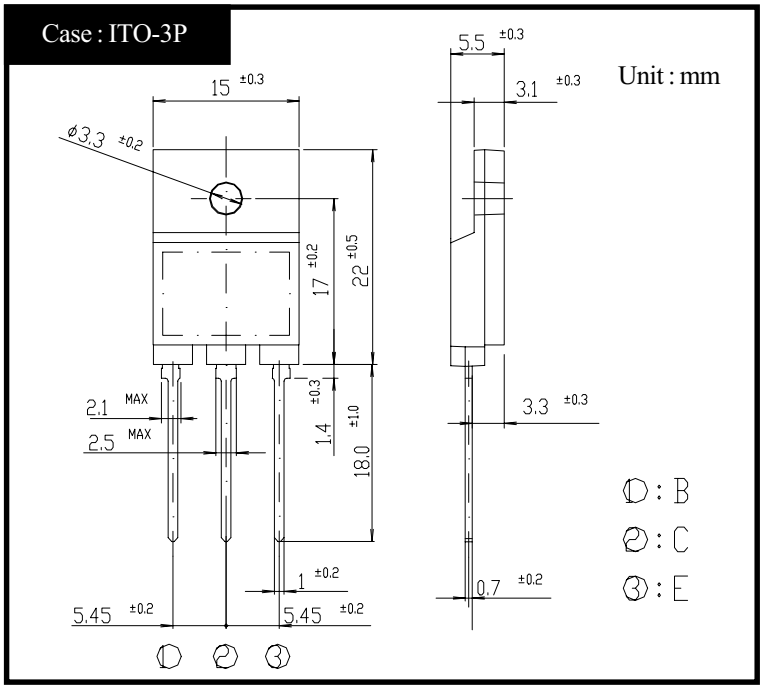
SHINDENGEN

Darlington Transistor

2SB1448
(TP15J10)

-15A PNP

OUTLINE DIMENSIONS



RATINGS

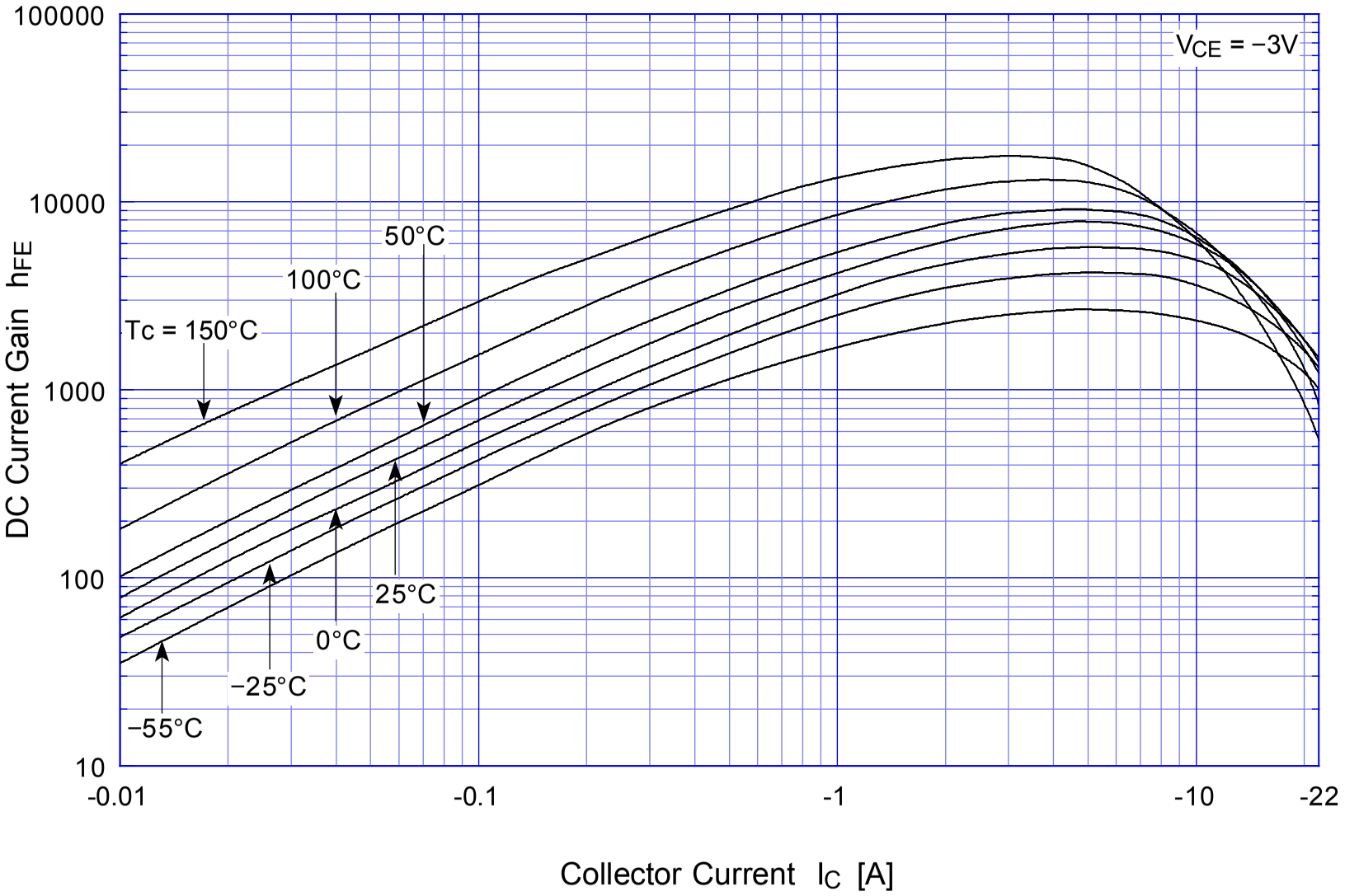
●Absolute Maximum Ratings

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		−15	A
Collector Current Peak	I_{CP}		−22	A
Base Current DC	I_B		−1	A
Base Current Peak	I_{BP}		−2	A
Total Transistor Dissipation	P_T	Tc = 25℃	65	W
Dielectric Strength	Vdis	Terminals to case AC 1 minute	2	kV
Mounting Torque	TOR	(Recommended torque : 0.5N･m)	0.8	N･m

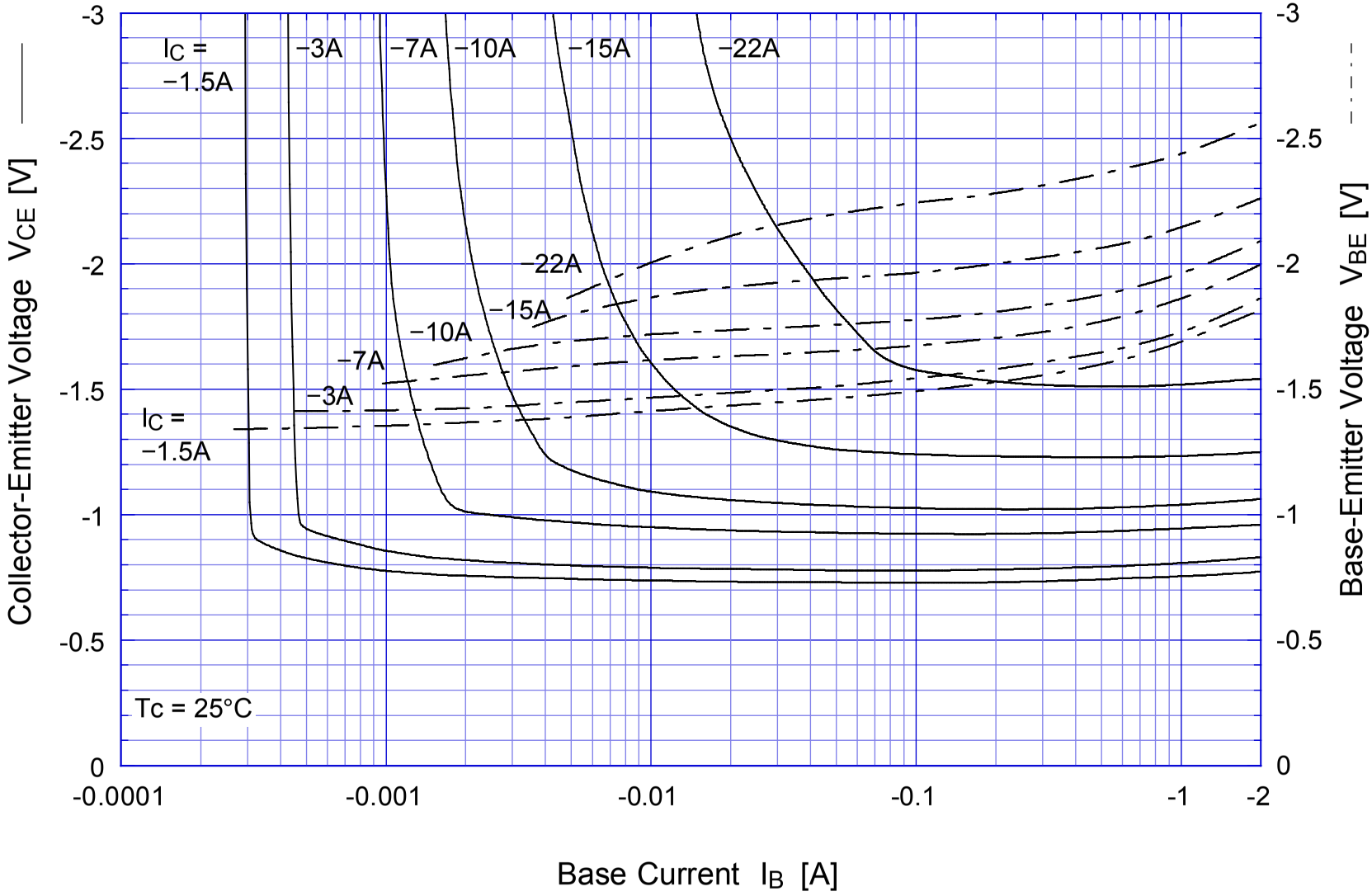
●Electrical Characteristics (Tc=25℃)

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 = −10A	Min 1,500 Max 15,000	
Collector to Emitter Saturation Voltage	V_{CE}(sat)	I_C = −10A	Max −1.5	V
Base to Emitter Saturation Voltage	V_{BE}(sat)	I_B = −20mA	Max −2.0	V
Thermal Resistance	θ jc	Junction to case	Max 1.92	℃/W
Transition Frequency	f_T	V_{CE} = −10V, I_C = −1.5A	TYP 20	MHz
Turn on Time	ton	I_C = −15A I_{B1} = I_{B2} = −20mA R_L = 2Ω V_{BB2} = −4V	Max 1	μs
Storage Time	ts		Max 4	
Fall Time	tf		Max 2	

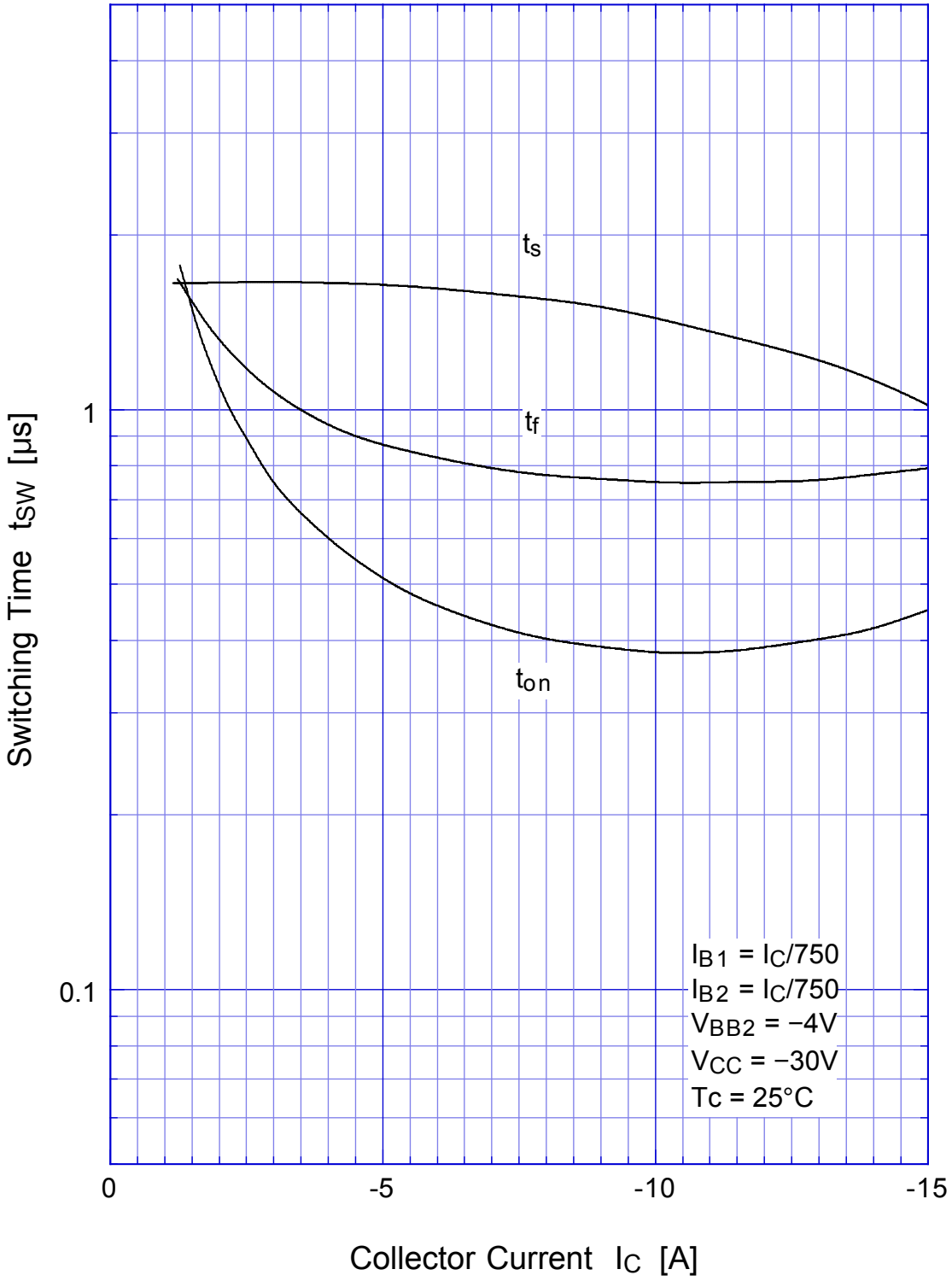
2SB1448 h_{FE} - I_C



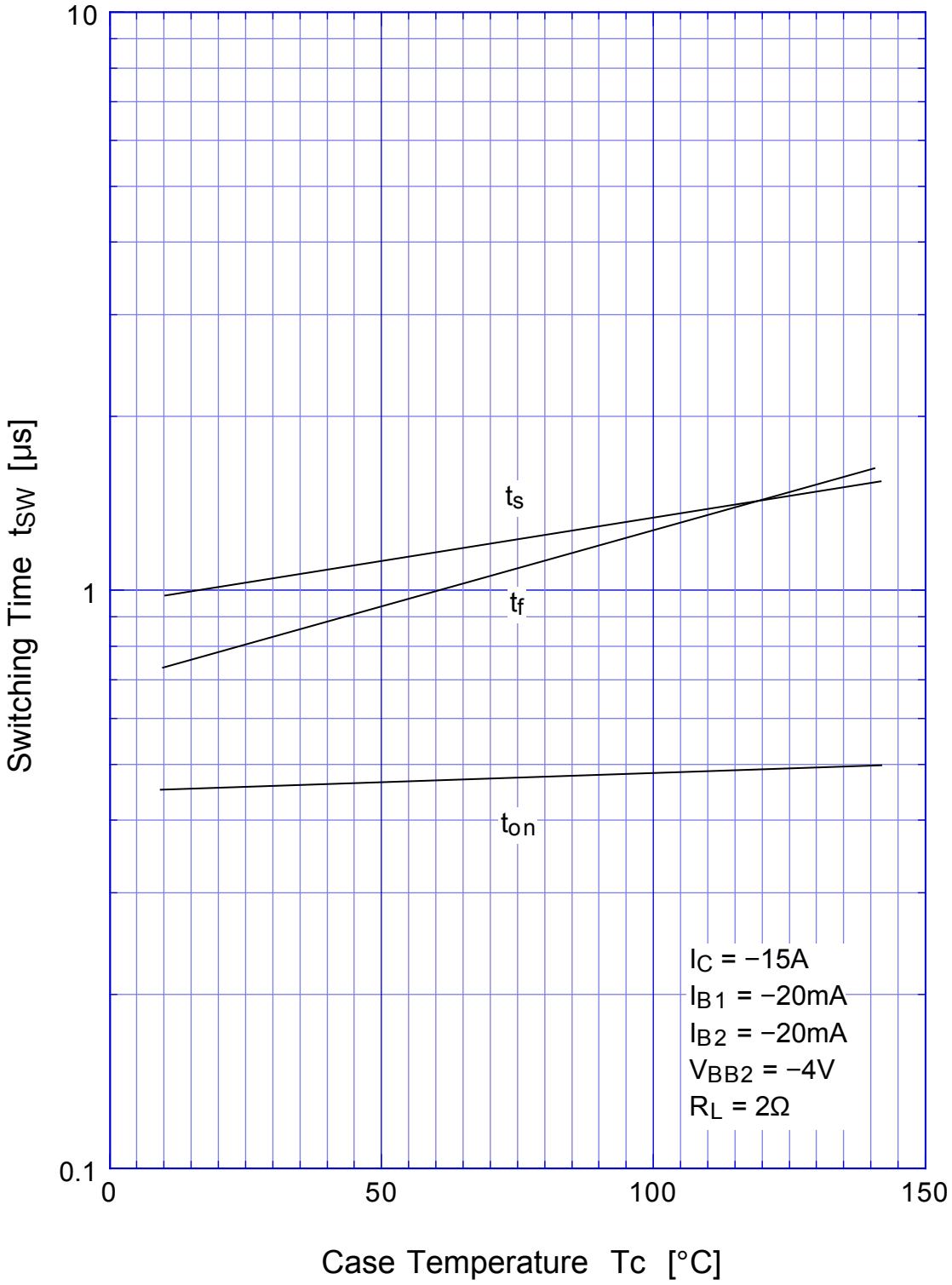
2SB1448 Saturation Voltage

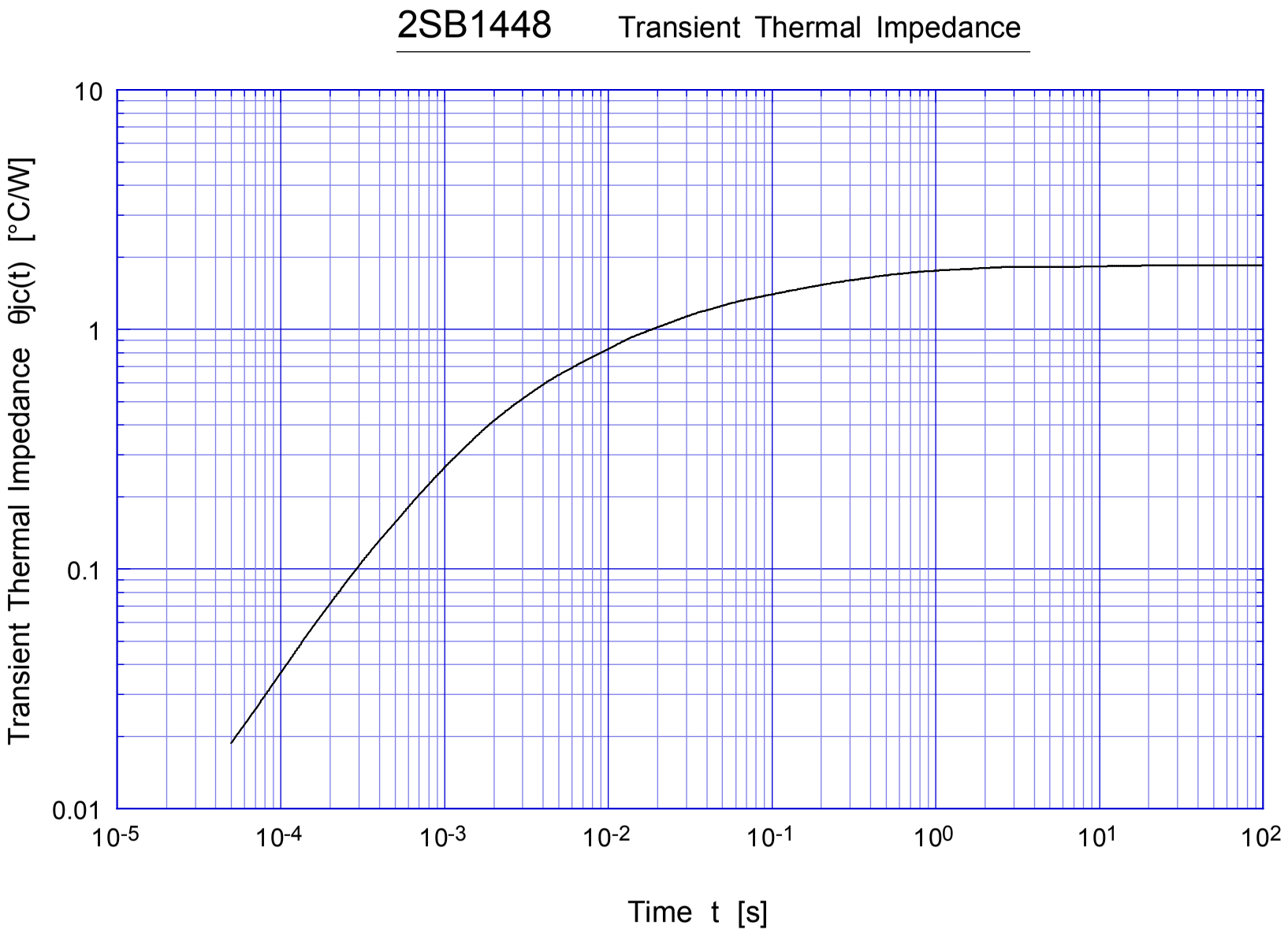


2SB1448 Switching Time - I_C

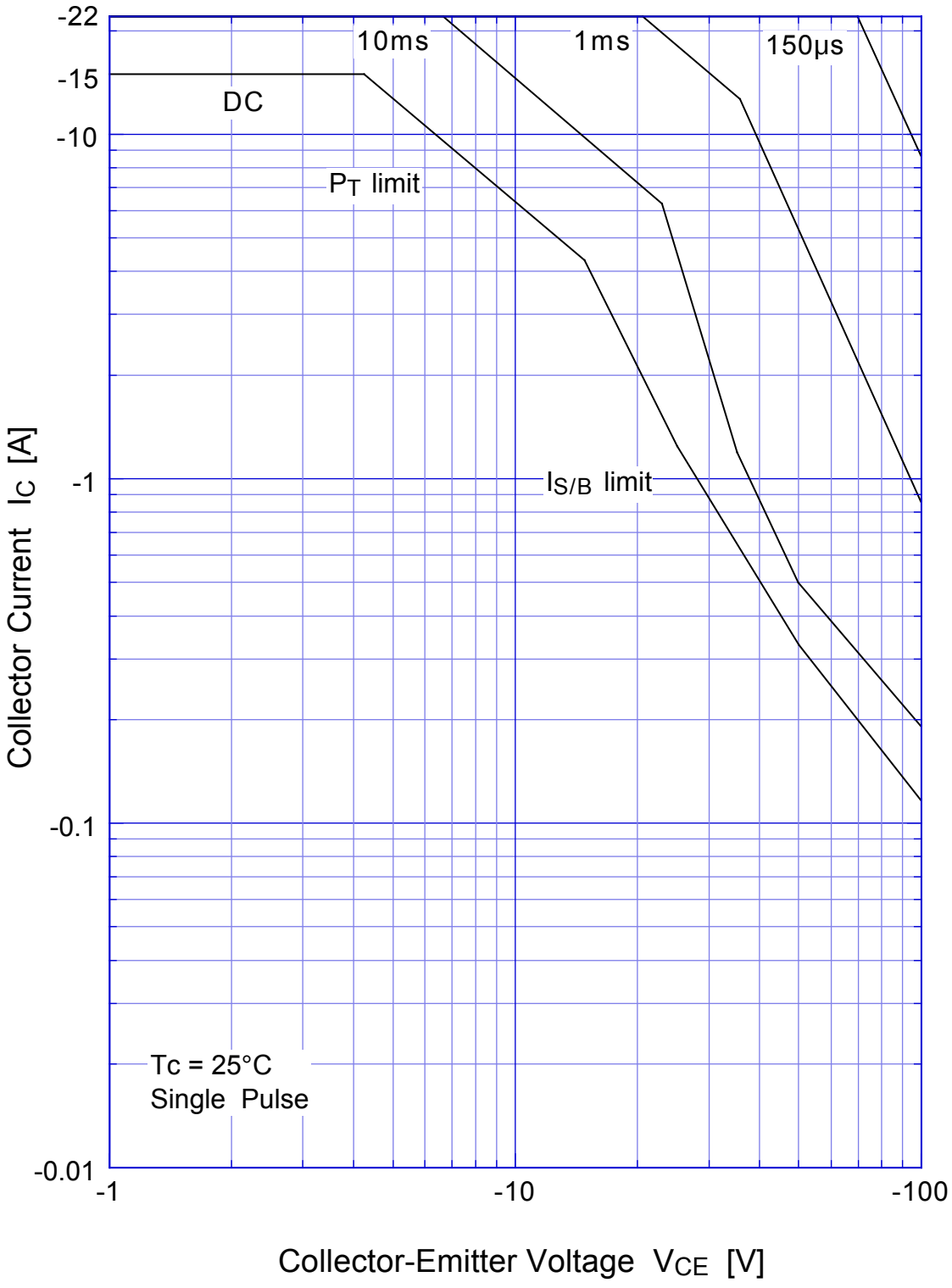


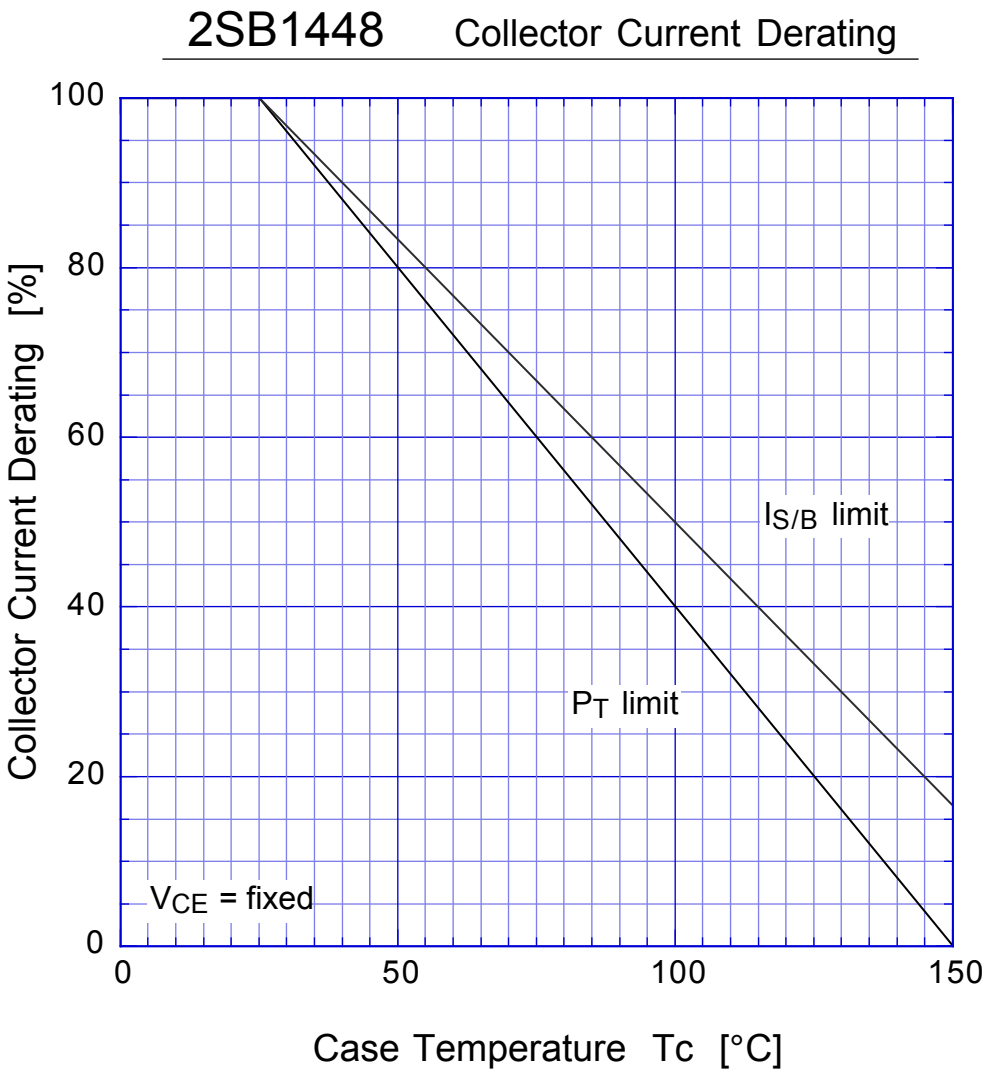
2SB1448 Switching Time - Tc

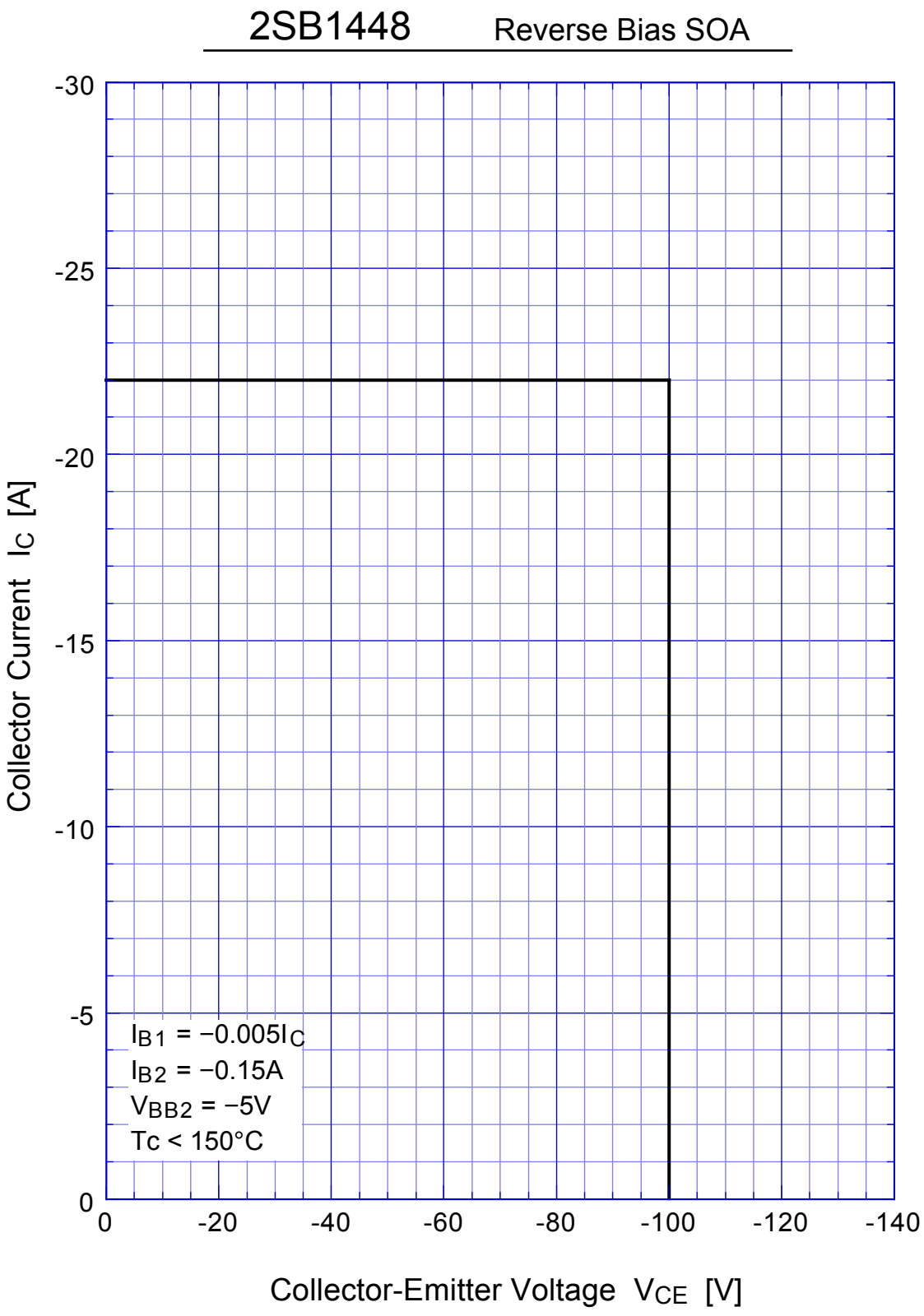



2SB1448
Transient Thermal Impedance
Transient Thermal Impedance θjc(t) [°C/W]
10
1
0.1
0.01
10-5
10-4
10-3
10-2
10-1
100
101
102
Time t [s]

2SB1448 Forward Bias SOA




2SB1448 Collector Current Derating
100
80
60
40
20
0
Collector Current Derating [%]
0
50
100
150
Case Temperature Tc [°C]
IS/B limit
PT limit
VCE = fixed


2SB1448
Reverse Bias SOA
-30
-25
-20
-15
-10
-5
0
Collector Current IC [A]
0
-20
-40
-60
-80
-100
-120
-140
Collector-Emitter Voltage VCE [V]
IB1 = −0.005IC
IB2 = −0.15A
VBB2 = −5V
Tc < 150°C