

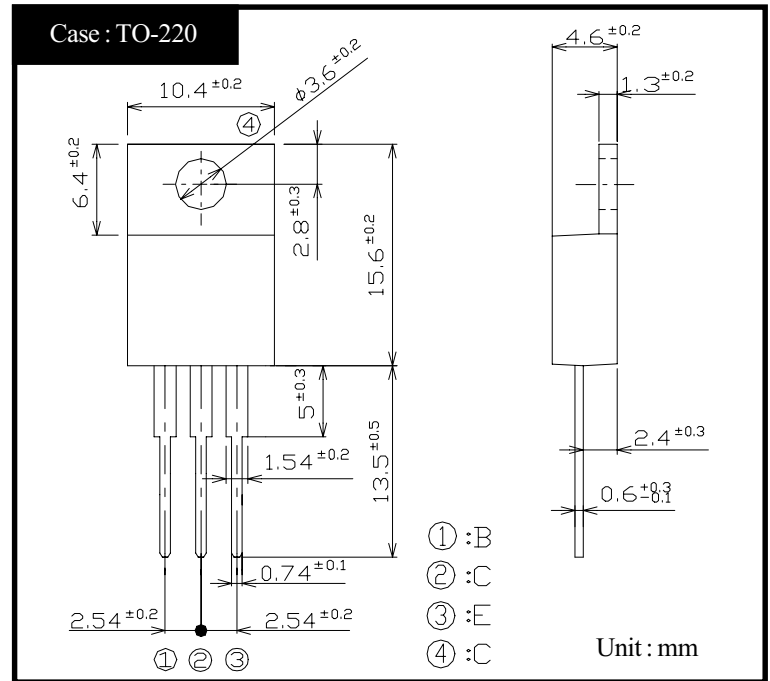
# SHINDENGEN

## Darlington Transistor

**2SD1024**  
(T8L10)

**8A NPN**

### OUTLINE DIMENSIONS



### RATINGS

#### ● Absolute Maximum Ratings

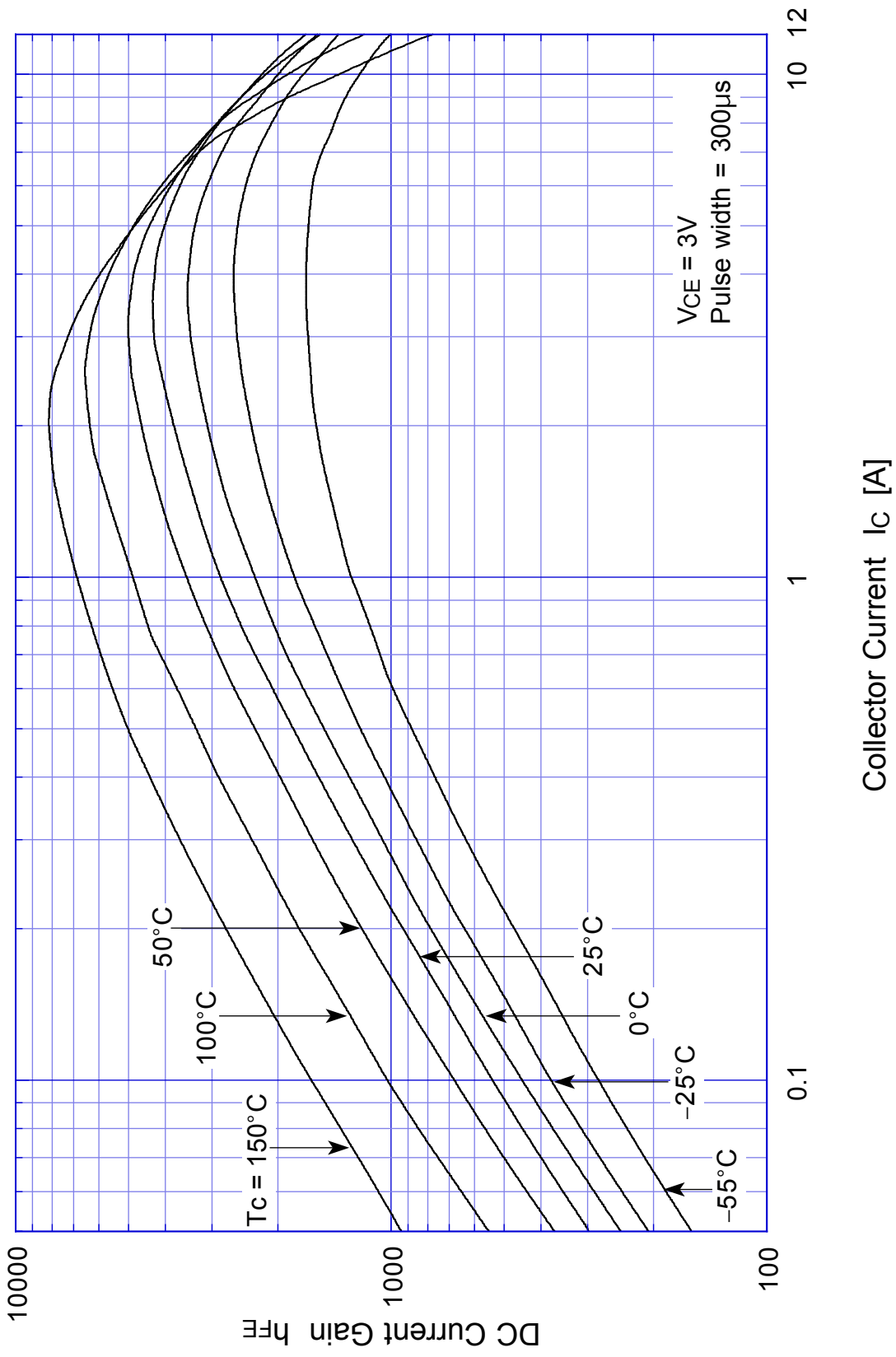
Item	Symbol	Conditions	Ratings	Unit
Storage Temperature	T <sub>stg</sub>		-55~+150	°C
Junction Temperature	T <sub>j</sub>		+150	°C
Collector to Base Voltage	V <sub>CB0</sub>		100	V
Collector to Emitter Voltage	V <sub>CEO</sub>		100	V
Emitter to Base Voltage	V <sub>EBO</sub>		7	V
Collector Current DC	I <sub>C</sub>		8	A
Collector Current Peak	I <sub>CP</sub>		12	A
Base Current DC	I <sub>B</sub>		0.5	A
Base Current Peak	I <sub>BP</sub>		1	A
Total Transistor Dissipation	P <sub>T</sub>	T <sub>c</sub> = 25°C	50	W
Mounting Torque	TOR	(Recommended torque : 0.3N·m)	0.5	N·m

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

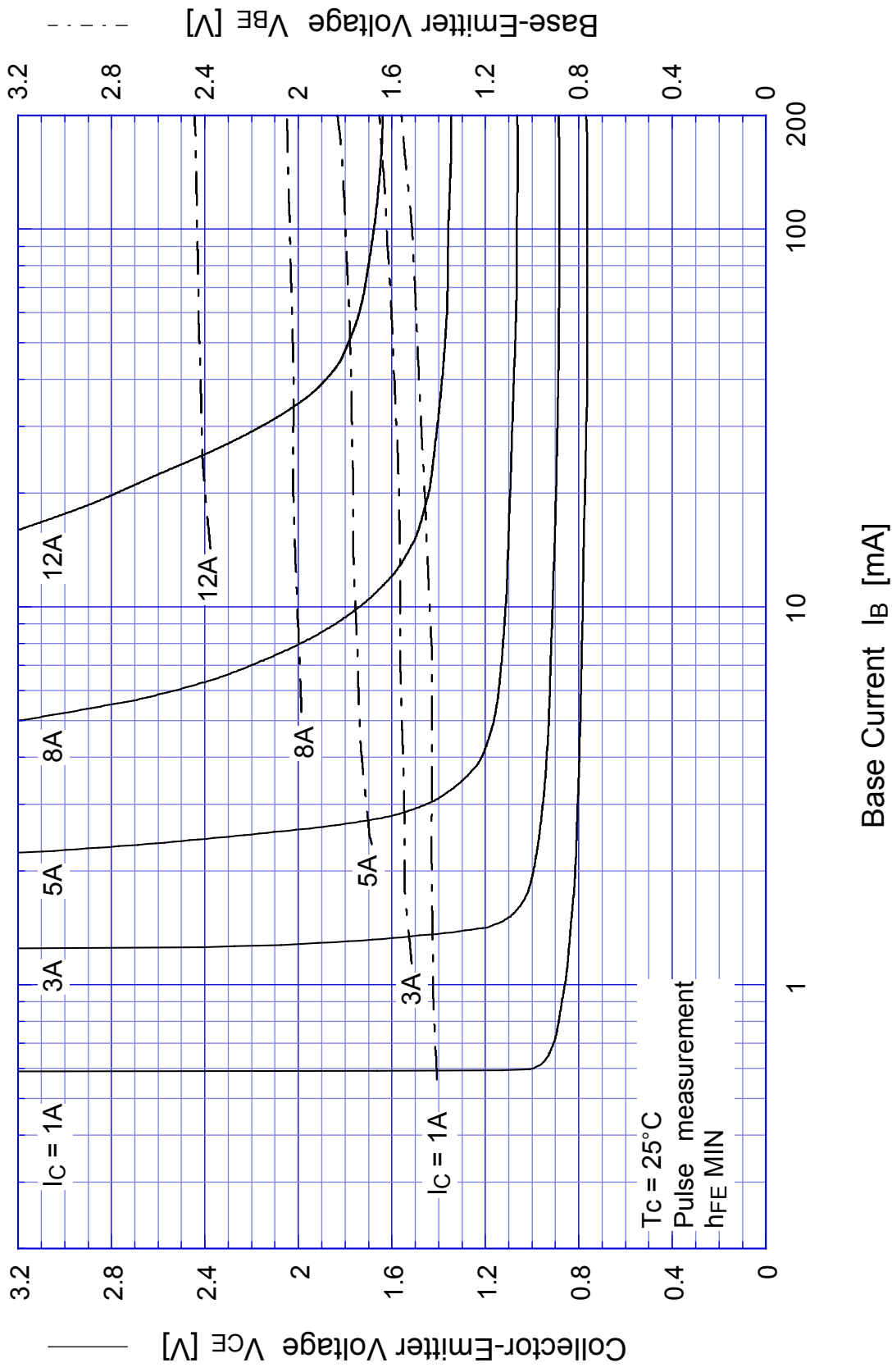
Item	Symbol	Conditions	Ratings	Unit
Collector Cutoff Current	I <sub>CB0</sub>	V <sub>CB</sub> = 100V	Max 0.1	mA
	I <sub>CEO</sub>	V <sub>CE</sub> = 100V	Max 0.1	
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> = 7V	Max 5	mA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> = 3V, I <sub>C</sub> = 5A	Min 1,500	
			Max 30,000	
Collector to Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = 5A	Max 1.5	V
Base to Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>B</sub> = 6mA	Max 2.0	V
Thermal Resistance	θ <sub>jc</sub>	Junction to case	Max 2.5	°C/W
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> = 10V, I <sub>C</sub> = 0.8A	TYP 20	MHz
Turn on Time	ton		Max 2	μs
Storage Time	ts	I <sub>C</sub> = 8A I <sub>B1</sub> = I <sub>B2</sub> = 8mA R <sub>L</sub> = 3Ω	Max 5	
Fall Time	tf	V <sub>BB2</sub> = 4V	Max 3	

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$h_{FE} - I_C$

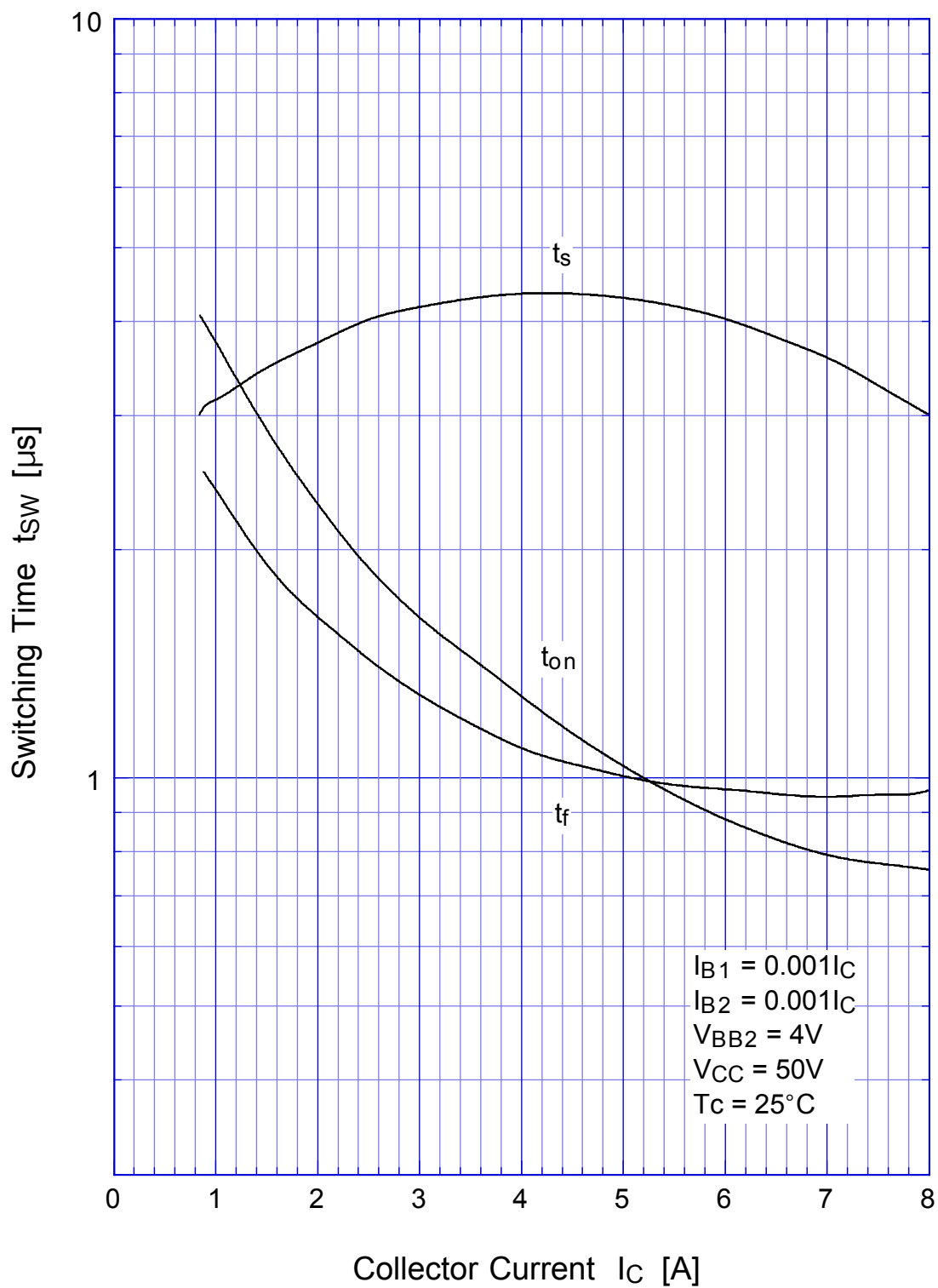


## 2SD1024 Saturation Voltage



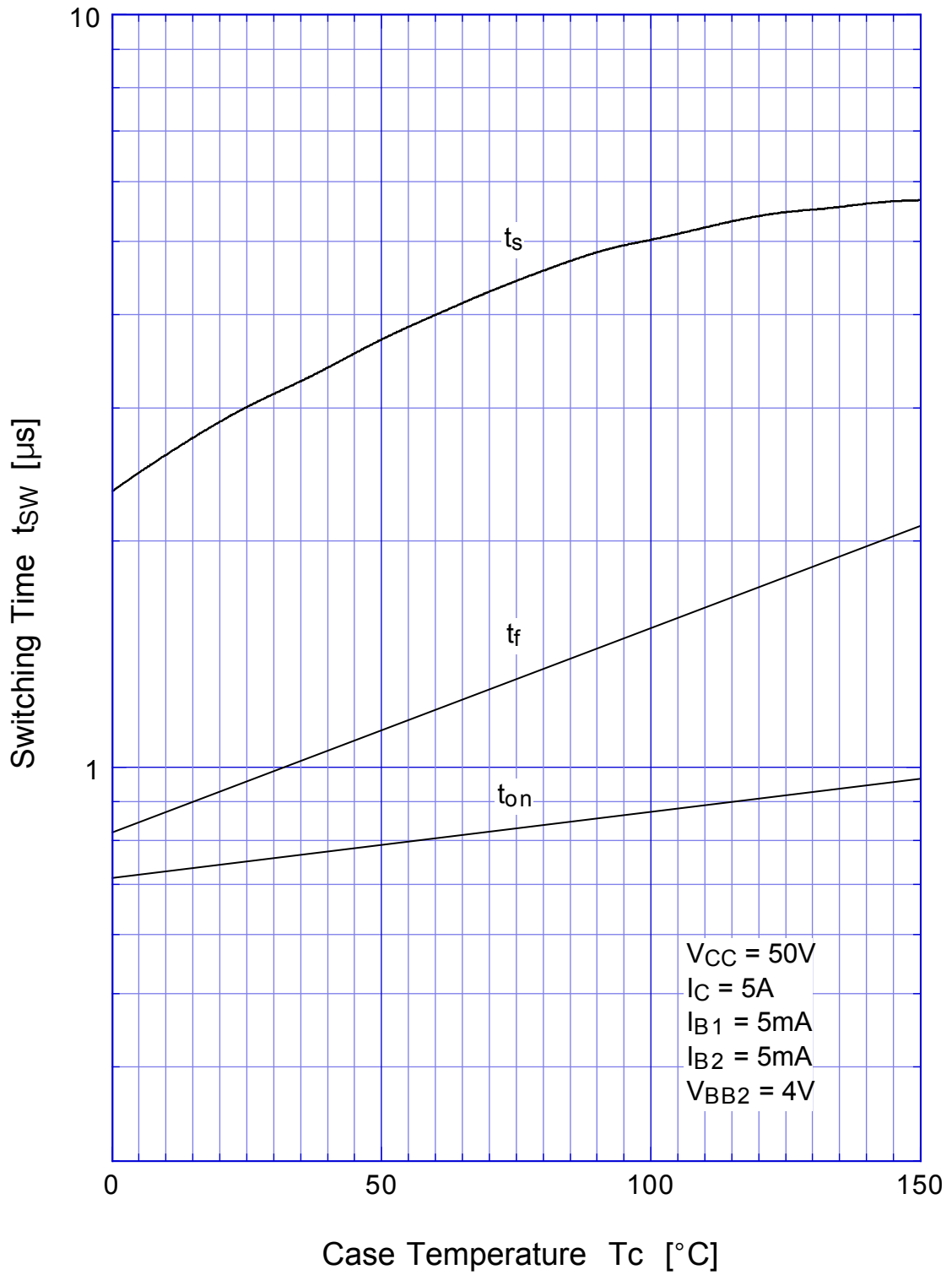
# 2SD1024

## Switching Time - $I_C$

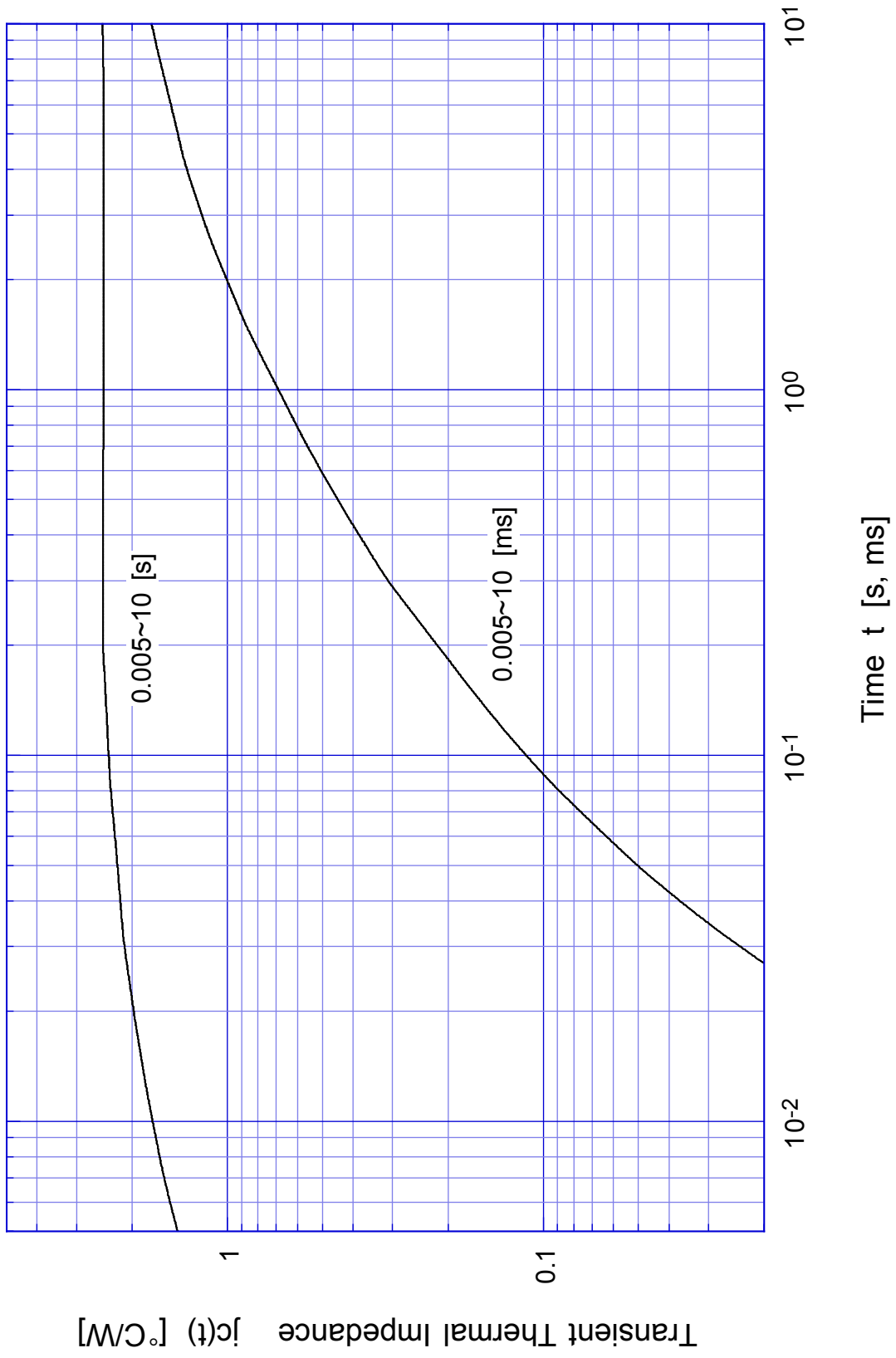


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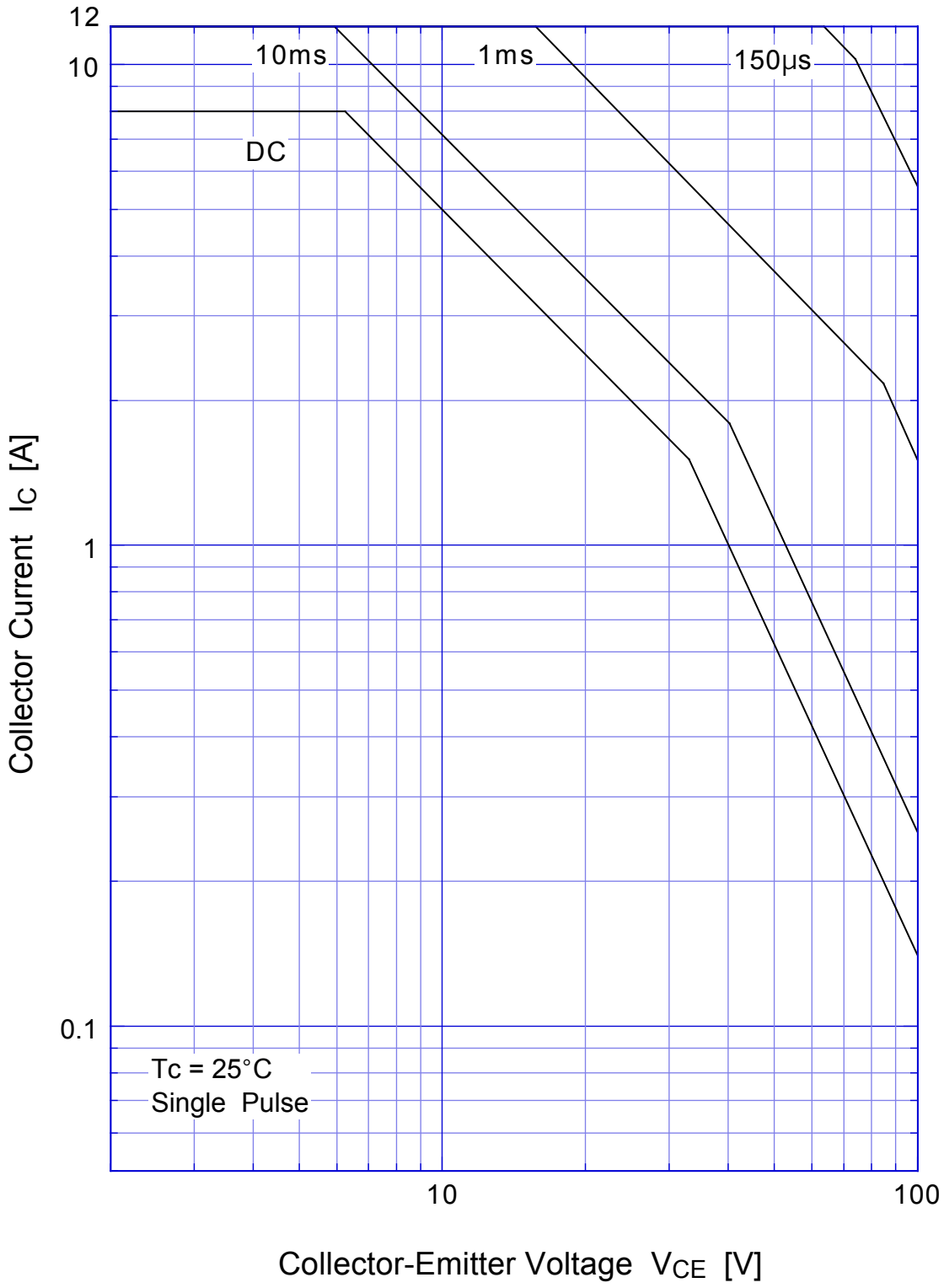
## Switching Time - Tc



# 2SD1024 Transient Thermal Impedance



2SD1024 Forward Bias SOA



## 2SD1024 Collector Current Derating

