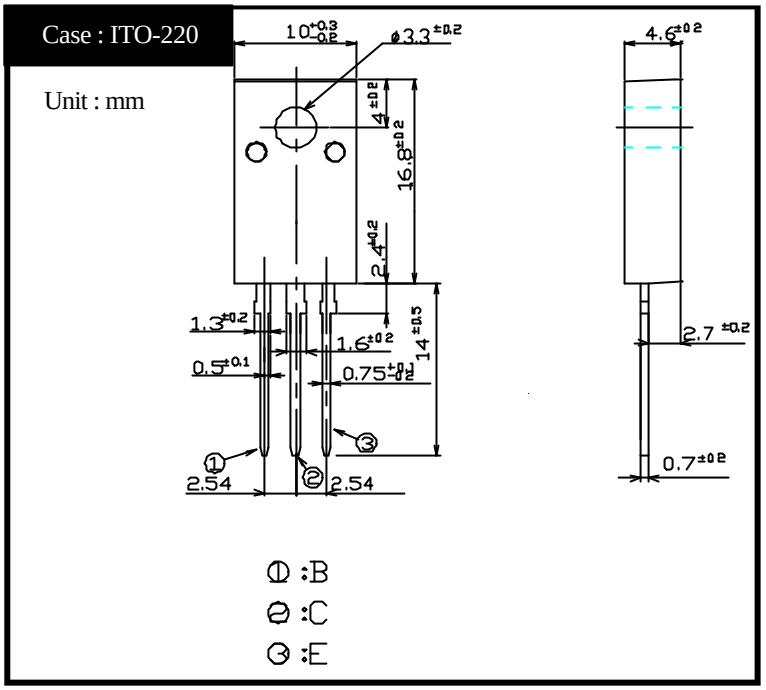
SHINDENGEN

Darlington Transistor

2SD1795
(TP10K40)

10A NPN

OUTLINE DIMENSIONS



RATINGS

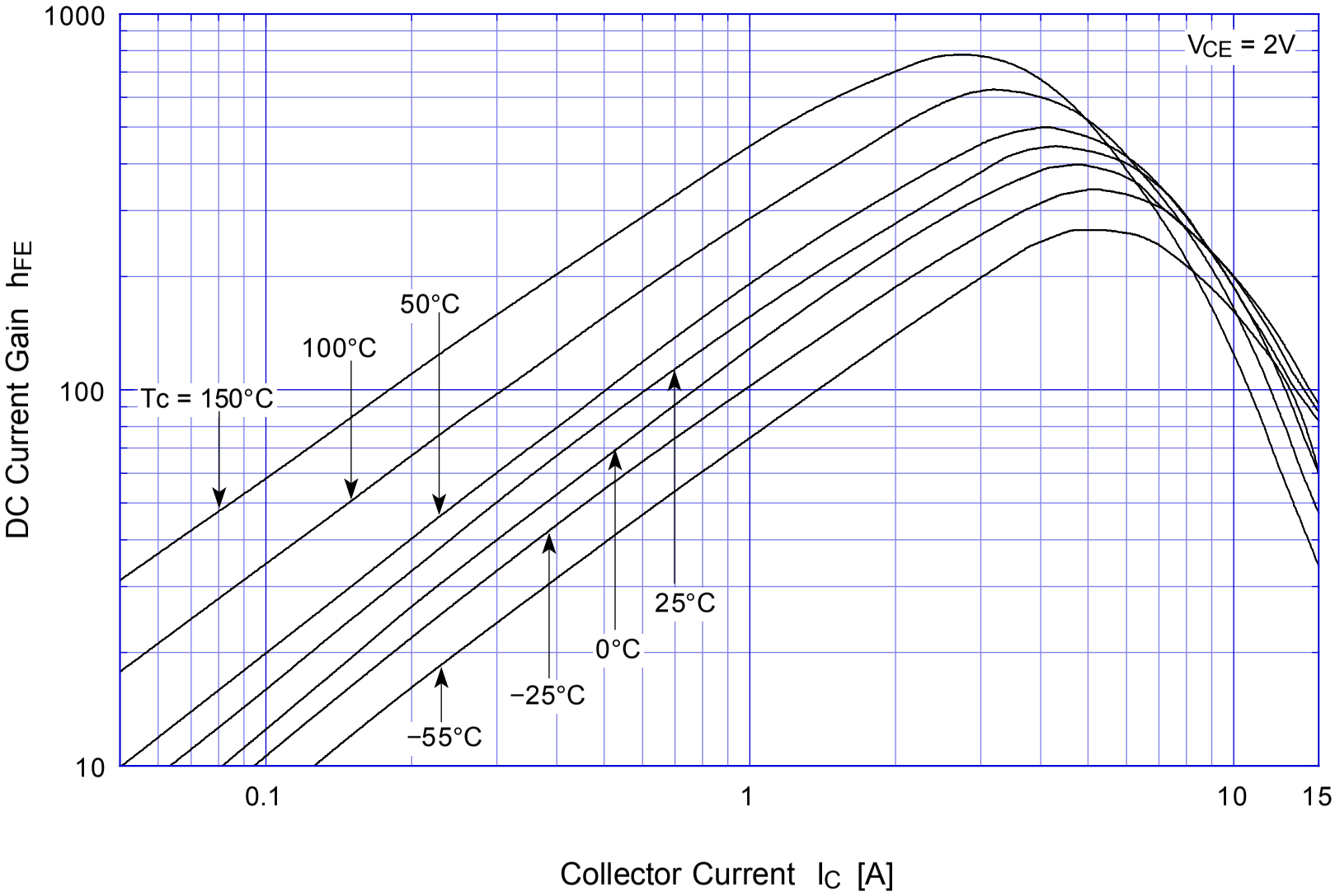
●Absolute Maximum Ratings

Item	Symbol	Conditions	Ratings	Unit
Storage Temperature	Tstg		-55～+150	℃
Junction Temperature	Tj		+150	℃
Collector to Base Voltage	V_{CBO}		500	V
Collector to Emitter Voltage	V_{CEO}		400	V
Emitter to Base Voltage	V_{EBO}		12	V
Collector Current DC	I_C		10	A
Collector Current Peak	I_{CP}		15	A
Base Current DC	I_B		0.5	A
Base Current Peak	I_{BP}		1.0	A
Total Transistor Dissipation	P_T	Tc = 25℃	50	W
Dielectric Strength	Vdis	Terminals to case AC 1 minute	2	kV
Mounting Torque	TOR	(Recommended torque : 0.3N･m)	0.5	N･m

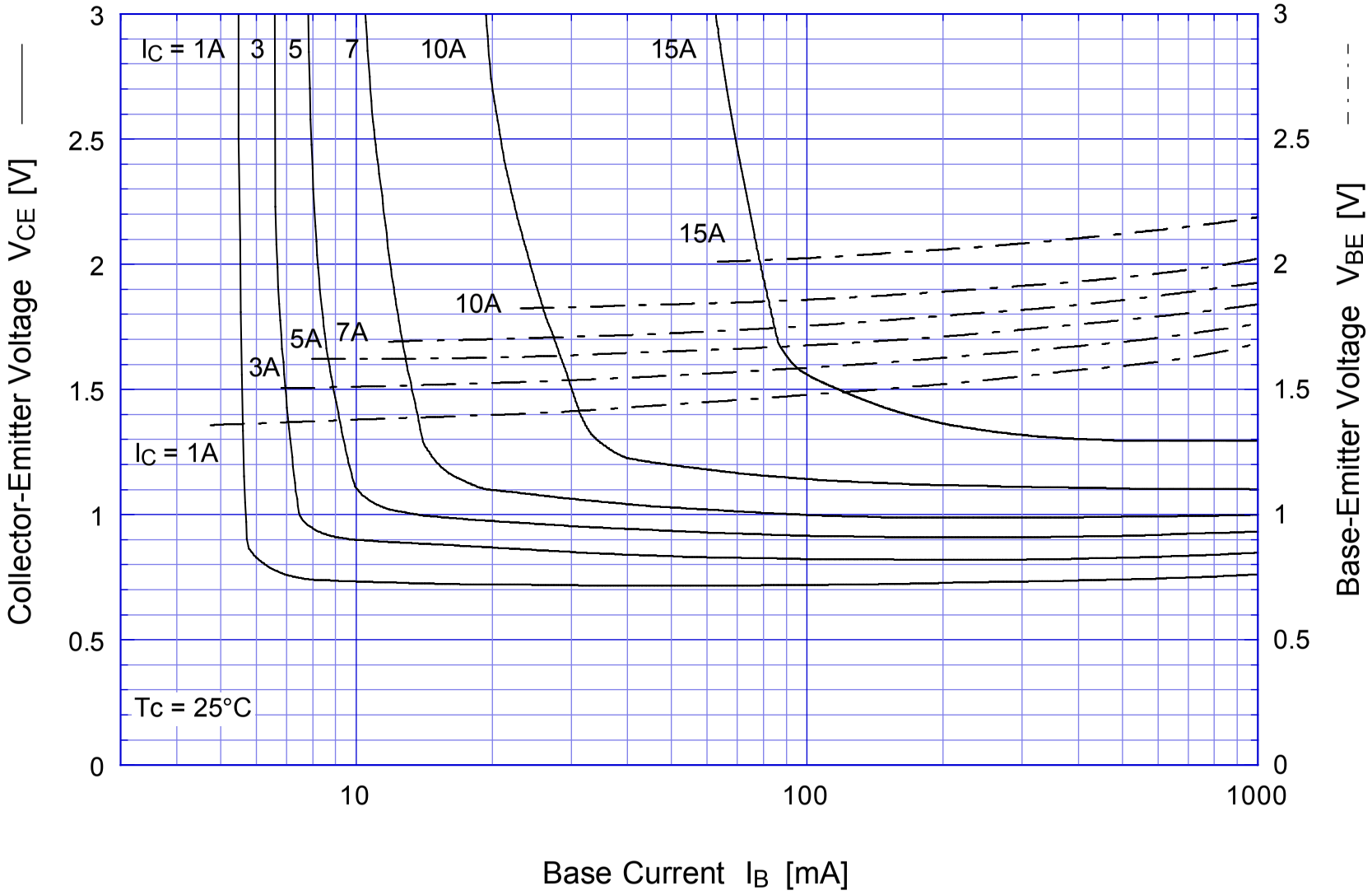
●Electrical Characteristics (Tc=25℃)

Item	Symbol	Conditions	Ratings	Unit
Collector to Emitter Sustaining Voltage	V_{CEO}	V_{CE} (Clamp)	Min 400	V
Collector Cutoff Current	I_{CBO}	V_{CB} = 500V	Max 0.1	mA
	I_{CEO}	V_{CE} = 400V	Max 0.1	
Emitter Cutoff Current	I_{EBO}	V_{EB} = 12V	Max 100	mA
DC Current Gain	h_{FE}	V_{CE} = 2V, I_C = 7A	Min 150	
Collector to Emitter Saturation Voltage	V_{CE}(sat)	I_C = 7A	Max 1.5	V
Base to Emitter Saturation Voltage	V_{BE}(sat)	I_B = 70mA	Max 2.0	V
Thermal Resistance	θ jc	Junction to case	Max 2.5	℃/W
Transition Frequency	f_T	V_{CE} = 10V, I_C = 1A	TYP 10	MHz
Turn on Time	ton	I_C = 7A I_{B1} = I_{B2} = 70mA R_L = 10Ω V_{BB2} = 4V	Max 2	μs
Storage Time	ts		Max 15	
Fall Time	tf		Max 15	

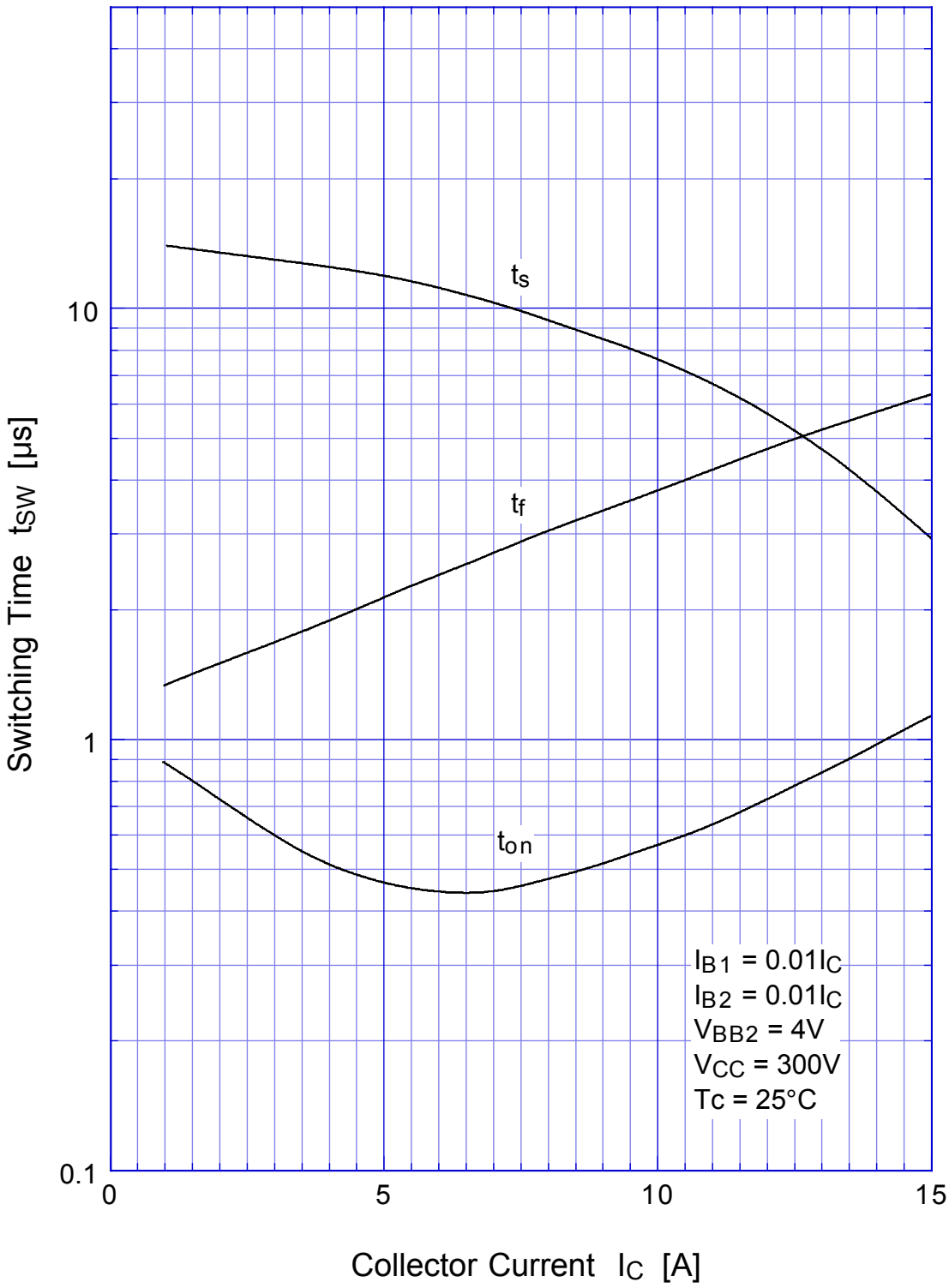
2SD1795 h_{FE} - I_C



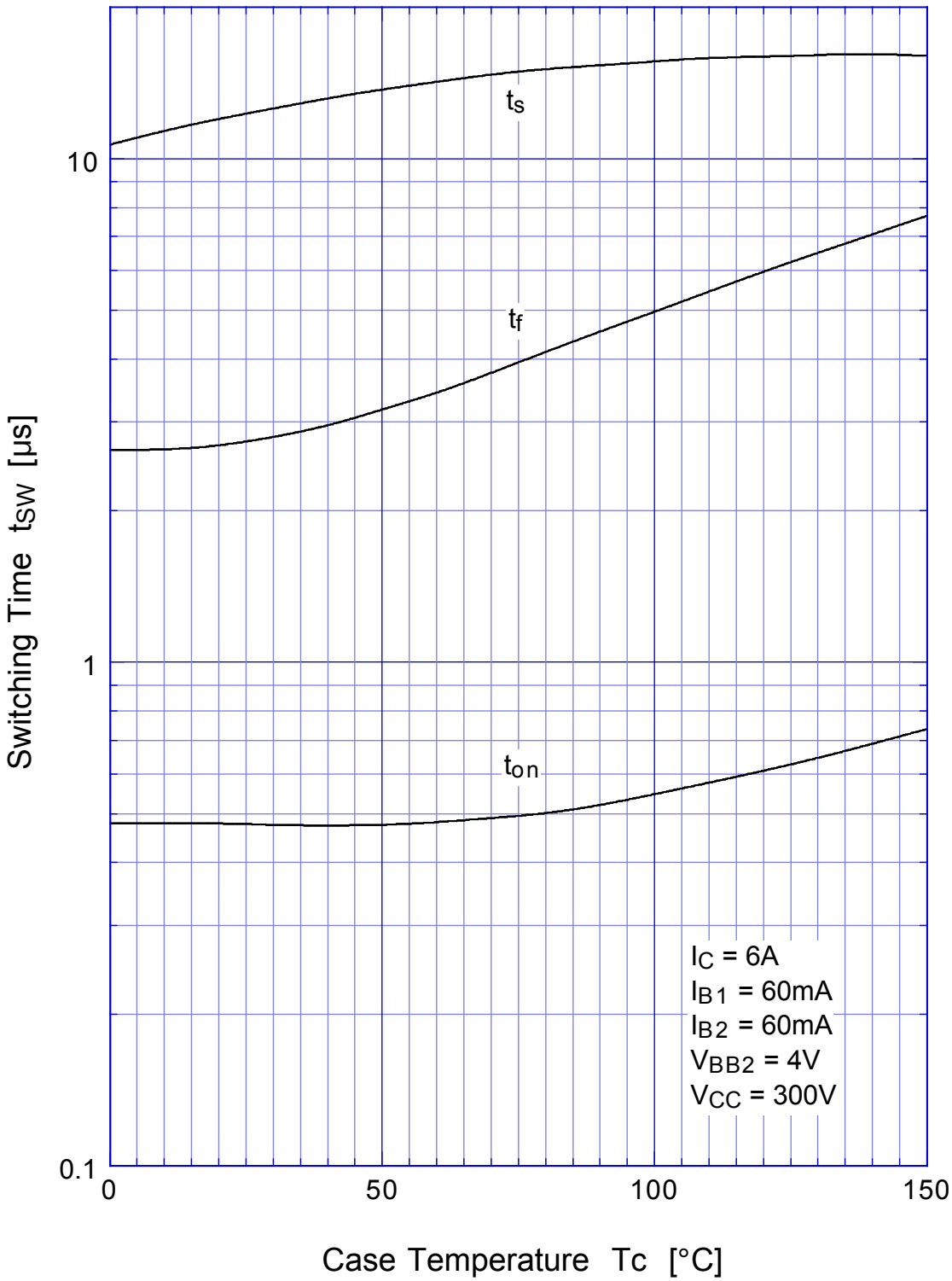
2SD1795 Saturation Voltage

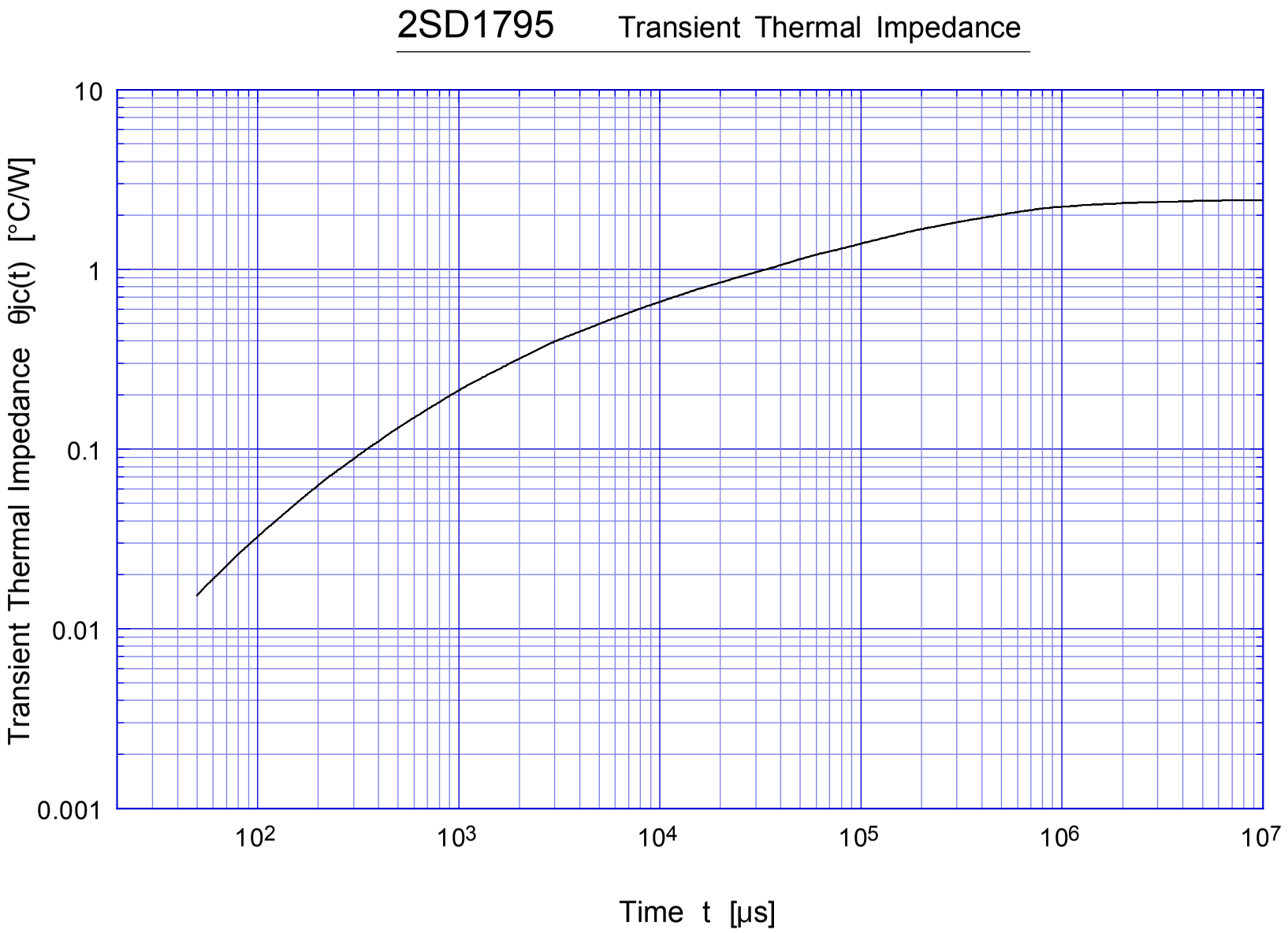


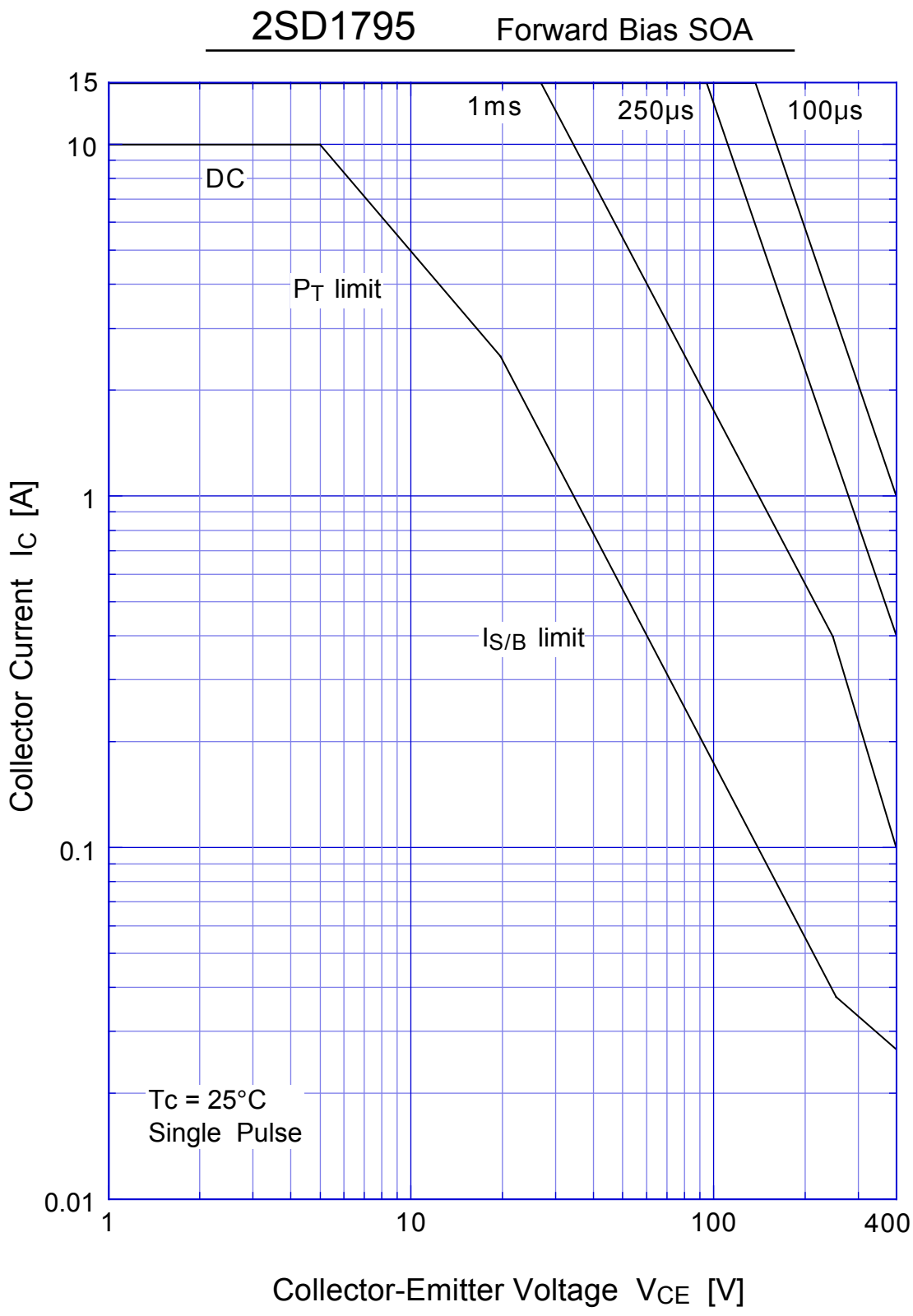
2SD1795 Switching Time - I_C

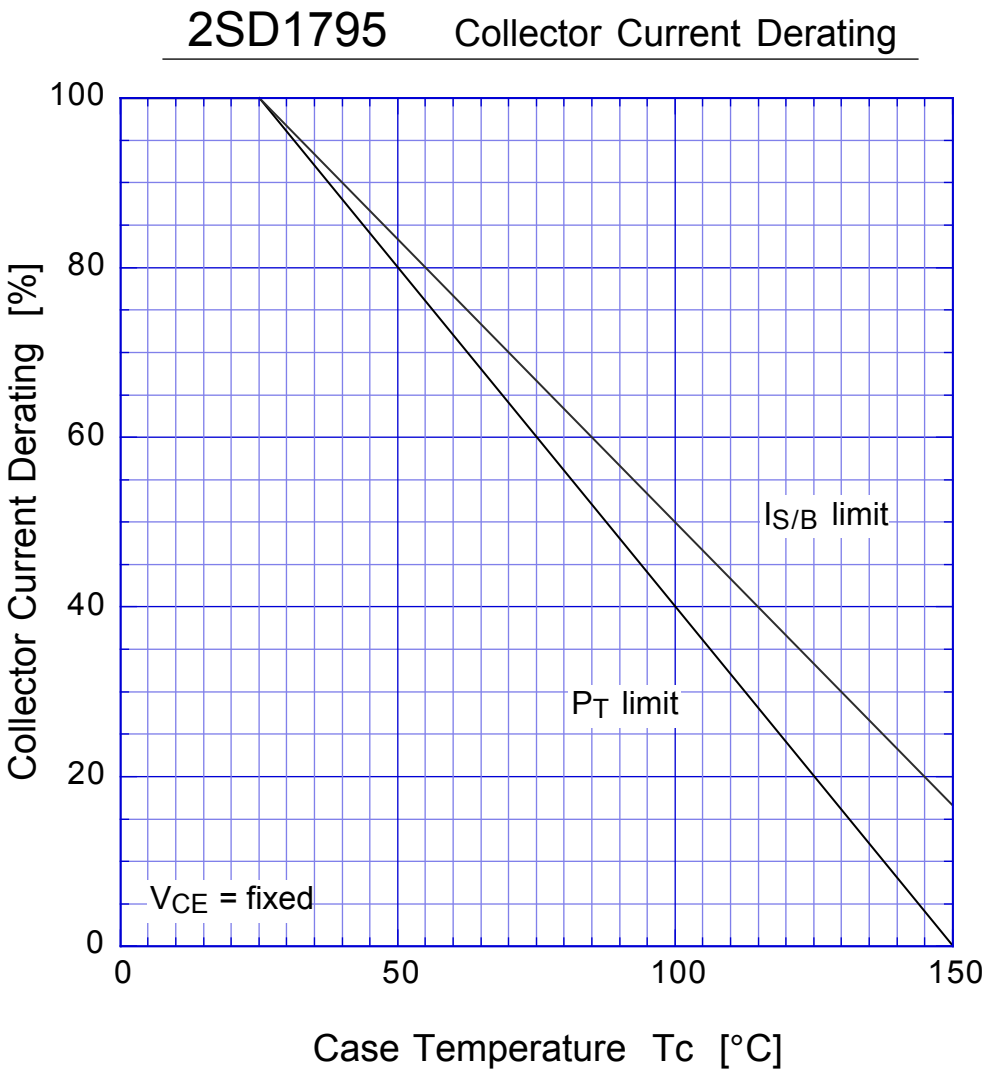


2SD1795 Switching Time - Tc




2SD1795
Transient Thermal Impedance
Transient Thermal Impedance θjc(t) [°C/W]
10
1
0.1
0.01
0.001
10²
10³
10⁴
10⁵
10⁶
10⁷
Time t [μs]


2SD1795
Forward Bias SOA
15
10
1
0.1
0.01
1
10
100
400
1ms
250µs
100µs
DC
PT limit
IS/B limit
Tc = 25°C
Single Pulse
Collector Current IC [A]
Collector-Emitter Voltage VCE [V]


2SD1795 Collector Current Derating
100
80
60
40
20
0
Collector Current Derating [%]
0
50
100
150
Case Temperature Tc [°C]
$I_{S/B}$ limit
P_T limit
V_{CE} = fixed

2SD1795 Reverse Bias SOA