SHINDENGEN

Darlington Transistor

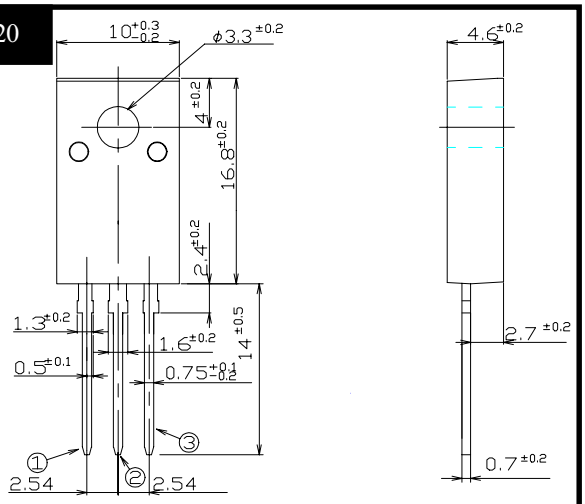
2SB1283
(TP7J10)

−7A PNP

OUTLINE DIMENSIONS

Case : ITO-220

Unit : mm



① :B
② :C
③ :E

RATINGS

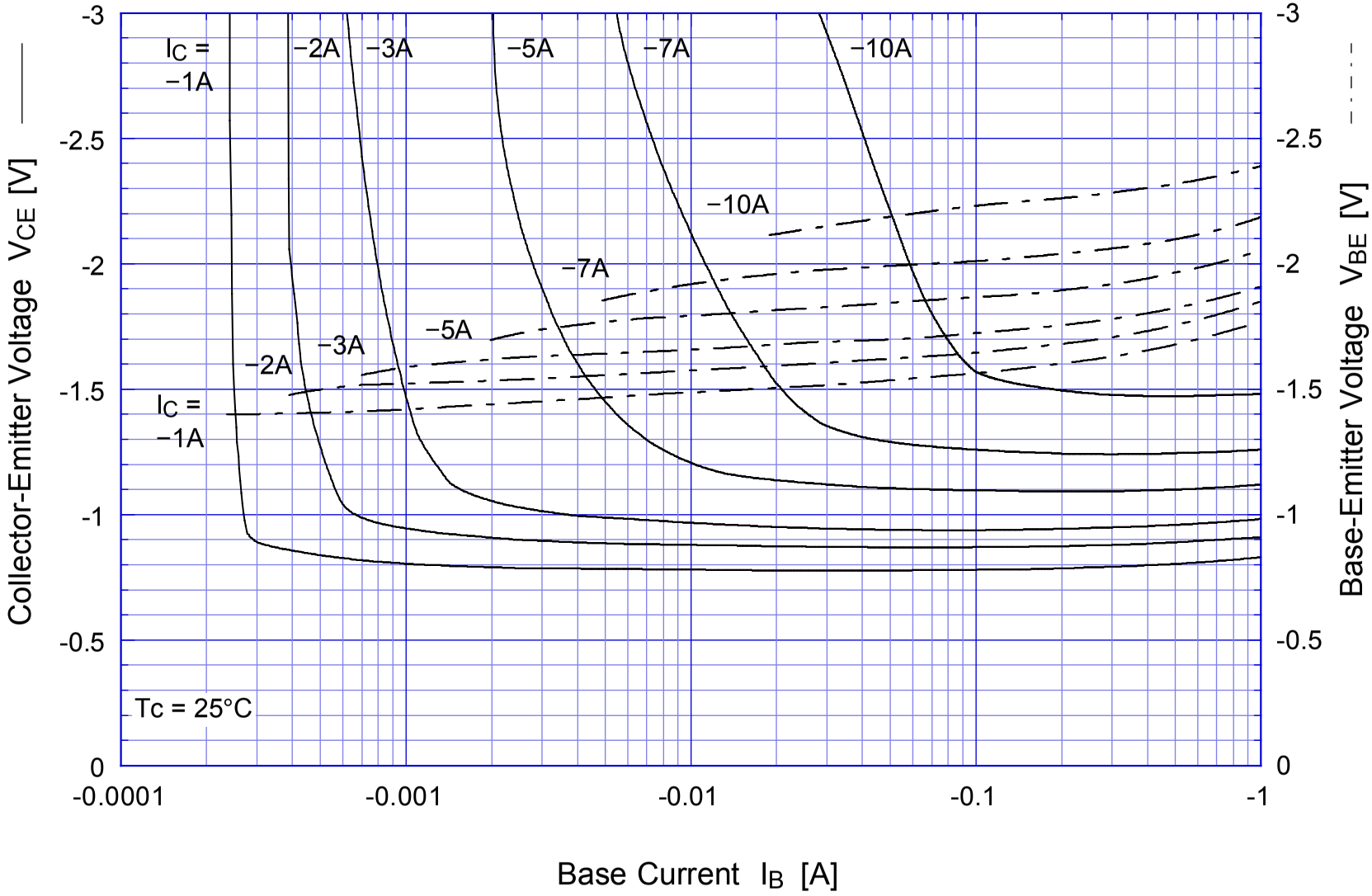
●Absolute Maximum Ratings

Item	Symbol	Conditions	Ratings	Unit
Storage Temperature	Tstg		−55～+150	℃
Junction Temperature	Tj		+150	℃
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		−7	A
Collector Current Peak	I_{CP}		−10	A
Base Current DC	I_B		−0.5	A
Base Current Peak	I_{BP}		−1	A
Total Transistor Dissipation	P_T	Tc = 25℃	30	W
Dielectric Strength	Vdis	Terminals to case AC 1 minute	2	kV
Mounting Torque	TOR	(Recommended torque : 0.3N･m)	0.5	N･m

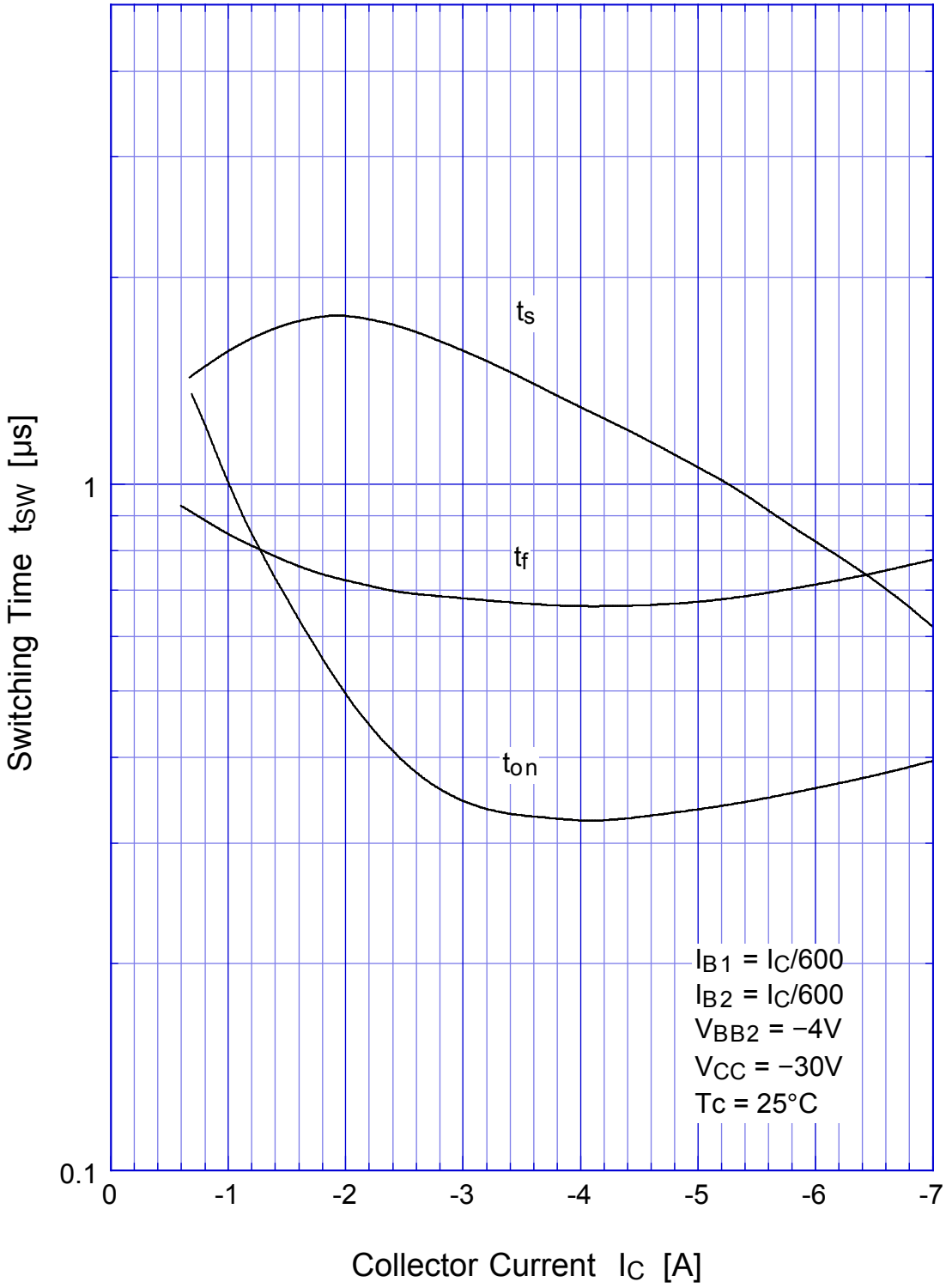
●Electrical Characteristics (Tc=25℃)

Item	Symbol	Conditions	Ratings	Unit
Collector Cutoff Current	I_{CBO}	V_{CB} = −100V	Max −0.1	mA
	I_{CEO}	V_{CE} = −100V	Max −0.1	
Emitter Cutoff Current	I_{EBO}	V_{EB} = −7V	Max −5	mA
DC Current Gain	h_{FE}	V_{CE} = −3V, I_C = −3A	Min 1,500	
			Max 15,000	
Collector to Emitter Saturation Voltage	V_{CE}(sat)	I_C = −3A	Max −1.5	V
Base to Emitter Saturation Voltage	V_{BE}(sat)	I_B = −5mA	Max −2.0	V
Thermal Resistance	θ jc	Junction to case	Max 4.16	℃/W
Transition Frequency	f_T	V_{CE} = 10V, I_C = 0.7A	TYP 20	MHz
Turn on Time	ton	I_C = −3A I_{B1} = I_{B2} = −5mA R_L = 10Ω V_{BB2} = −4V	Max 1	μs
Storage Time	ts		Max 4	
Fall Time	tf		Max 2	

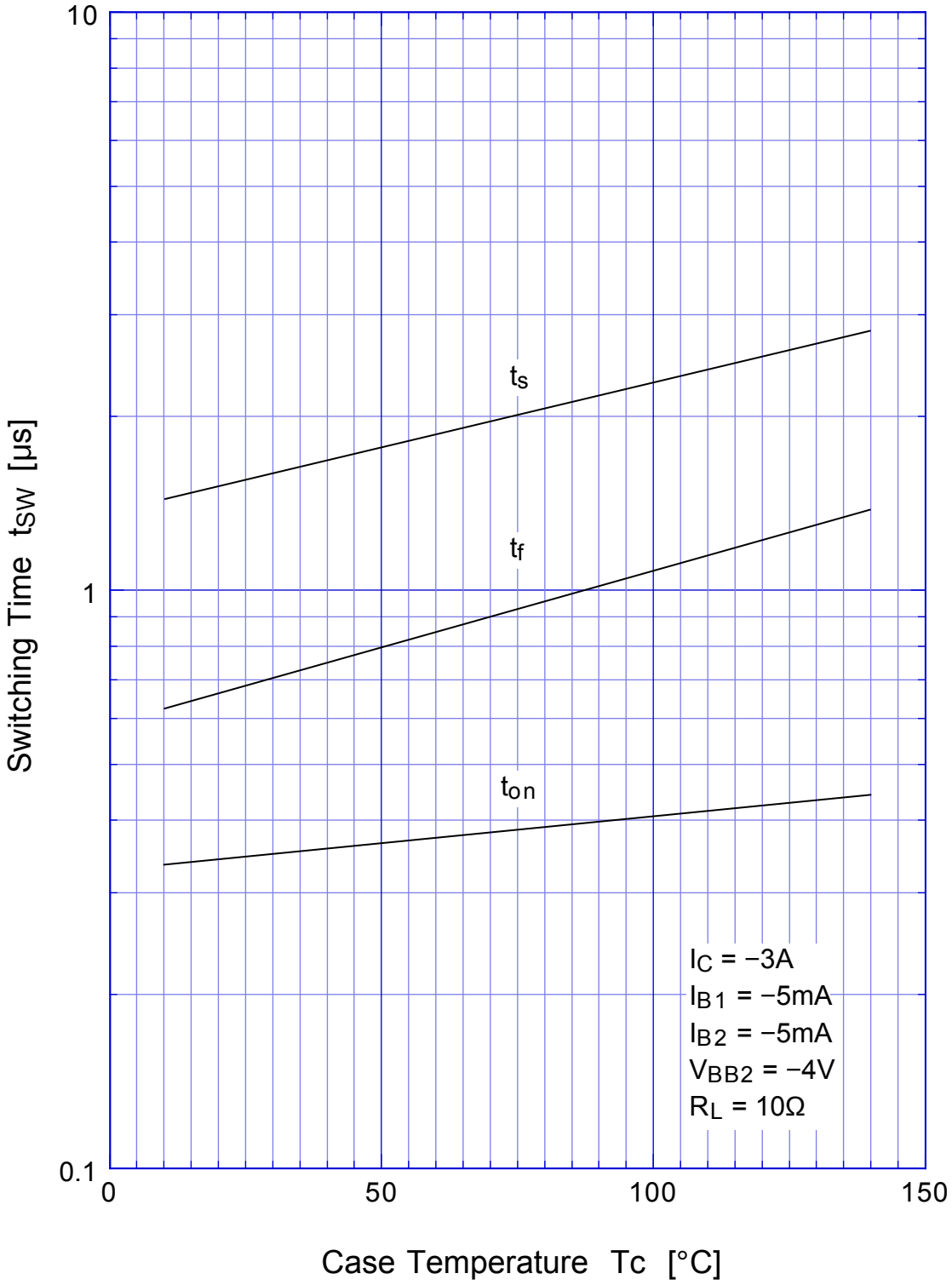
2SB1283 Saturation Voltage

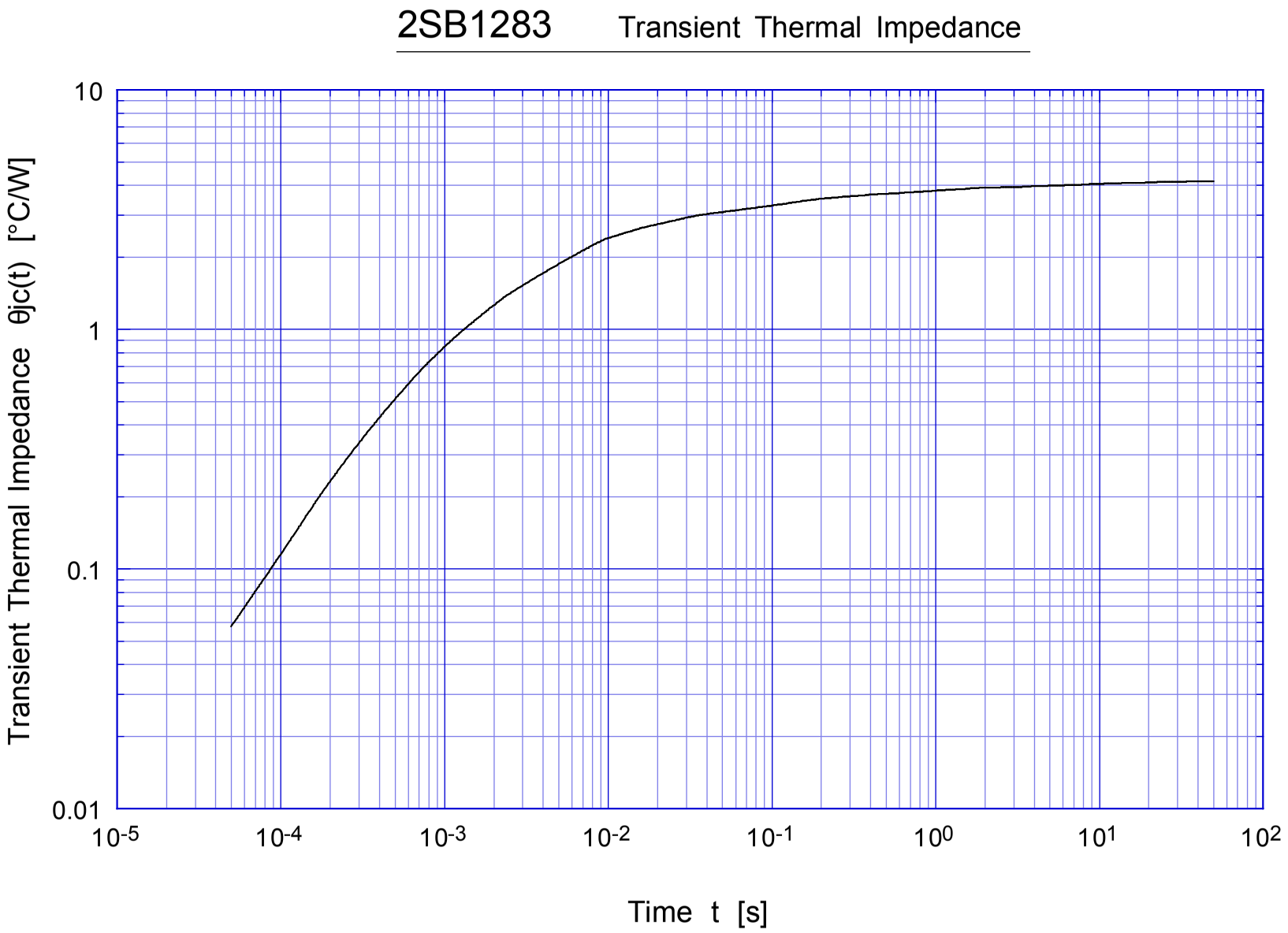


2SB1283 Switching Time - I_C

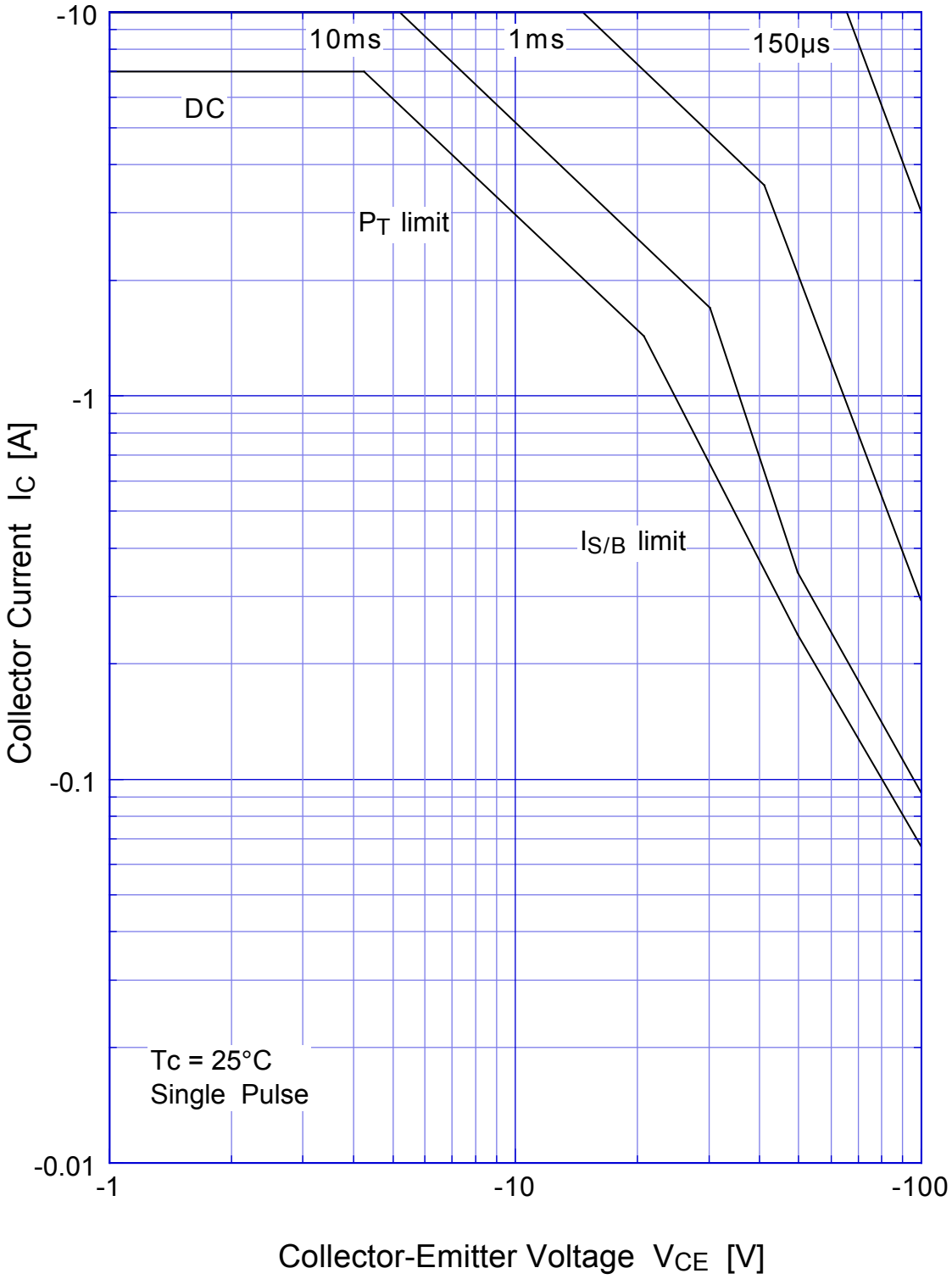


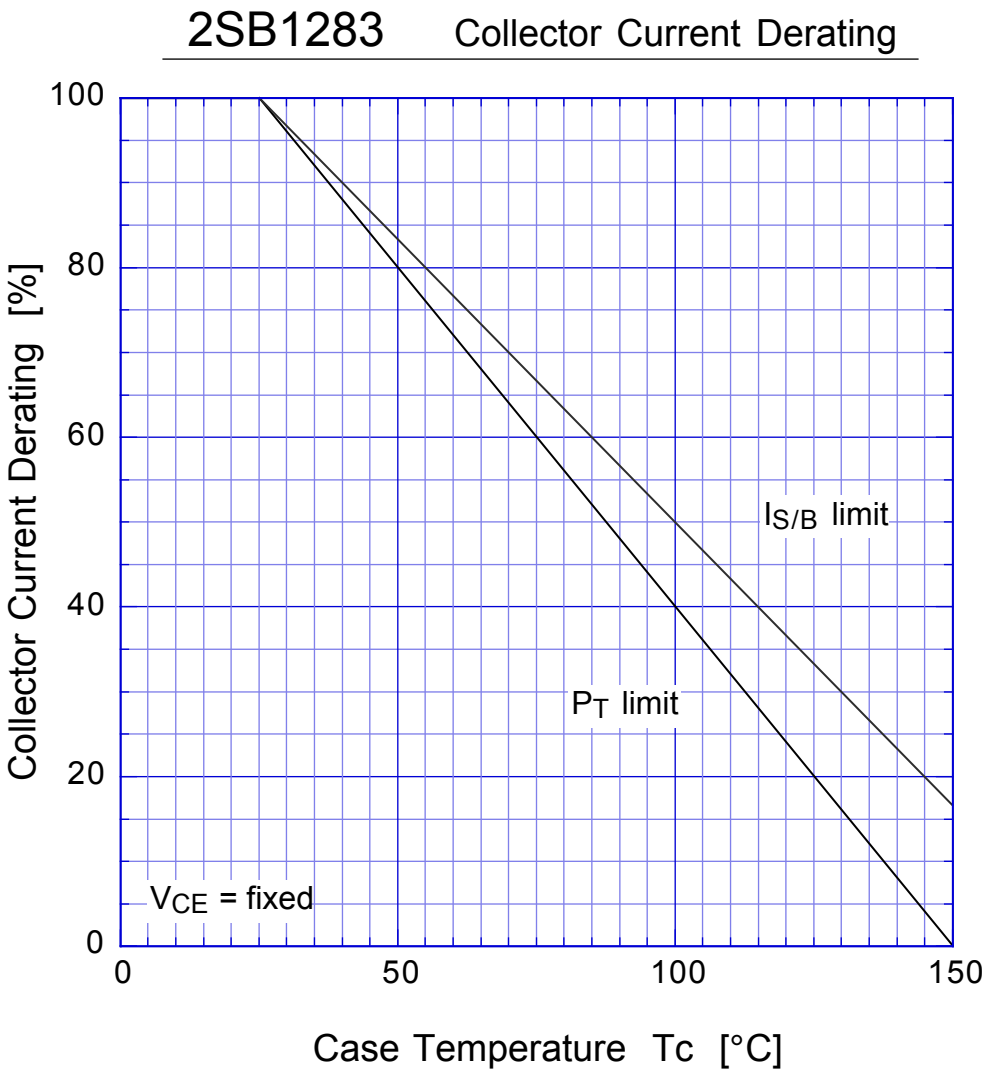
2SB1283 Switching Time - Tc



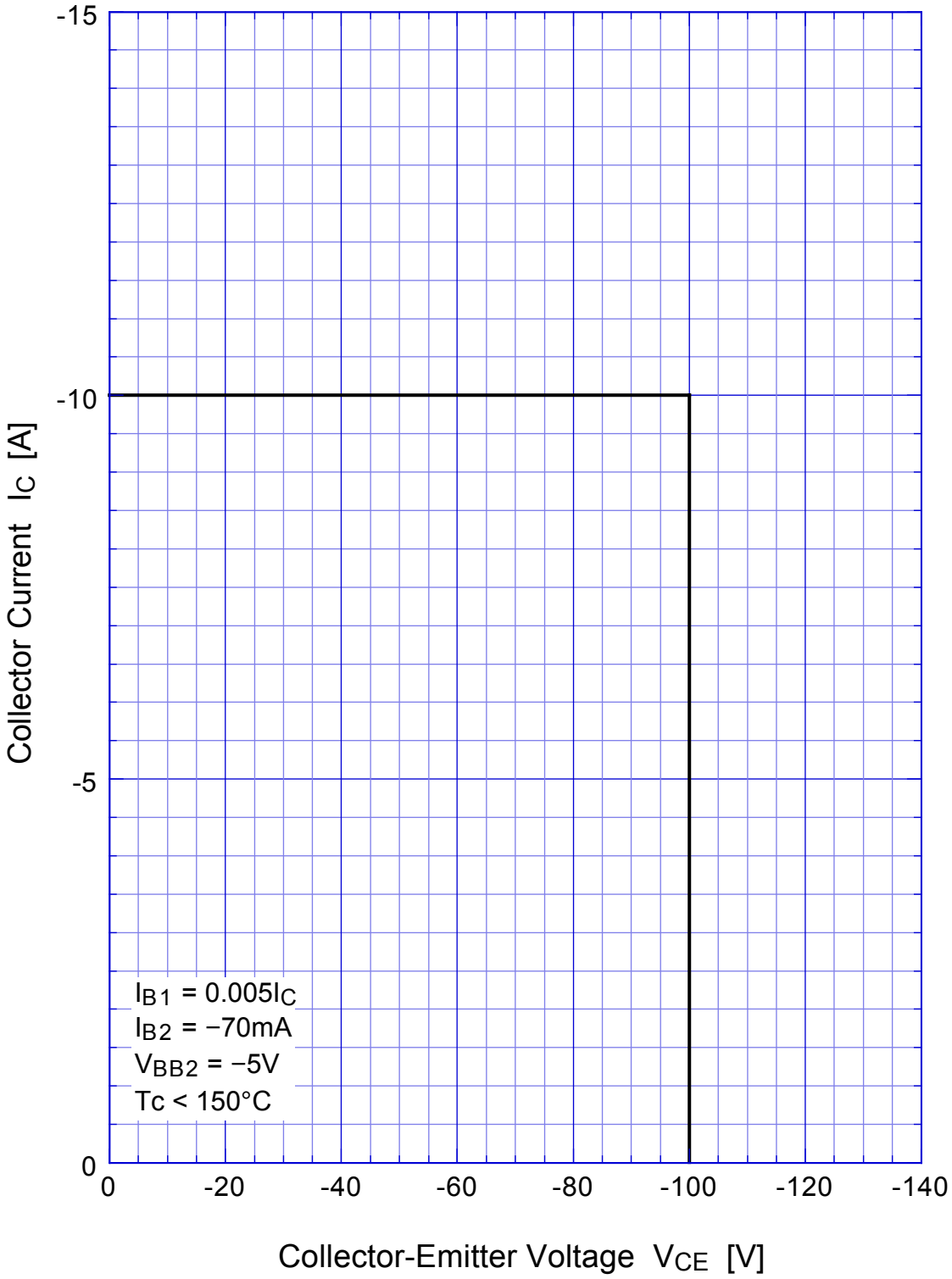

2SB1283
Transient Thermal Impedance
Transient Thermal Impedance θjc(t) [°C/W]
10
1
0.1
0.01
10-5
10-4
10-3
10-2
10-1
100
101
102
Time t [s]

2SB1283 Forward Bias SOA




2SB1283 Collector Current Derating
Collector Current Derating [%]
100
80
60
40
20
0
0
50
100
150
Case Temperature Tc [°C]
IS/B limit
PT limit
VCE = fixed

2SB1283 Reverse Bias SOA



2SB1283 Derating Curve