

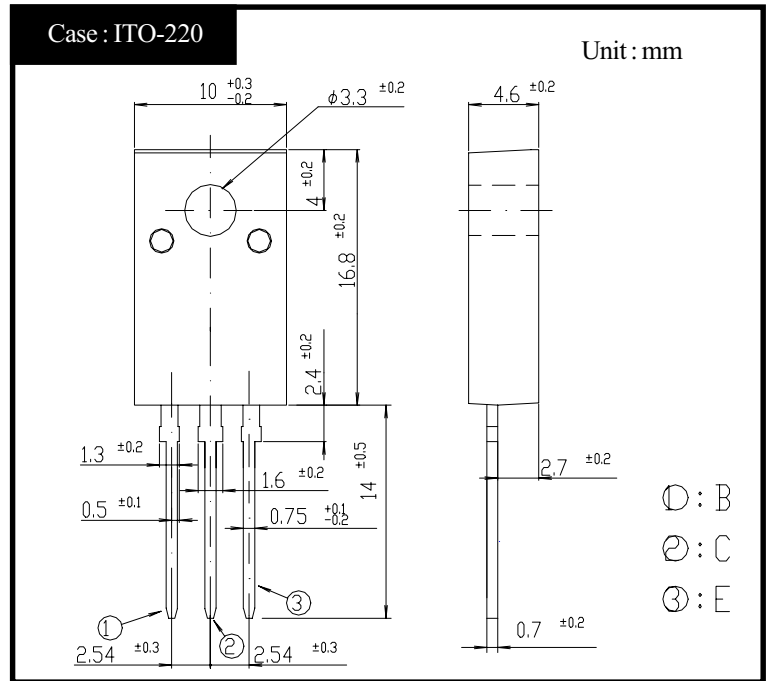
# SHINDENGEN

## Darlington Transistor

**2SB1284**  
(TP10J10)

**-10A PNP**

### OUTLINE DIMENSIONS



### RATINGS

#### ● Absolute Maximum Ratings

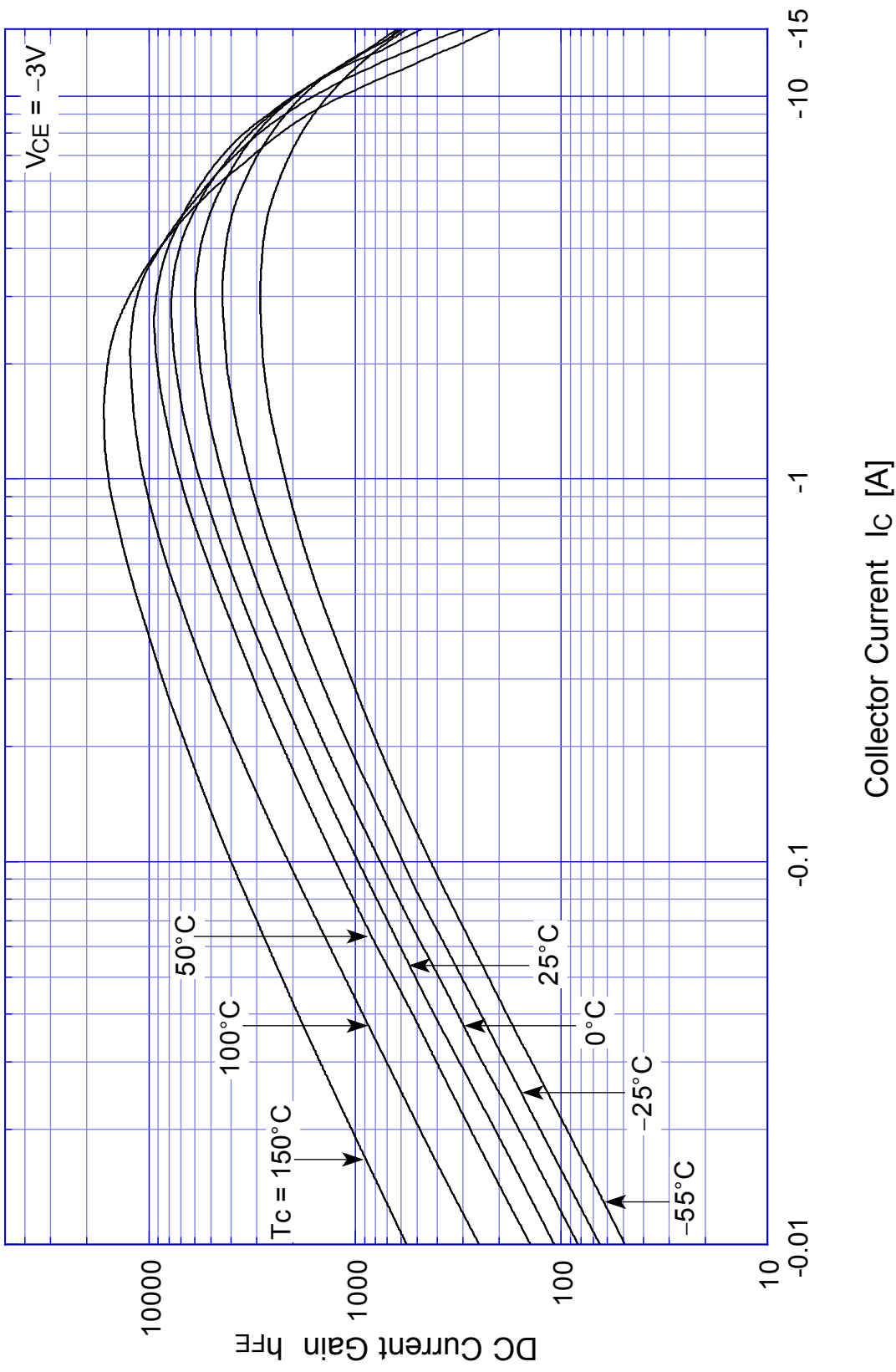
Item	Symbol	Conditions	Ratings	Unit
Storage Temperature	$T_{stg}$		-55~+150	°C
Junction Temperature	$T_j$		+150	°C
Collector to Base Voltage	$V_{CBO}$		-100	V
Collector to Emitter Voltage	$V_{CEO}$		-100	V
Emitter to Base Voltage	$V_{EBO}$		-7	V
Collector Current DC	$I_C$		-10	A
Collector Current Peak	$I_{CP}$		-15	A
Base Current DC	$I_B$		-0.8	A
Base Current Peak	$I_{BP}$		-1.5	A
Total Transistor Dissipation	$P_T$	$T_c = 25^\circ\text{C}$	35	W
Dielectric Strength	$V_{dis}$	Terminals to case AC 1 minute	2	kV
Mounting Torque	TOR	(Recommended torque : 0.3N·m)	0.5	N·m

#### ● Electrical Characteristics ( $T_c=25^\circ\text{C}$ )

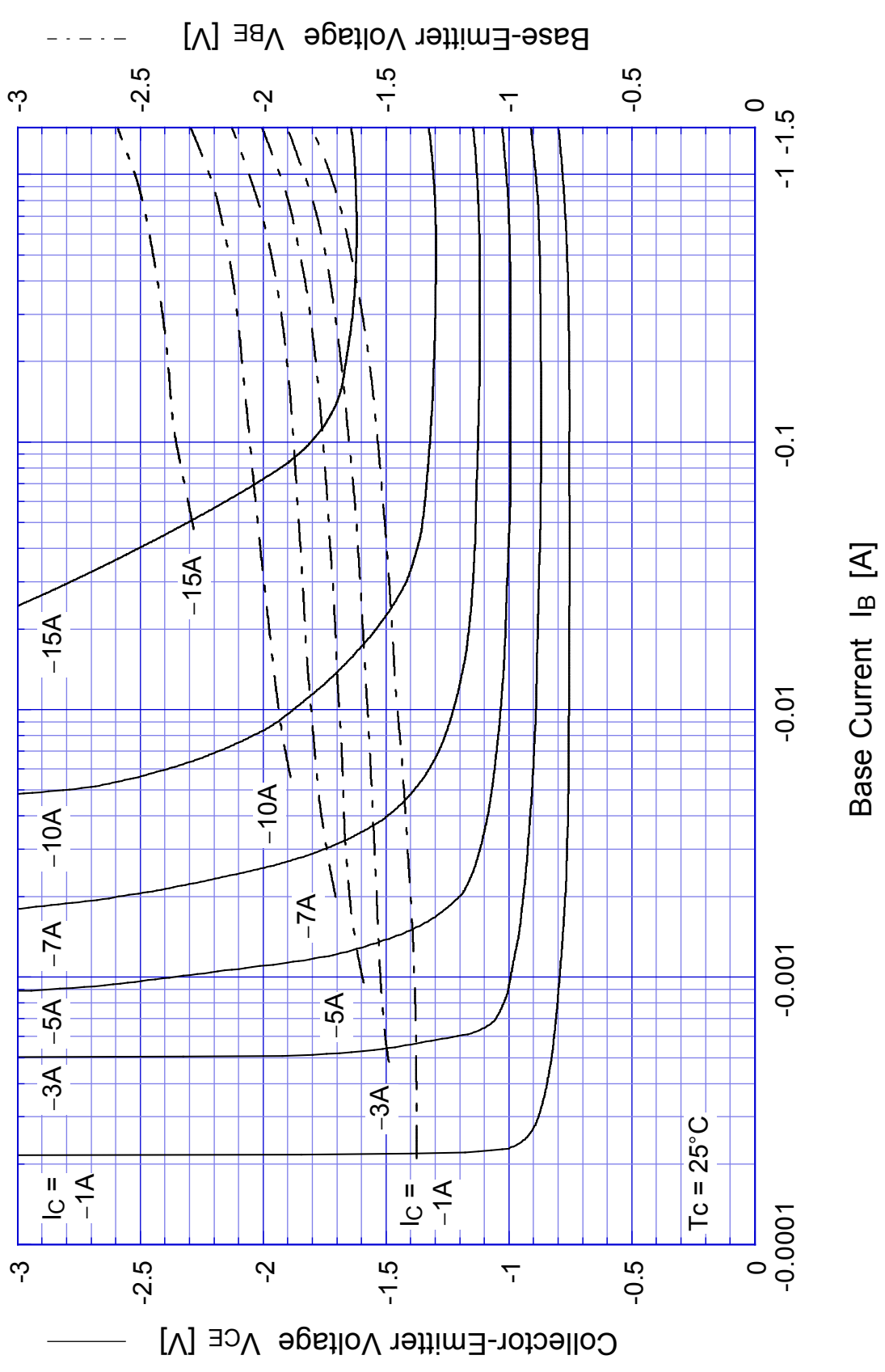
Item	Symbol	Conditions	Ratings	Unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = -100\text{V}$	Max -0.1	mA
	$I_{CEO}$	$V_{CE} = -100\text{V}$	Max -0.1	
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = -7\text{V}$	Max -5	mA
DC Current Gain	$h_{FE}$	$V_{CE} = -3\text{V}, I_C = -5\text{A}$	Min 1,500	
			Max 15,000	
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -5\text{A}$	Max -1.5	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	$I_B = -10\text{mA}$	Max -2.0	V
Thermal Resistance	$\theta_{jc}$	Junction to case	Max 3.57	°C/W
Transition Frequency	$f_T$	$V_{CE} = 10\text{V}, I_C = -1\text{A}$	TYP 20	MHz
Turn on Time	$t_{on}$	$I_C = -5\text{A}$ $I_{B1} = I_{B2} = -10\text{mA}$ $R_L = 6\Omega$	Max 1	$\mu\text{s}$
Storage Time	$t_s$		Max 4	
Fall Time	$t_f$		Max 2	

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$h_{FE} - I_C$

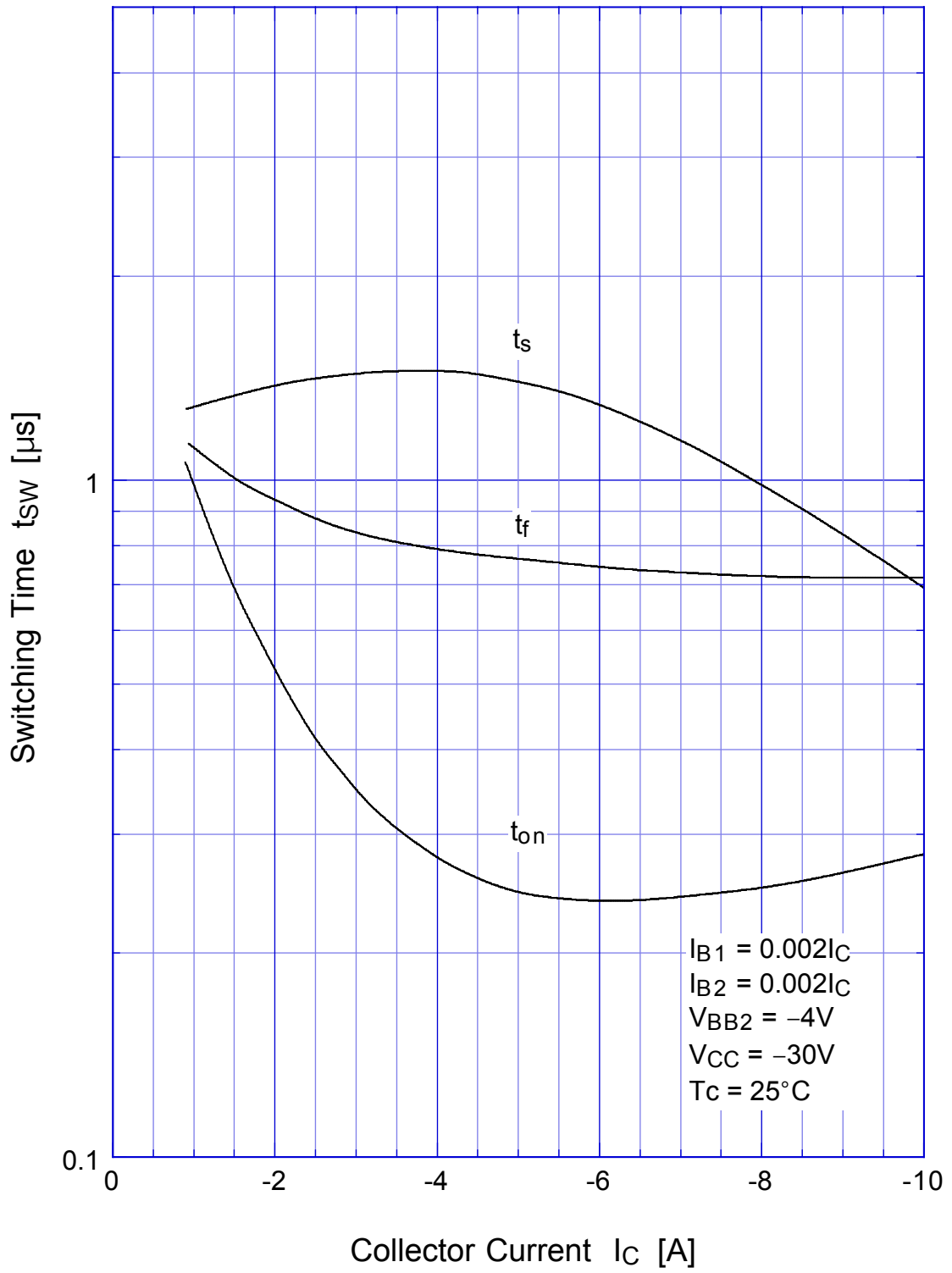


# 2SB1284 Saturation Voltage



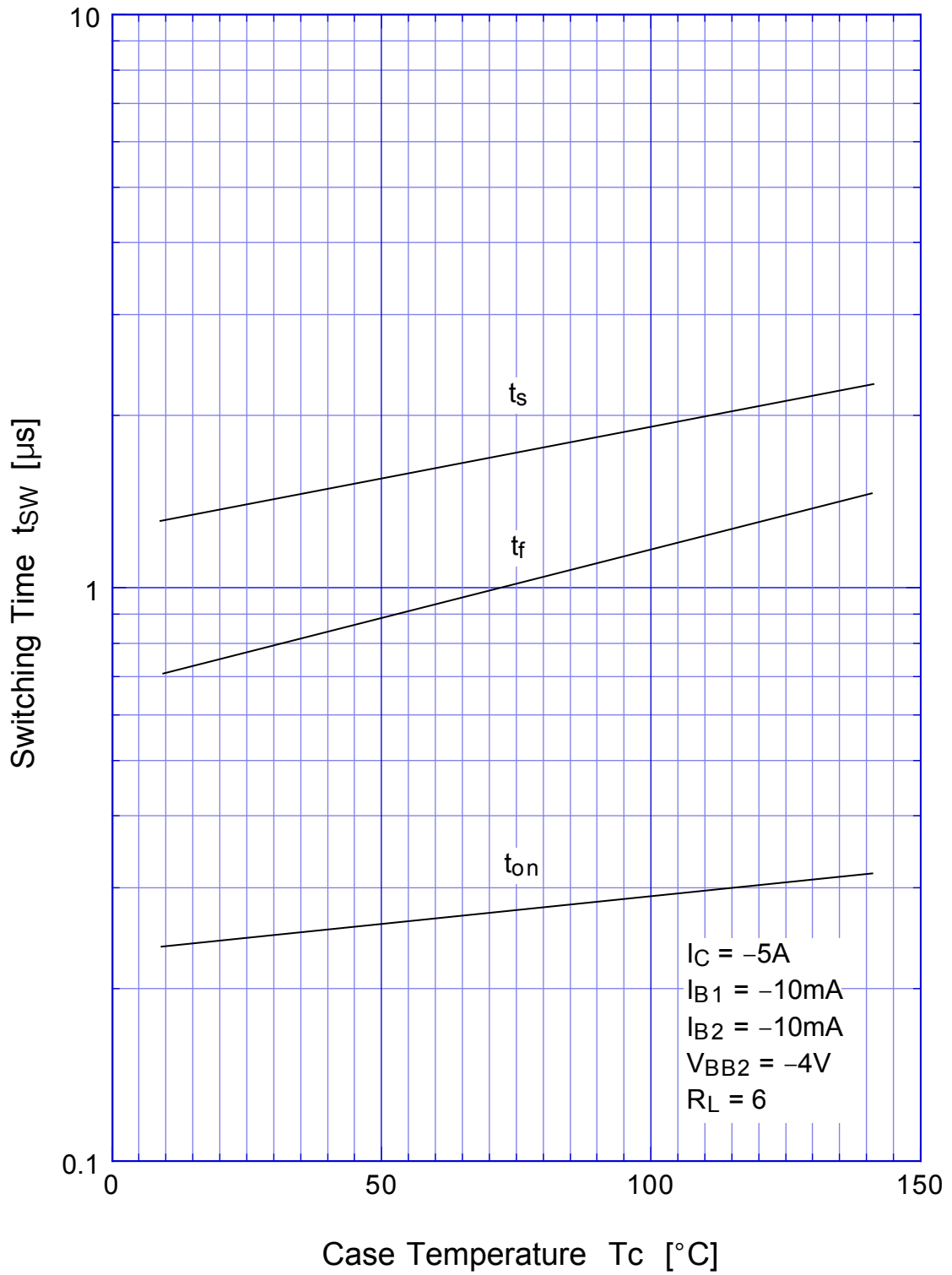
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## Switching Time - $I_C$

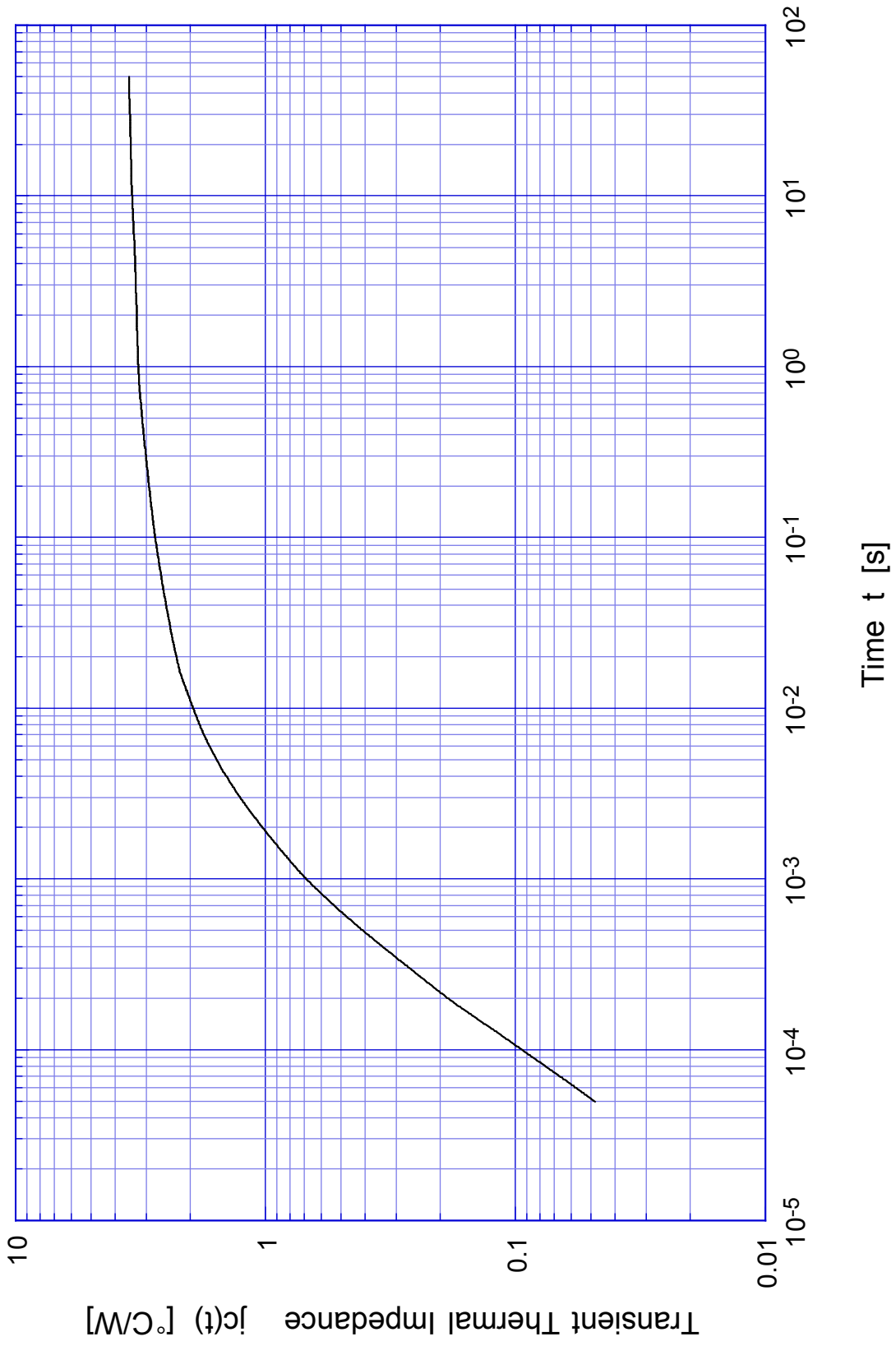


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## Switching Time - Tc

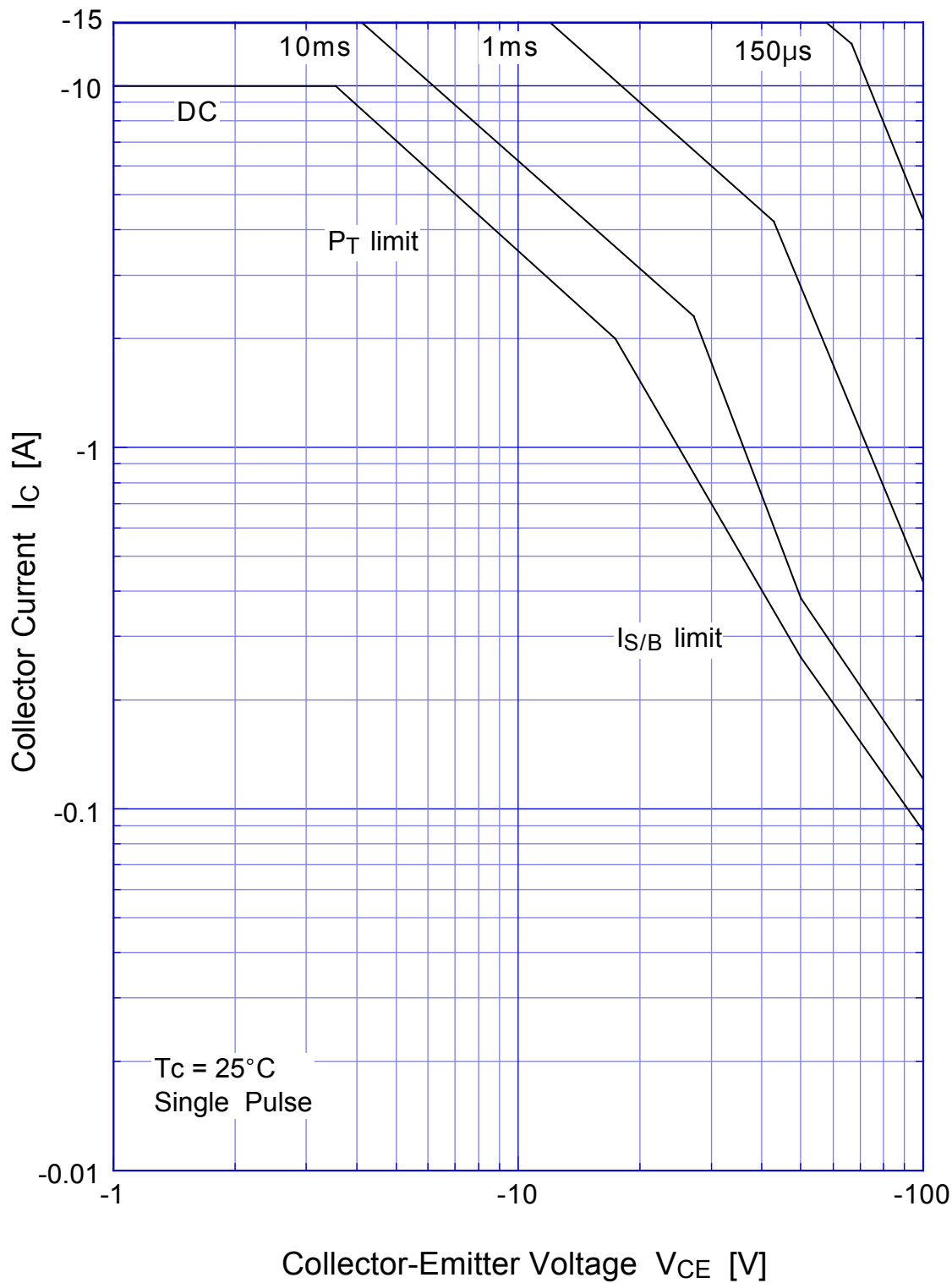


# 2SB1284 Transient Thermal Impedance



# 2SB1284

# Forward Bias SOA



## 2SB1284 Collector Current Derating





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Reverse Bias SOA

