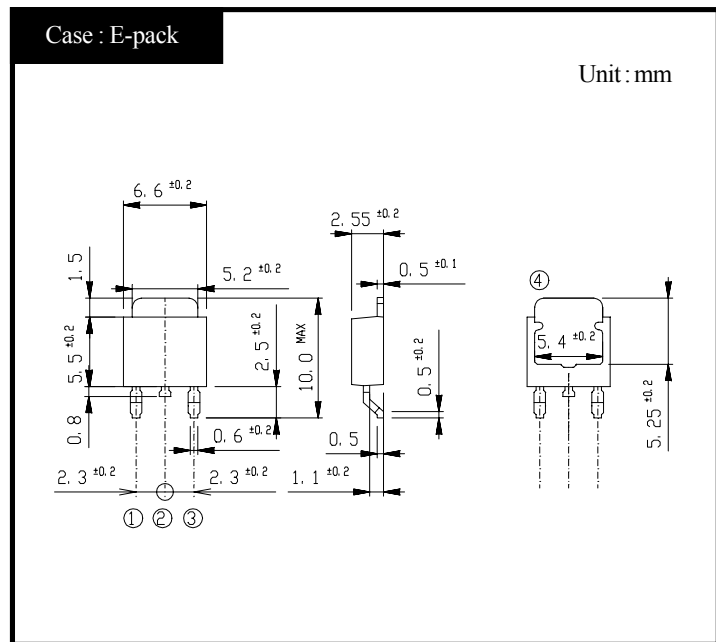


# 2SC4978 (TE3S8)

## 3A NPN

### OUTLINE DIMENSIONS



### RATINGS

#### ● Absolute Maximum Ratings

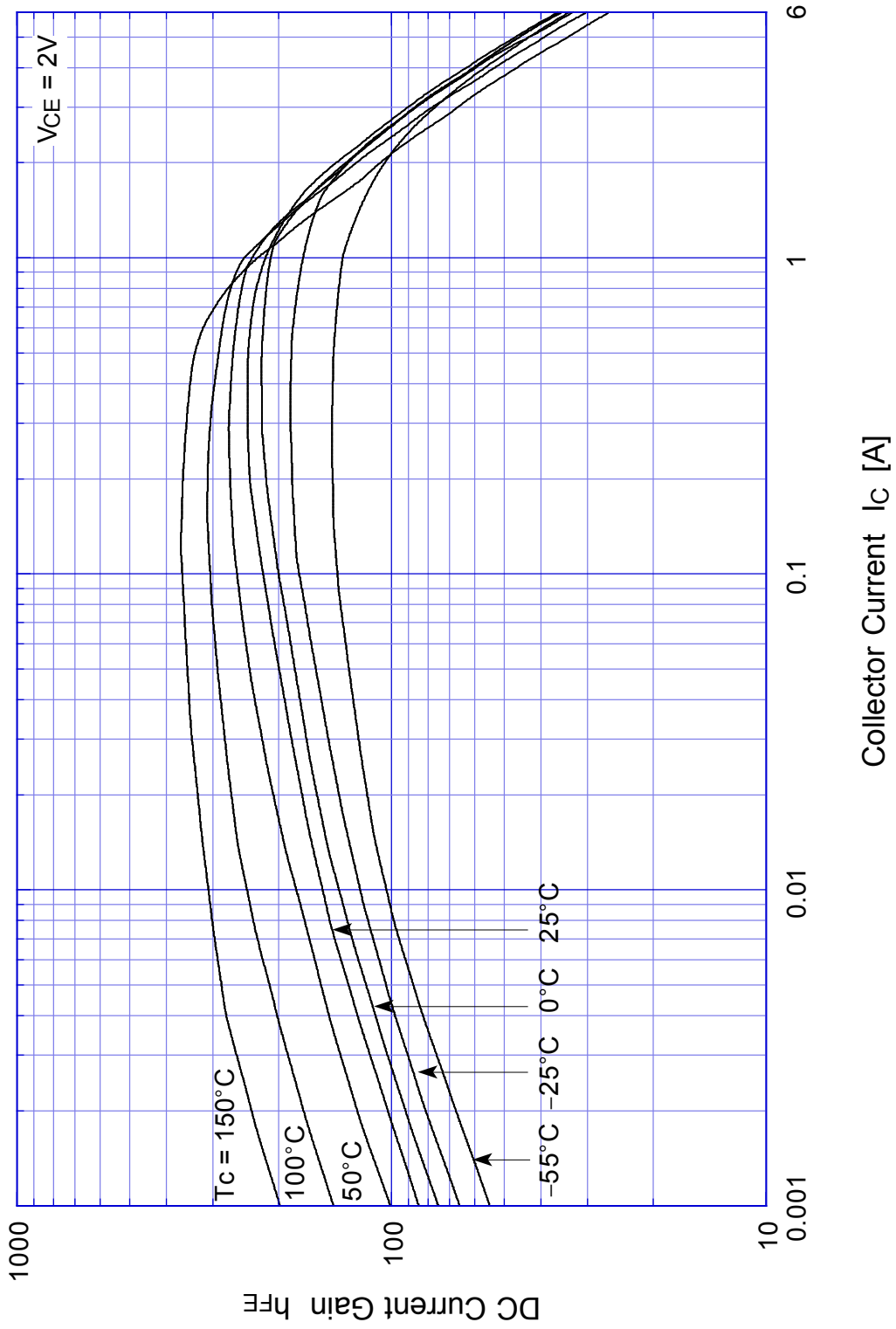
Item	Symbol	Conditions	Ratings	Unit
Storage Temperature	T <sub>stg</sub>		-55~150	°C
Junction Temperature	T <sub>j</sub>		150	°C
Collector to Base Voltage	V <sub>CB0</sub>		100	V
Collector to Emitter Voltage	V <sub>CEO</sub>		80	V
Emitter to Base Voltage	V <sub>EBO</sub>		7	V
Collector Current DC	I <sub>C</sub>		3	A
Collector Current Peak	I <sub>CP</sub>		6	A
Base Current DC	I <sub>B</sub>		1	A
Base Current Peak	I <sub>BP</sub>		1.5	A
Total Transistor Dissipation	P <sub>T</sub>	T <sub>c</sub> = 25°C	10	W

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

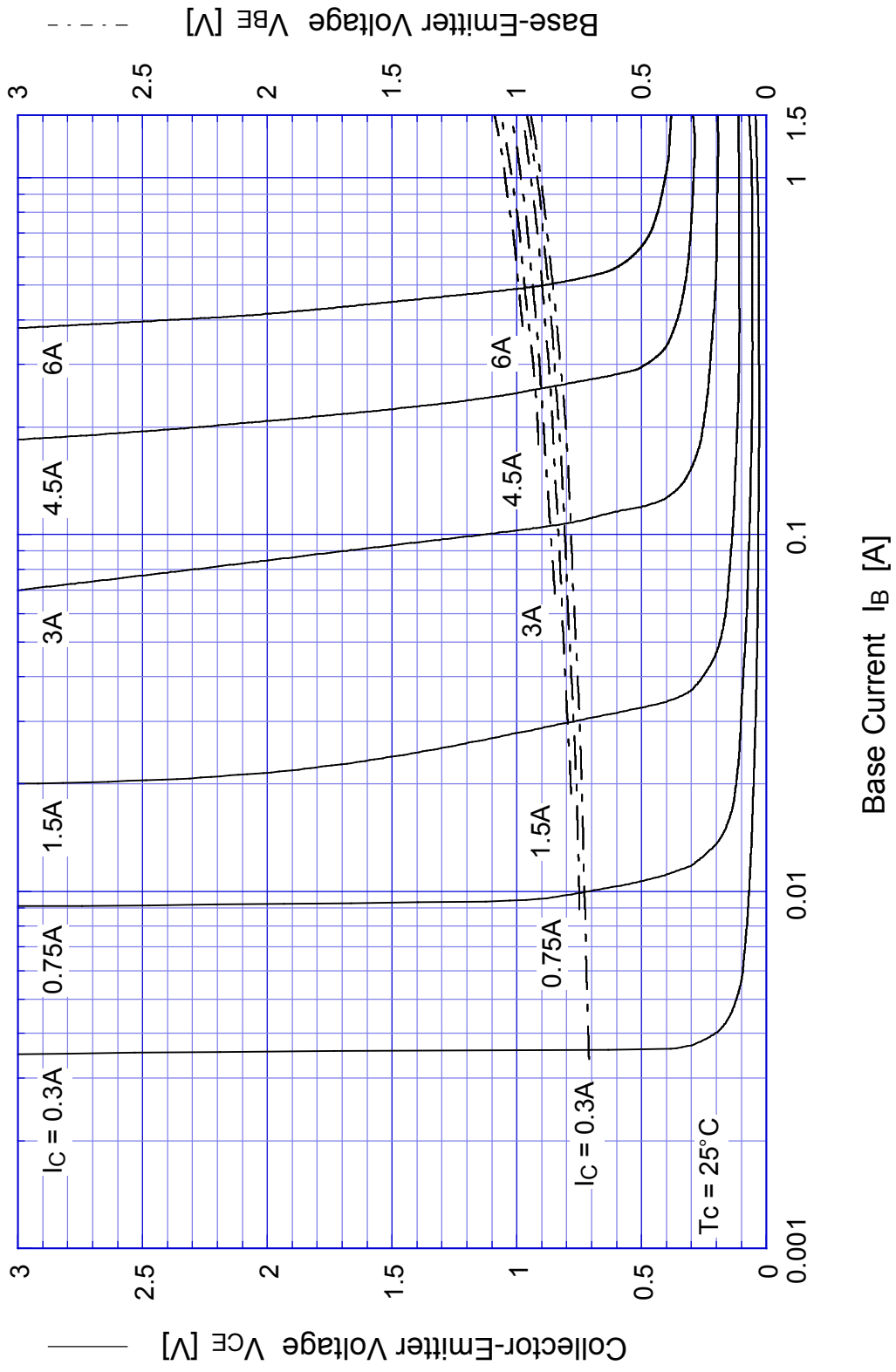
Item	Symbol	Conditions	Ratings	Unit
Collector to Emitter Sustaining Voltage	V <sub>CEO(sus)</sub>	I <sub>C</sub> = 0.05A	Min 80	V
Collector Cutoff Current	I <sub>CBO</sub>	At rated Voltage	Max 0.1	mA
	I <sub>CEO</sub>		Max 0.1	
Emitter Cutoff Current	I <sub>EBO</sub>	At rated Voltage	Max 0.1	mA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> = 2V, I <sub>C</sub> = 1.5A	Min 70	
Collector to Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = 1.5A	Max 0.3	V
Base to Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>B</sub> = 0.08A	Max 1.2	V
Thermal Resistance	θ <sub>jc</sub>	Junction to case	Max 12.5	°C/W
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> = 10V, I <sub>C</sub> = 0.3A	TYP 50	MHz
Turn on Time	ton	I <sub>C</sub> = 1.5A I <sub>B1</sub> = 0.15A, I <sub>B2</sub> = 0.15A R <sub>L</sub> = 20 Ω, V <sub>BB2</sub> = 4V	Max 0.3	μs
Storage Time	ts		Max 1.5	
Fall Time	tf		Max 0.2	

# 2SC4978

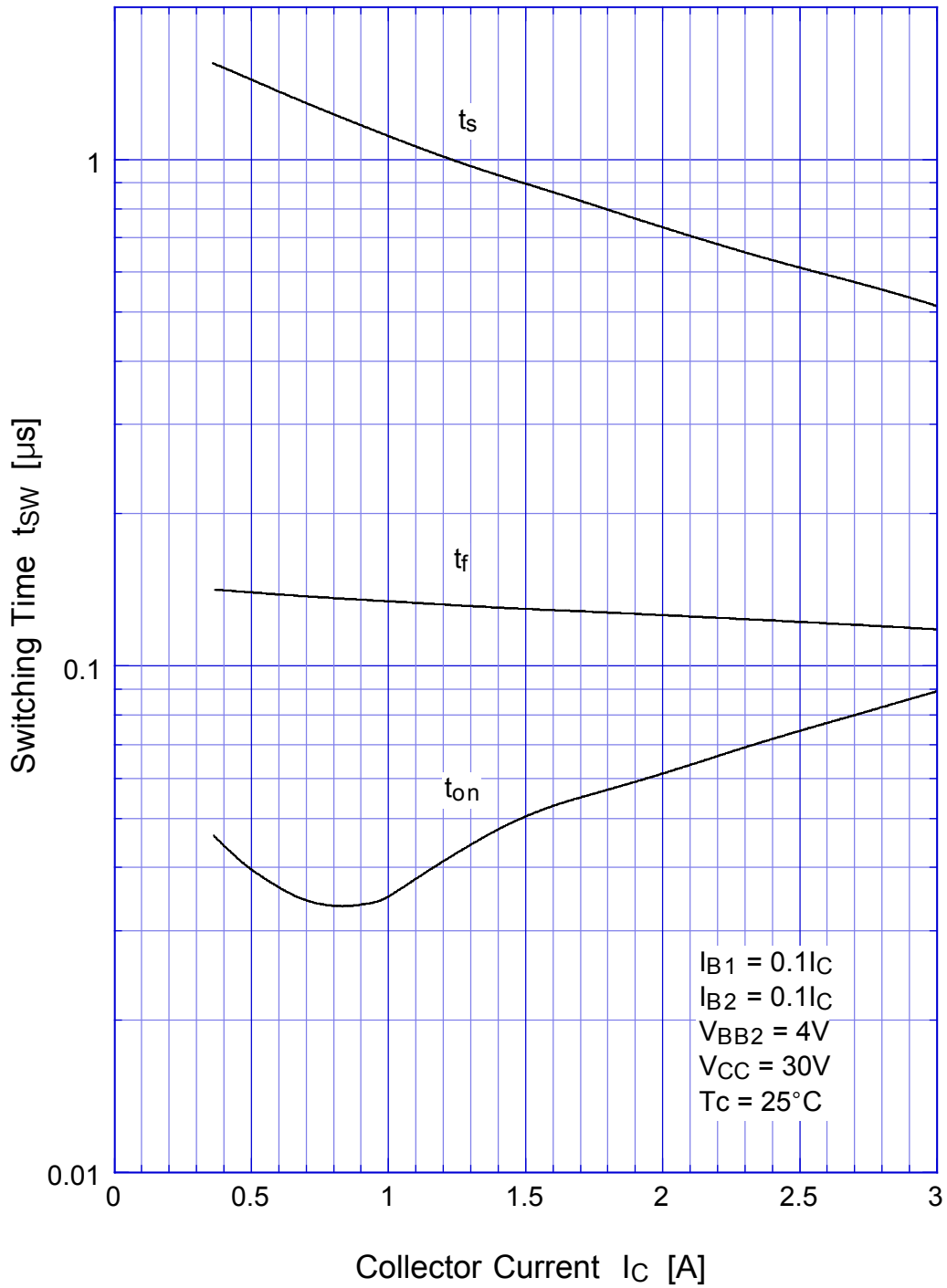
$h_{FE} - I_C$



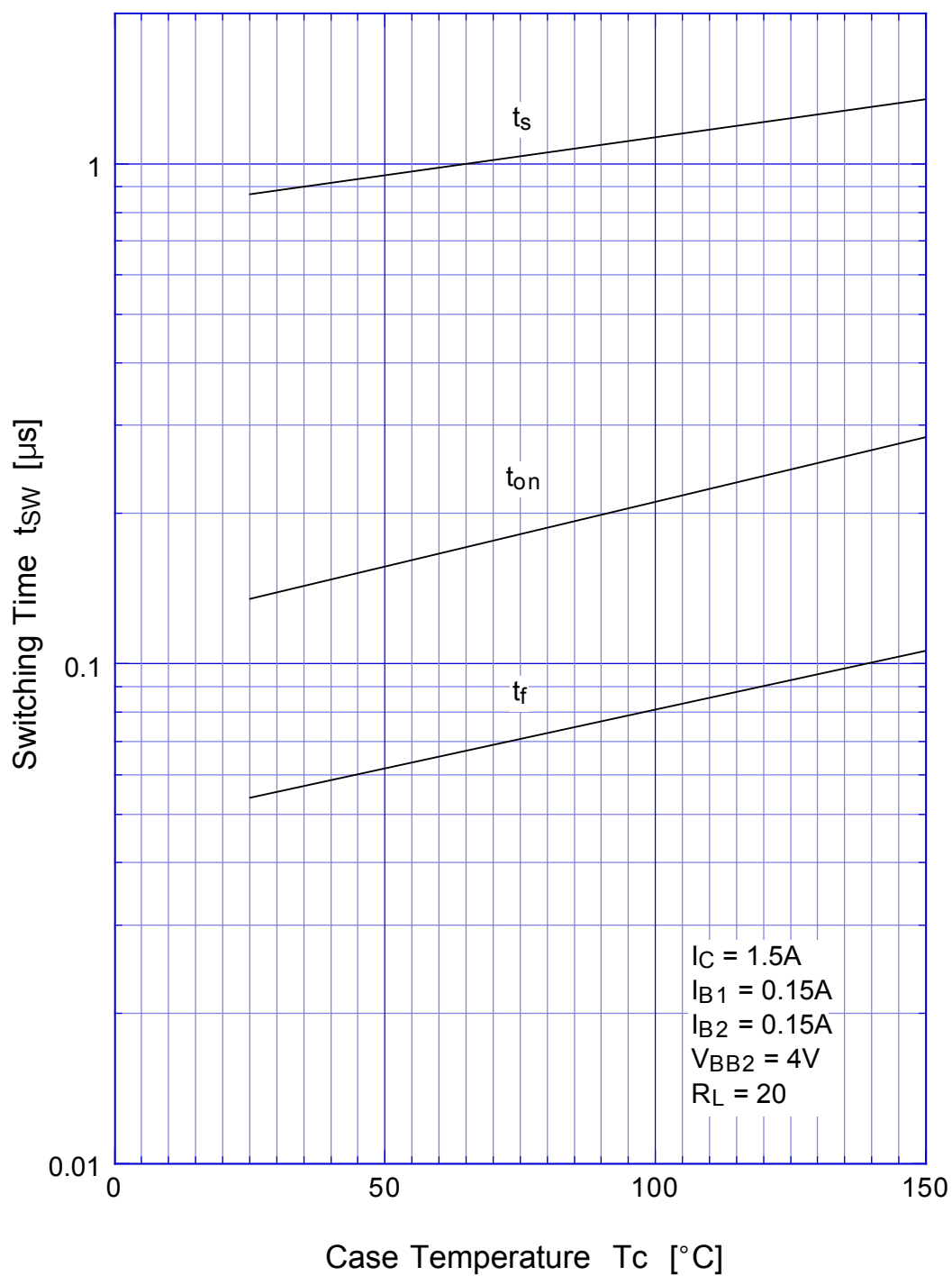
## 2SC4978 Saturation Voltage



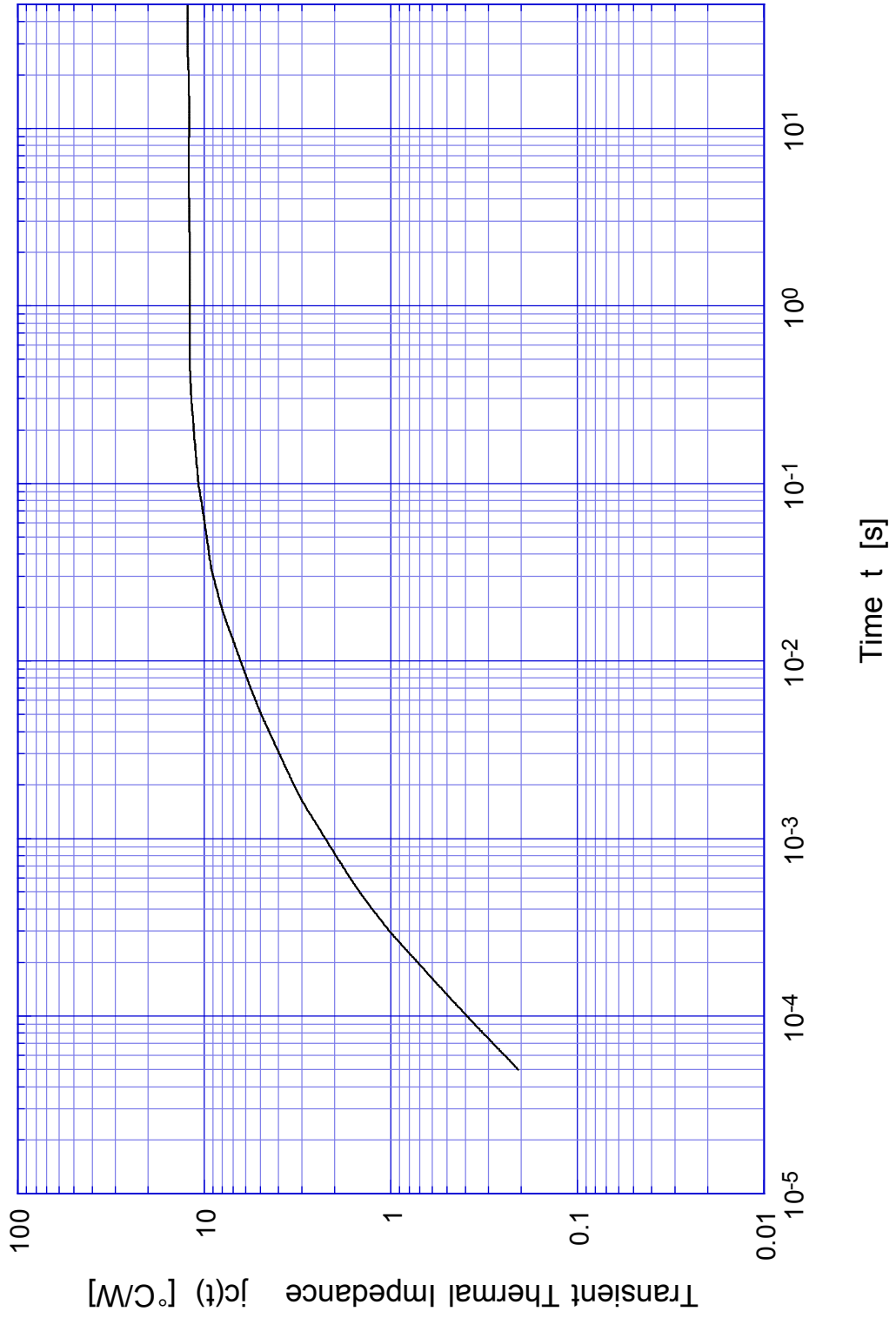
# 2SC4978 Switching Time - $I_C$



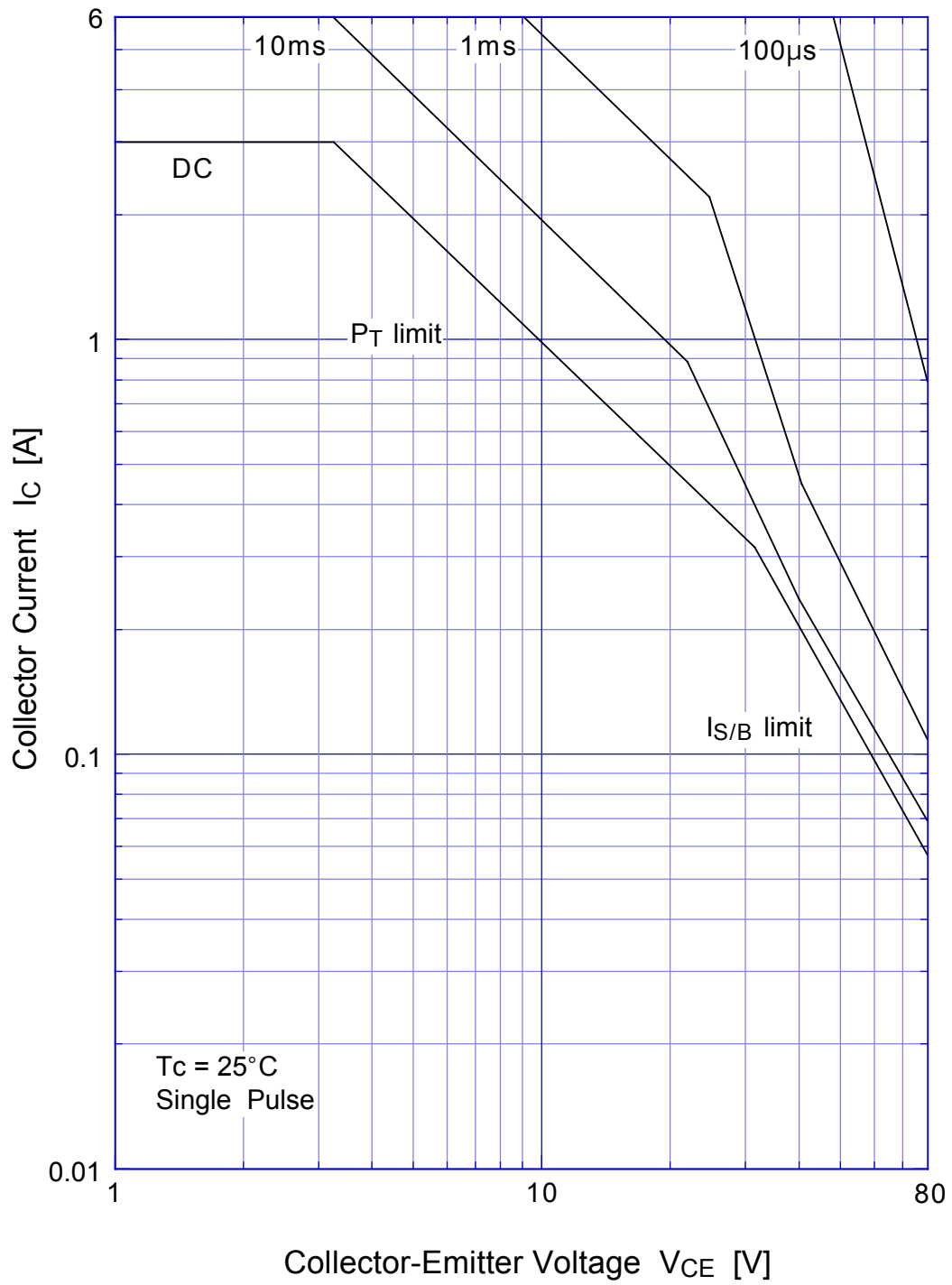
## 2SC4978 Switching Time - Tc



2SC4978 Transient Thermal Impedance



# 2SC4978 Forward Bias SOA



## 2SC4978 Collector Current Derating

