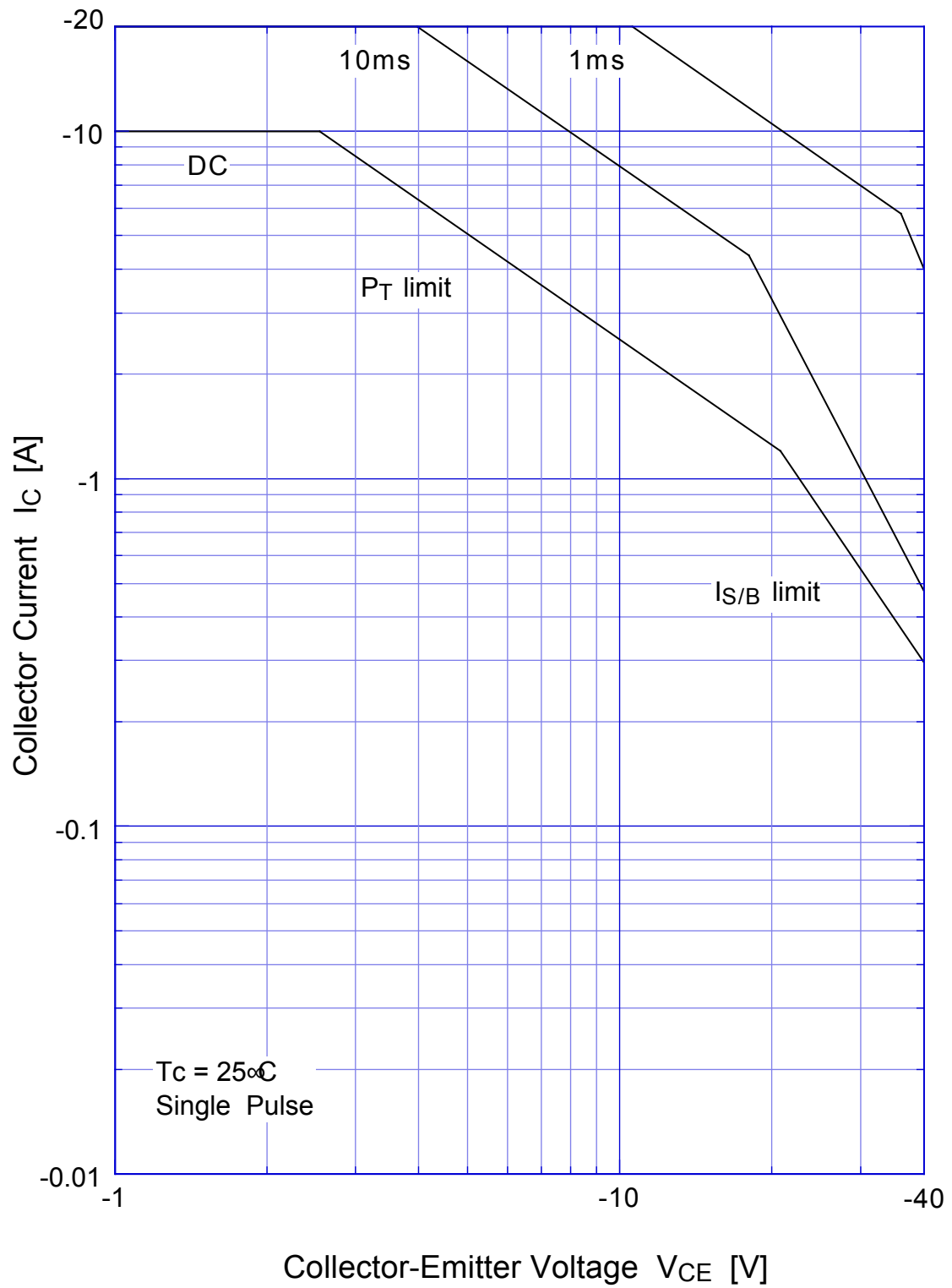
## 2SA1599      Transient Thermal Impedance

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# 2SA1599

## Forward Bias SOA



## 2SA1599

## Collector Current Derating

