

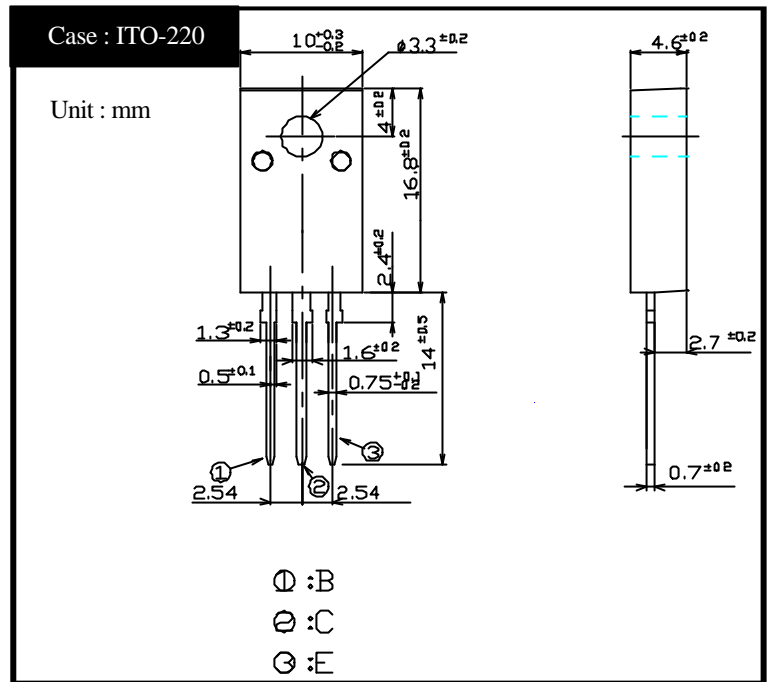
# SHINDENGEN

## Switching Power Transistor

# 2SC4940

## 4A NPN

### OUTLINE DIMENSIONS



### RATINGS

#### Absolute Maximum Ratings

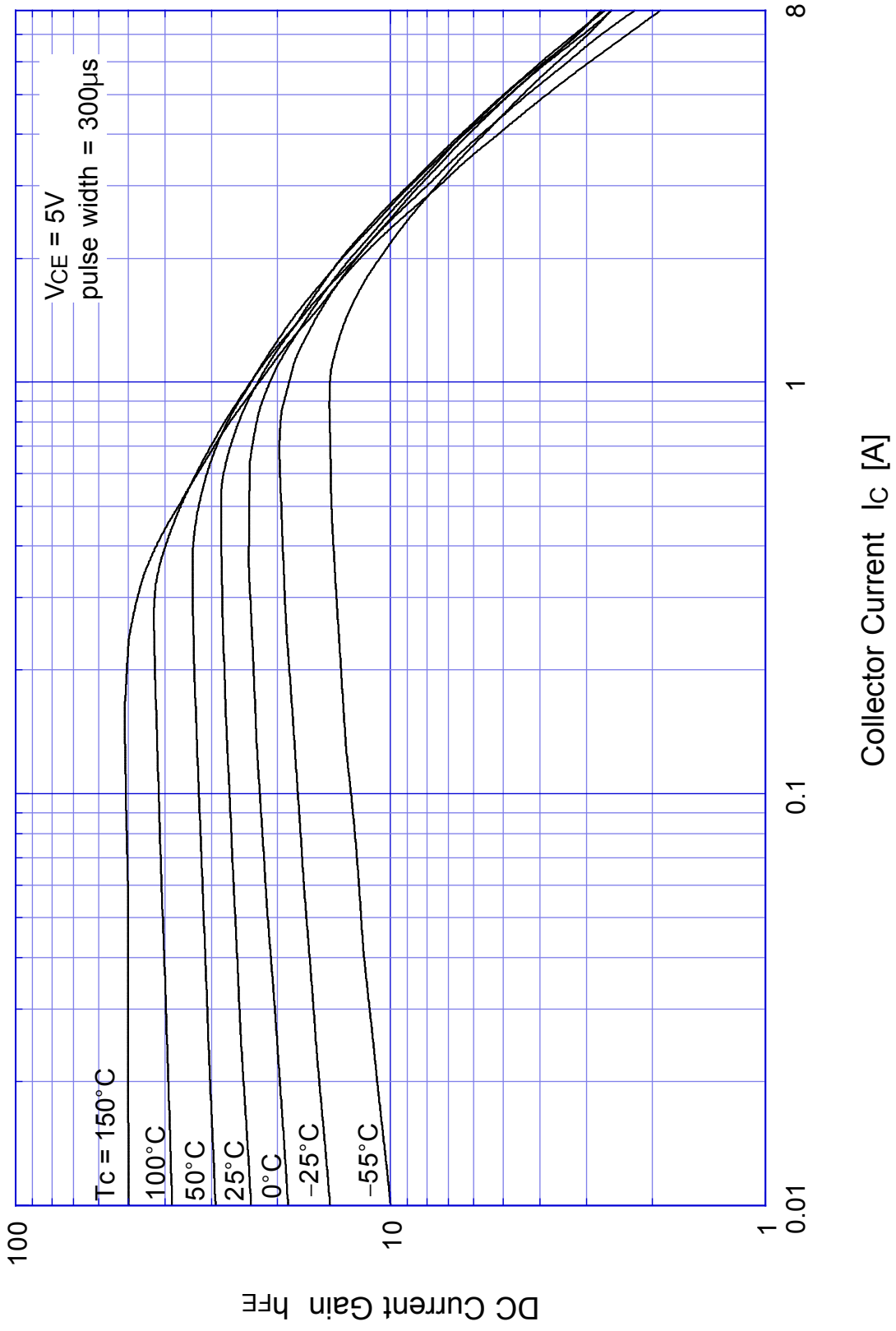
Item	Symbol	Conditions	Ratings	Unit
Storage Temperature	T <sub>stg</sub>		-55 ~ 150	
Junction Temperature	T <sub>j</sub>		150	
Collector to Base Voltage	V <sub>CB0</sub>		1200	V
Collector to Emitter Voltage	V <sub>CE0</sub>		550	V
Emitter to Base Voltage	V <sub>EBO</sub>		7	V
Collector Current DC	I <sub>C</sub>		4	A
Collector Current Peak	I <sub>CP</sub>		8	
Base Current DC	I <sub>B</sub>		2	A
Base Current Peak	I <sub>BP</sub>		4	
Total Transistor Dissipation	P <sub>T</sub>		30	W
Dielectric Strength	V <sub>dis</sub>	Terminals to casd, AC 1 minute	2	kV
Mounting Torque	TOR	(Recommended torque)	0.5(0.3)	N·m

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

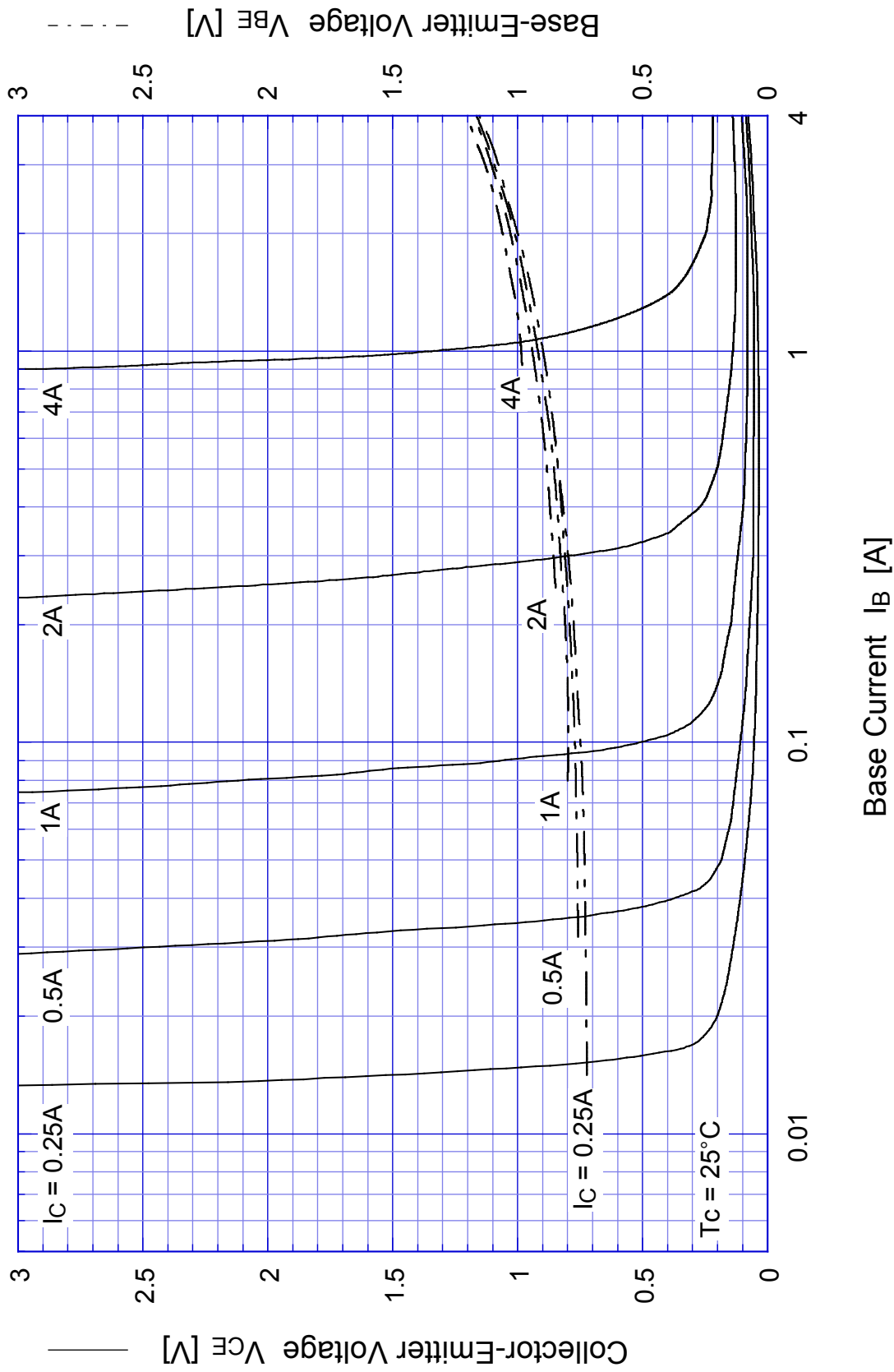
Item	Symbol	Conditions	Ratings	Unit
Collector to Emitter Sustaining Voltage	V <sub>CE0(sus)</sub>	I <sub>C</sub> = 0.1A	Min 550	V
Collector Cutoff Current	I <sub>CB0</sub>	rated V <sub>CB0</sub>	Max 0.1	mA
		rated V <sub>CE0</sub>	Max 0.1	
Emitter Cutoff Current	I <sub>EBO</sub>	rated V <sub>EBO</sub>	Max 0.1	mA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> = 5V, I <sub>C</sub> = 2A	Min 10	
		V <sub>CE</sub> = 5V, I <sub>C</sub> = 1mA	Min 10	
Collector to Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = 2A	Max 1.0	V
Base to Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>B</sub> = 0.4A	Max 1.5	V
Thermal Resistance	θ <sub>JC</sub>	Junction to case	Max 4.16	/W
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> = 10V, I <sub>C</sub> = 0.4A	TYP 10	MHz
Turn on Time	t <sub>on</sub>	I <sub>C</sub> = 2A	Max 0.8	μs
Storage Time	t <sub>s</sub>	I <sub>B1</sub> = 0.4A, I <sub>B2</sub> = 0.8A	Max 3.0	
Fall Time	t <sub>f</sub>	R <sub>L</sub> = 75 Ω, V <sub>BB2</sub> = 4V	Max 0.3	

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$h_{FE} - I_C$

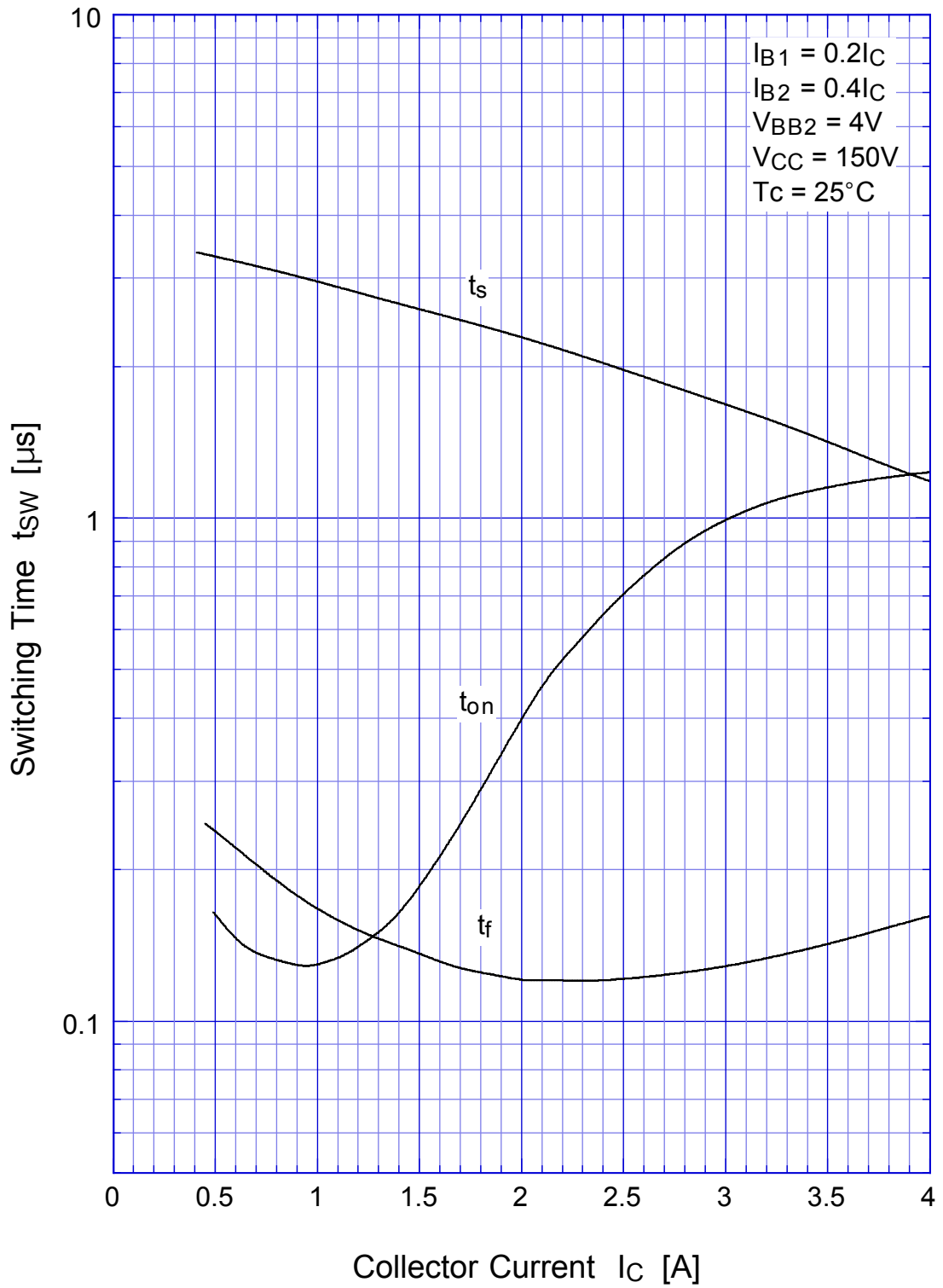


# 2SC4940 Saturation Voltage



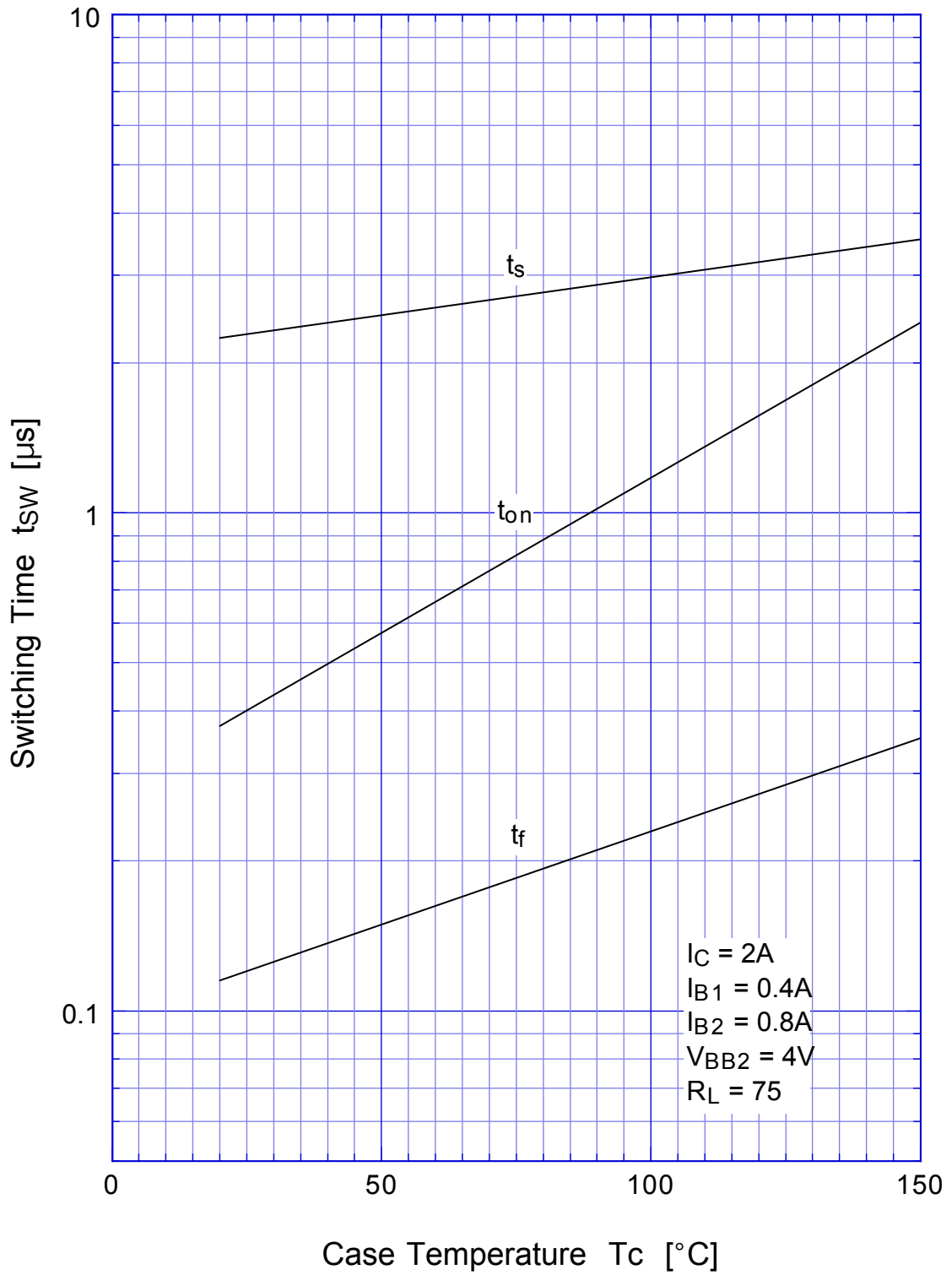
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## Switching Time - $I_C$



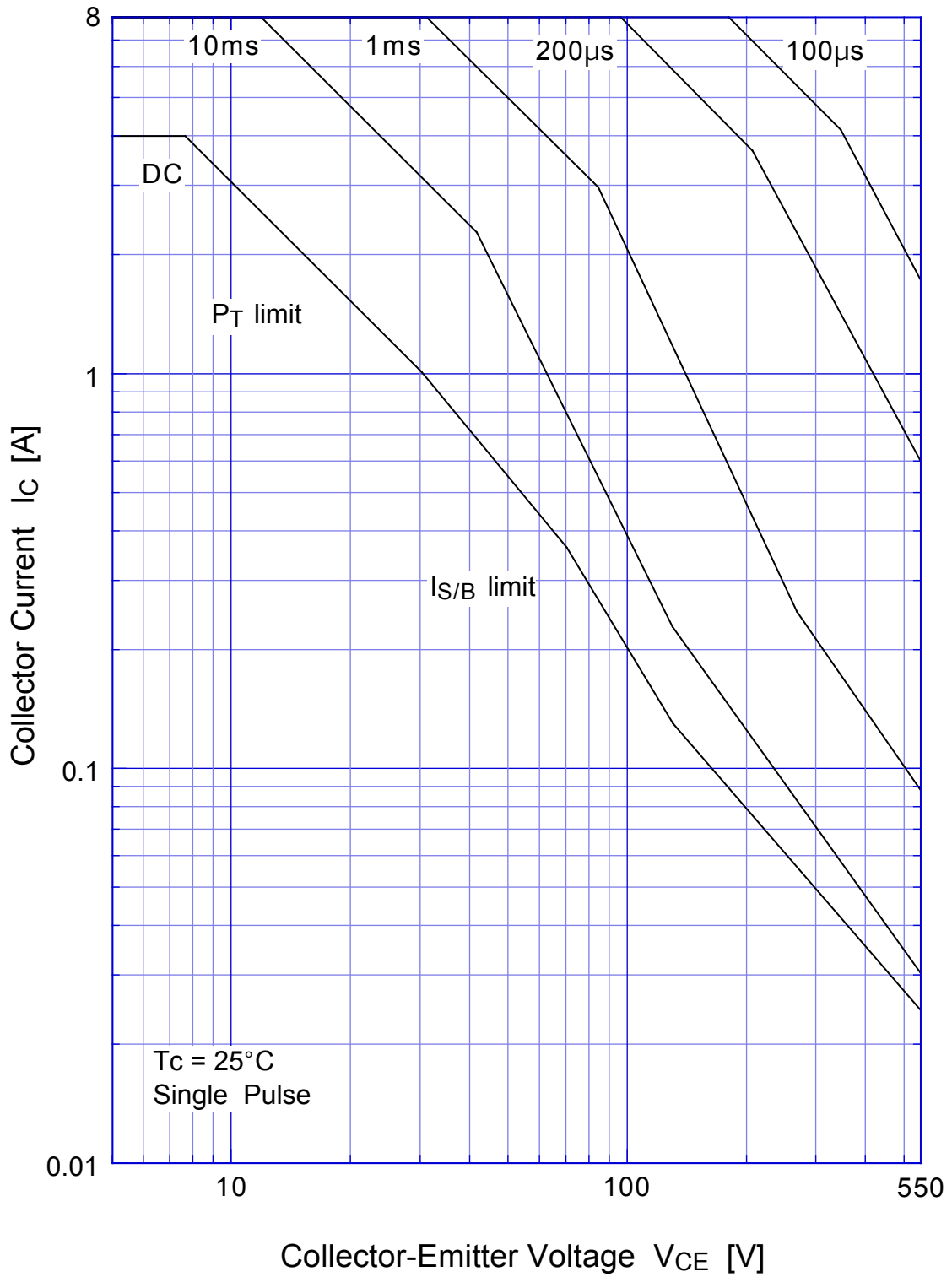
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## Switching Time - Tc

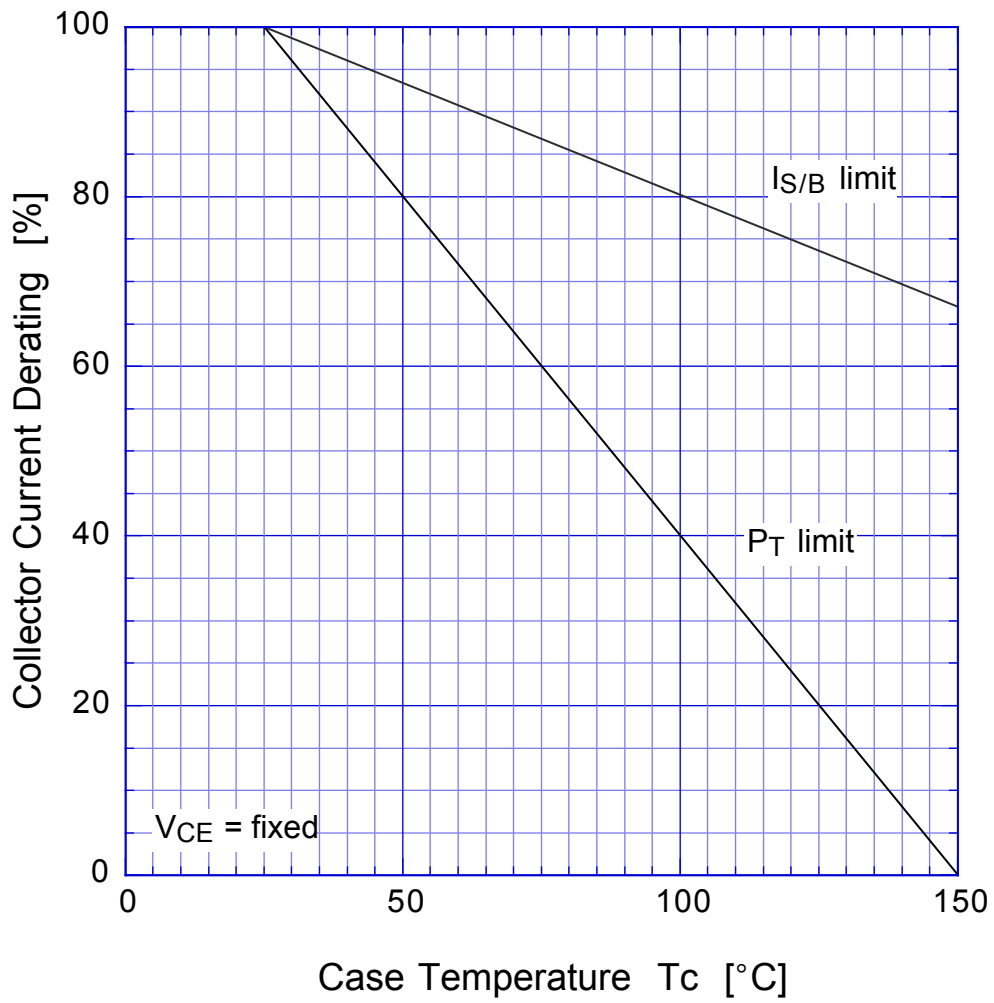


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# Forward Bias SOA

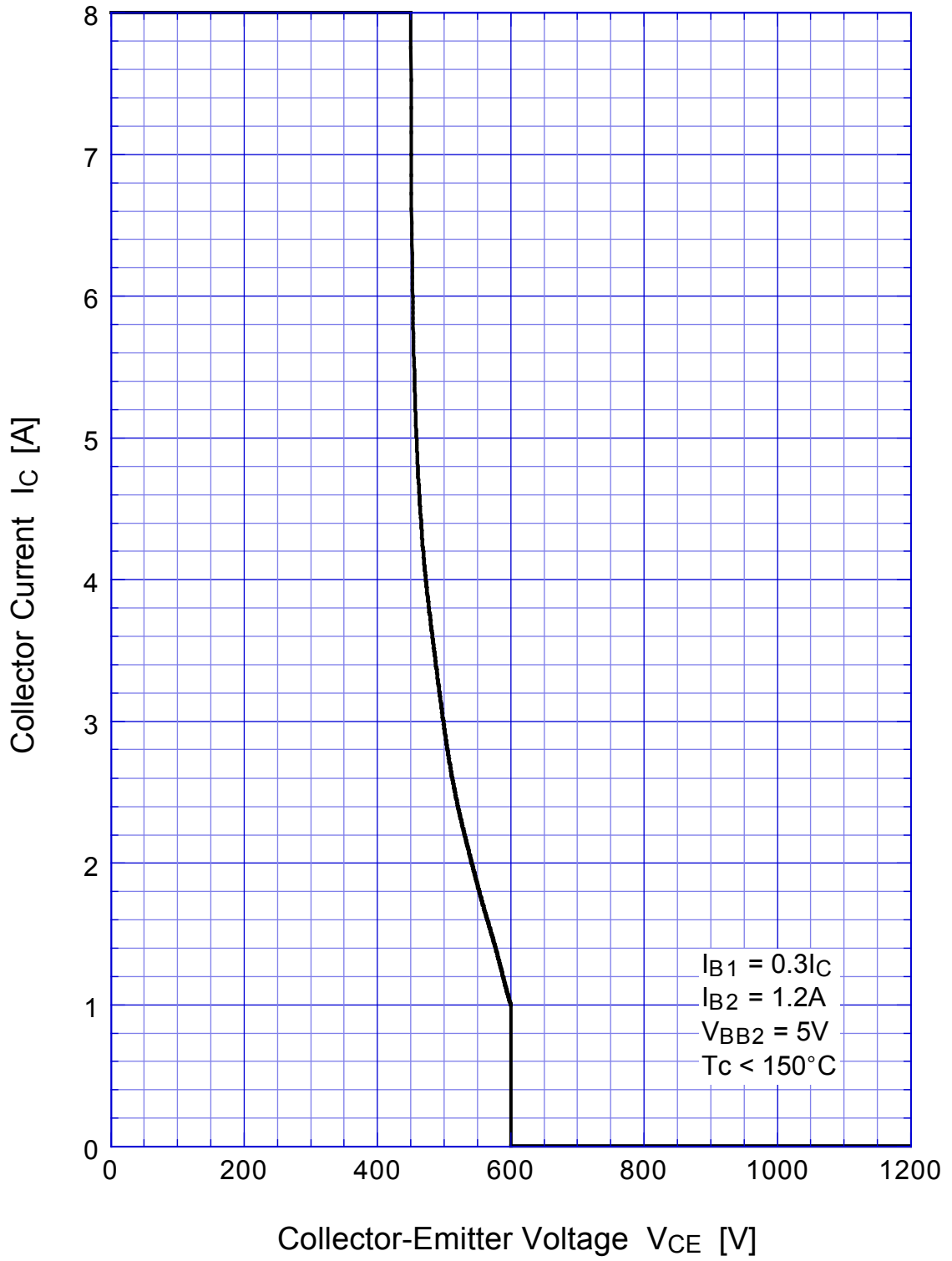


## 2SC4940 Collector Current Derating



2SC4940

Reverse Bias SOA





## 2SC4940 Transient Thermal Impedance

