SHINDENGEN

Switching Power Transistor

FS Series

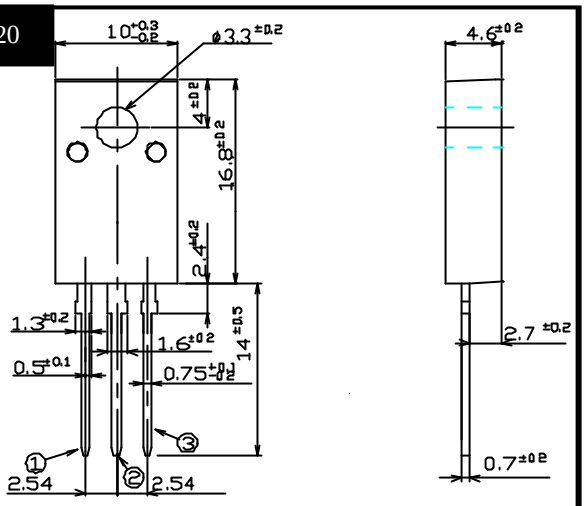
2SC4834
(TP8V40FS)

8A NPN

OUTLINE DIMENSIONS

Case : ITO-220

Unit : mm



RATINGS

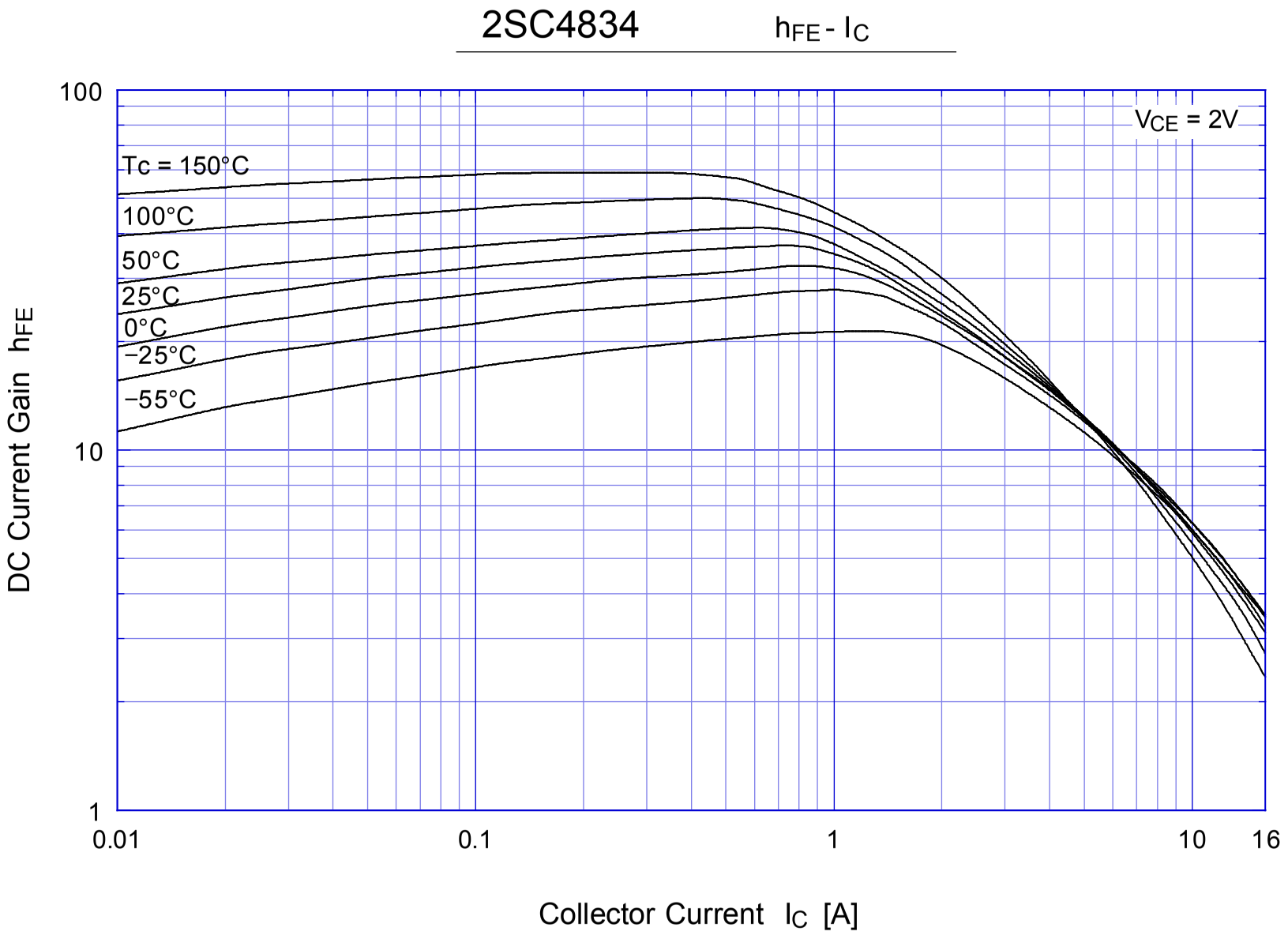
●Absolute Maximum Ratings

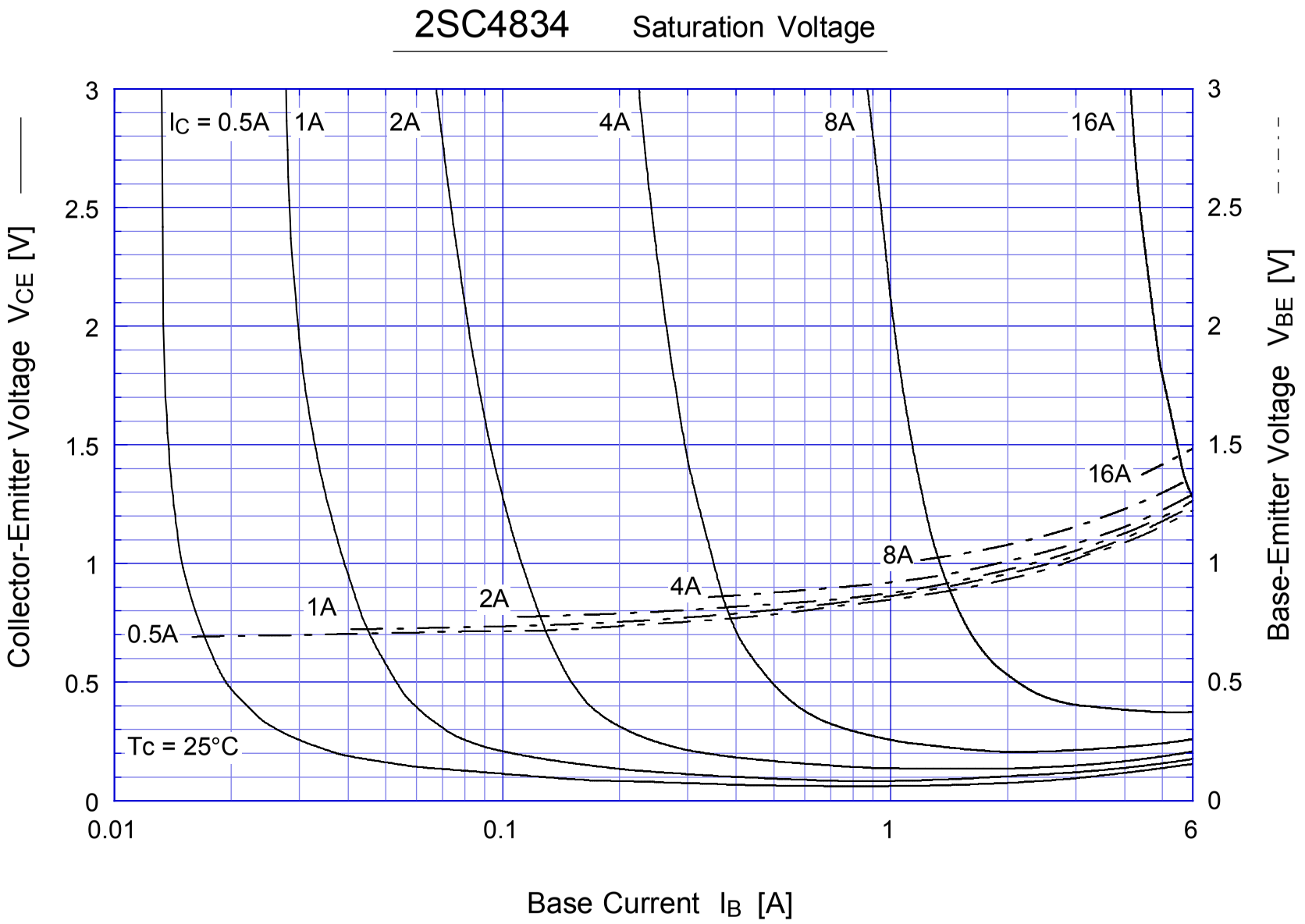
Item	Symbol	Conditions	Ratings	Unit
Storage Temperature	Tstg		-55～150	℃
Junction Temperature	Tj		150	℃
Collector to Base Voltage	V_{CBO}		500	V
Collector to Emitter Voltage	V_{CEO}		400	V
Emitter to Base Voltage	V_{EBO}		7	V
Collector Current DC	I_C		8	A
Collector Current Peak	I_{CP}		16	
Base Current DC	I_B		3	A
Base Current Peak	I_{BP}		6	
Total Transistor Dissipation	P_T	Tc = 25℃	45	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℃)

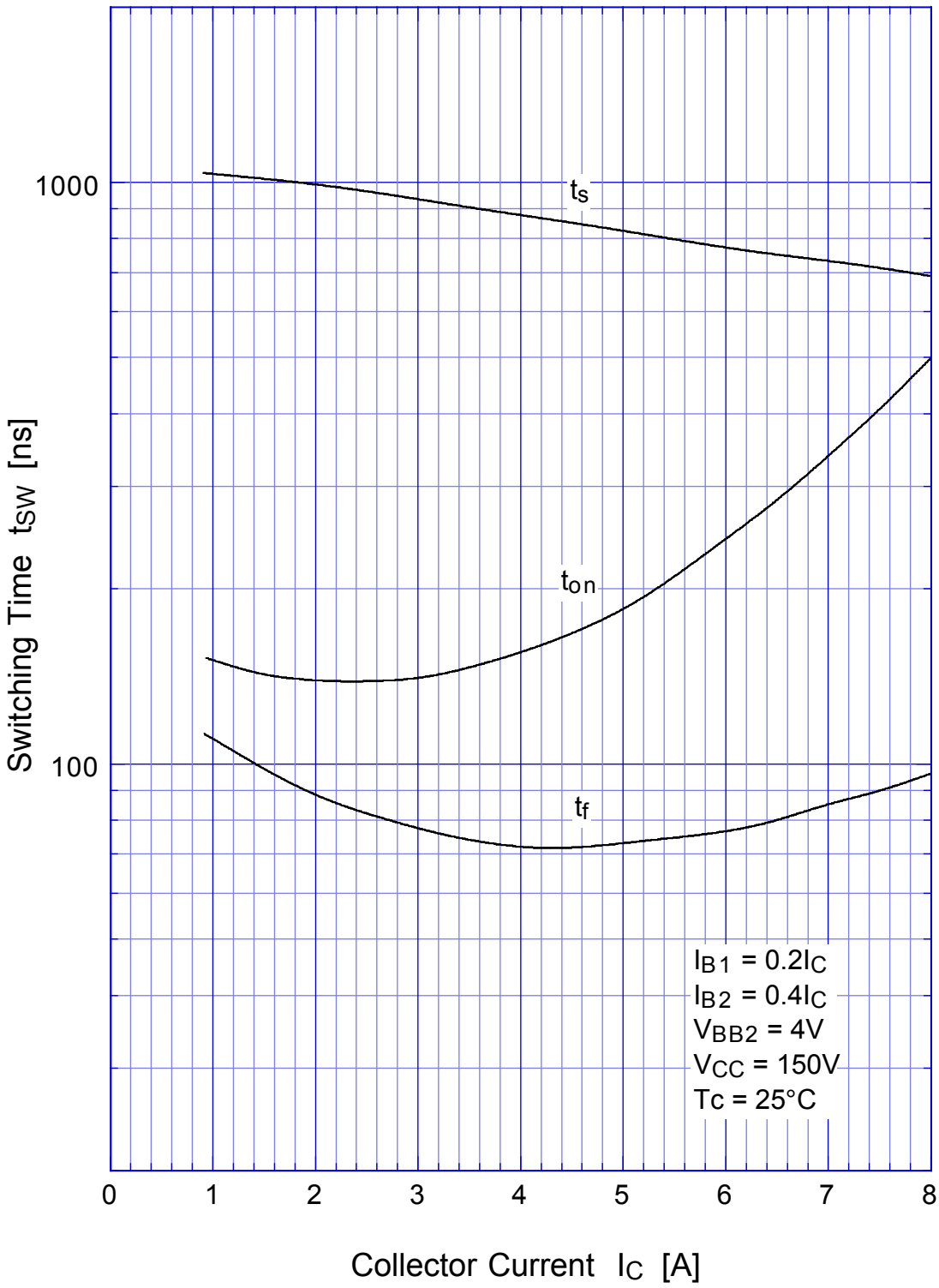
Item	Symbol	Conditions	Ratings	Unit
Collector to Emitter Sustaining Voltage	V_{CEO}(sus)	I_C = 0.1A	Min 400	V
Collector Cutoff Current	I_{CBO}	At rated Voltage	Max 0.1	mA
	I_{CEO}		Max 0.1	
Emitter Cutoff Current	I_{EBO}	At rated Voltage	Max 0.1	mA
DC Current Gain	h_{FE}	V_{CE} = 2V, I_C = 4A	10～25	
	h_{FEL}	V_{CE} = 2V, I_C = 1mA	Min 10	
Collector to Emitter Saturation Voltage	V_{CE}(sat)	I_C = 4A	Max 1.0	V
Base to Emitter Saturation Voltage	V_{BE}(sat)	I_B = 0.8A	Max 1.5	V
Thermal Resistance	θ jc	Junction to case	Max 2.78	℃/W
Transition Frequency	f_T	V_{CE} = 10V, I_C = 0.8A	TYP 13	MHz
Turn on Time	ton	I_C = 4A	Max 0.3	μs
Storage Time	ts	I_{B1} = 0.8A, I_{B2} = 1.6A	Max 1.3	
Fall Time	tf	R_L = 37.5Ω, V_{BB2} = 4V	Max 0.1	

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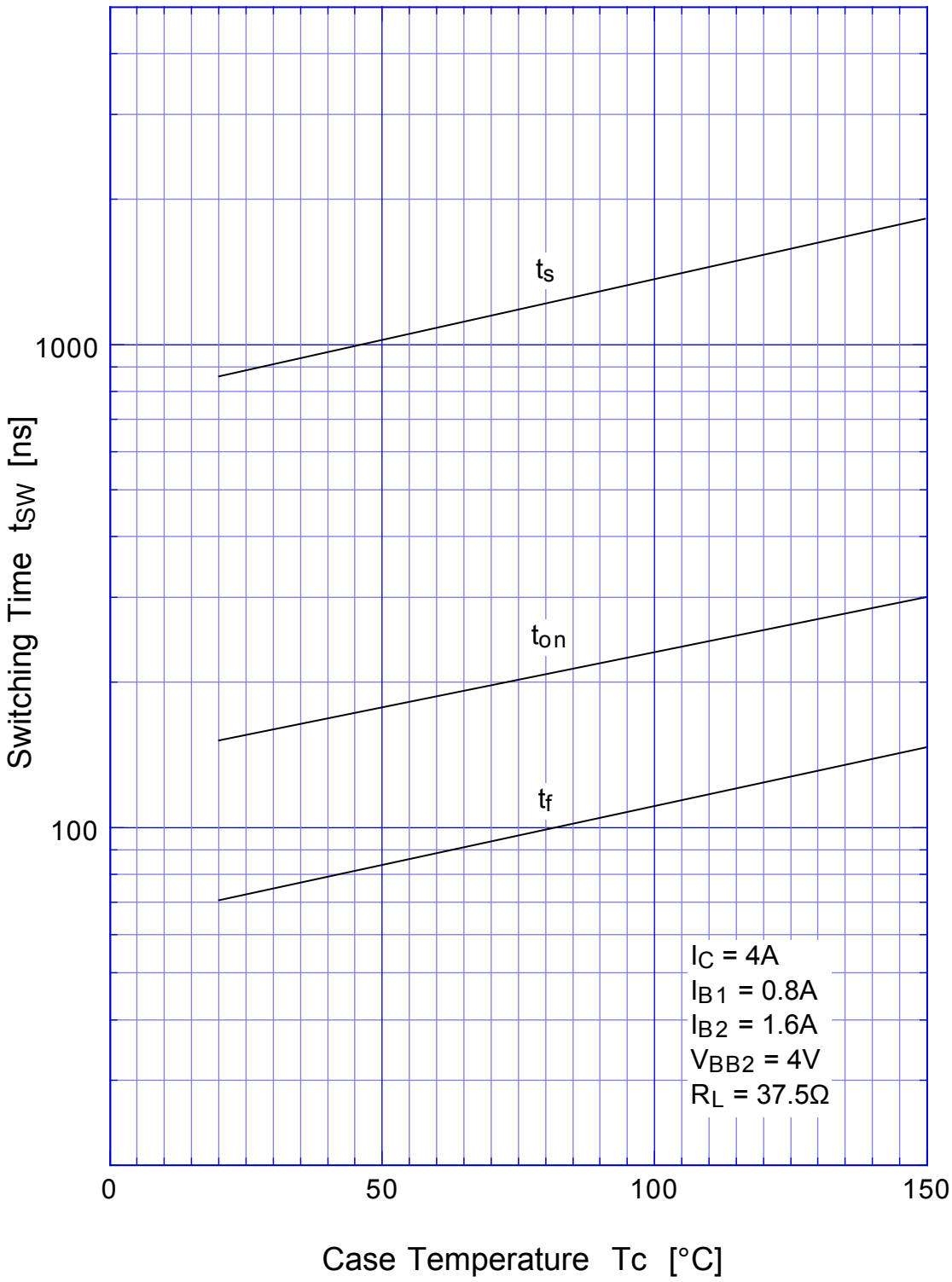

2SC4834
hFE - IC
VCE = 2V
Tc = 150°C
100°C
50°C
25°C
0°C
−25°C
−55°C
100
10
1
0.01
0.1
1
10
16
DC Current Gain hFE
Collector Current IC [A]

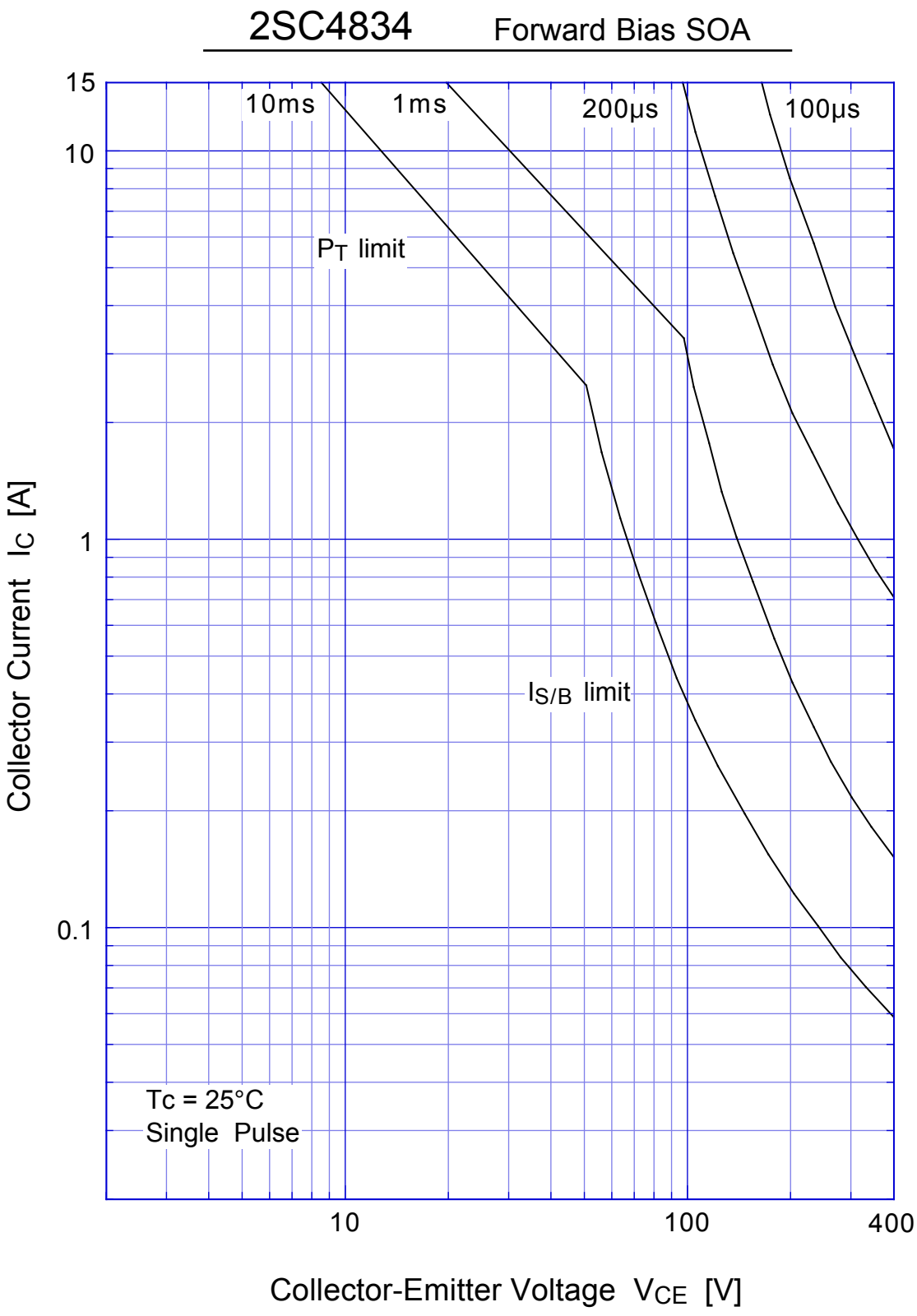

2SC4834 Saturation Voltage
Collector-Emitter Voltage V_{CE} [V]
Base-Emitter Voltage V_{BE} [V]
Base Current I_B [A]
I_C = 0.5A
1A
2A
4A
8A
16A
0.5A
Tc = 25°C
0
0.5
1
1.5
2
2.5
3
0.01
0.1
1
6

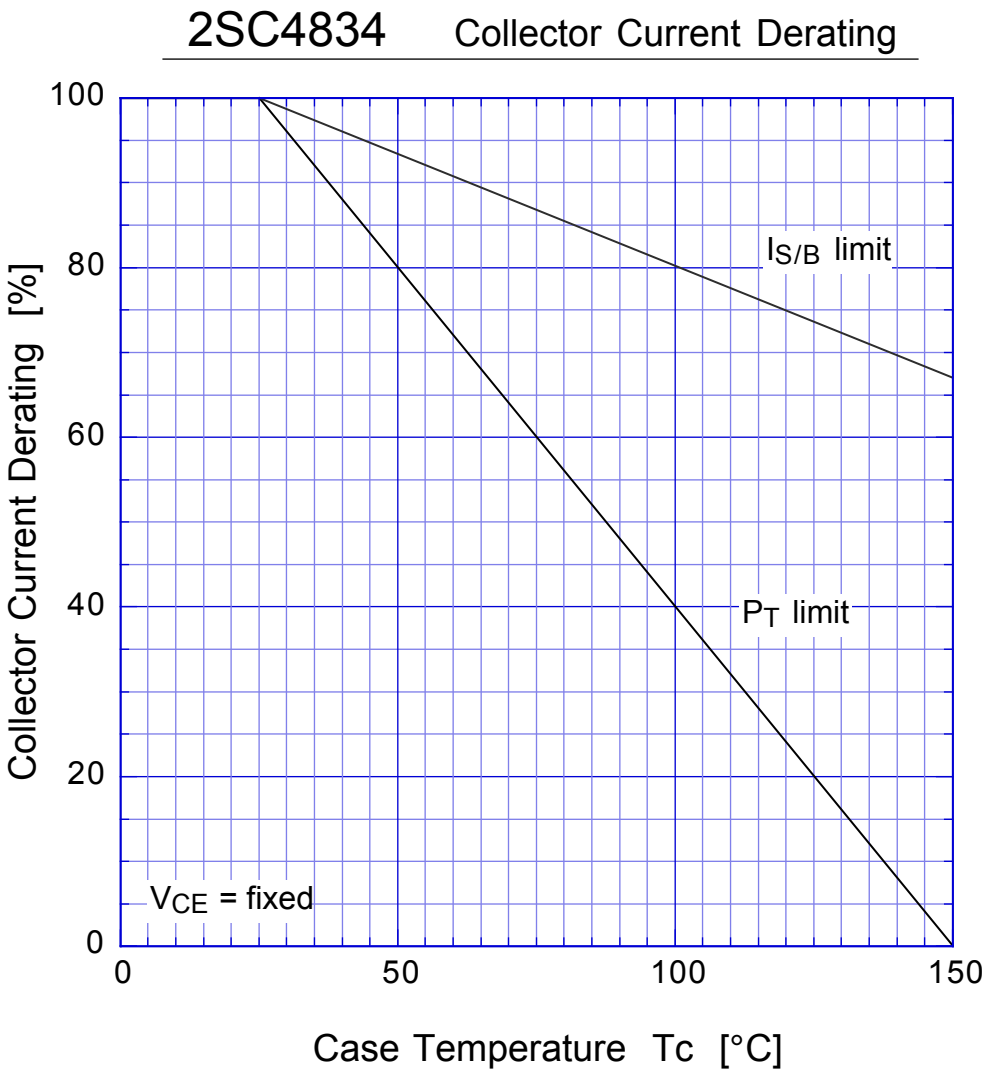
2SC4834 Switching Time - I_C



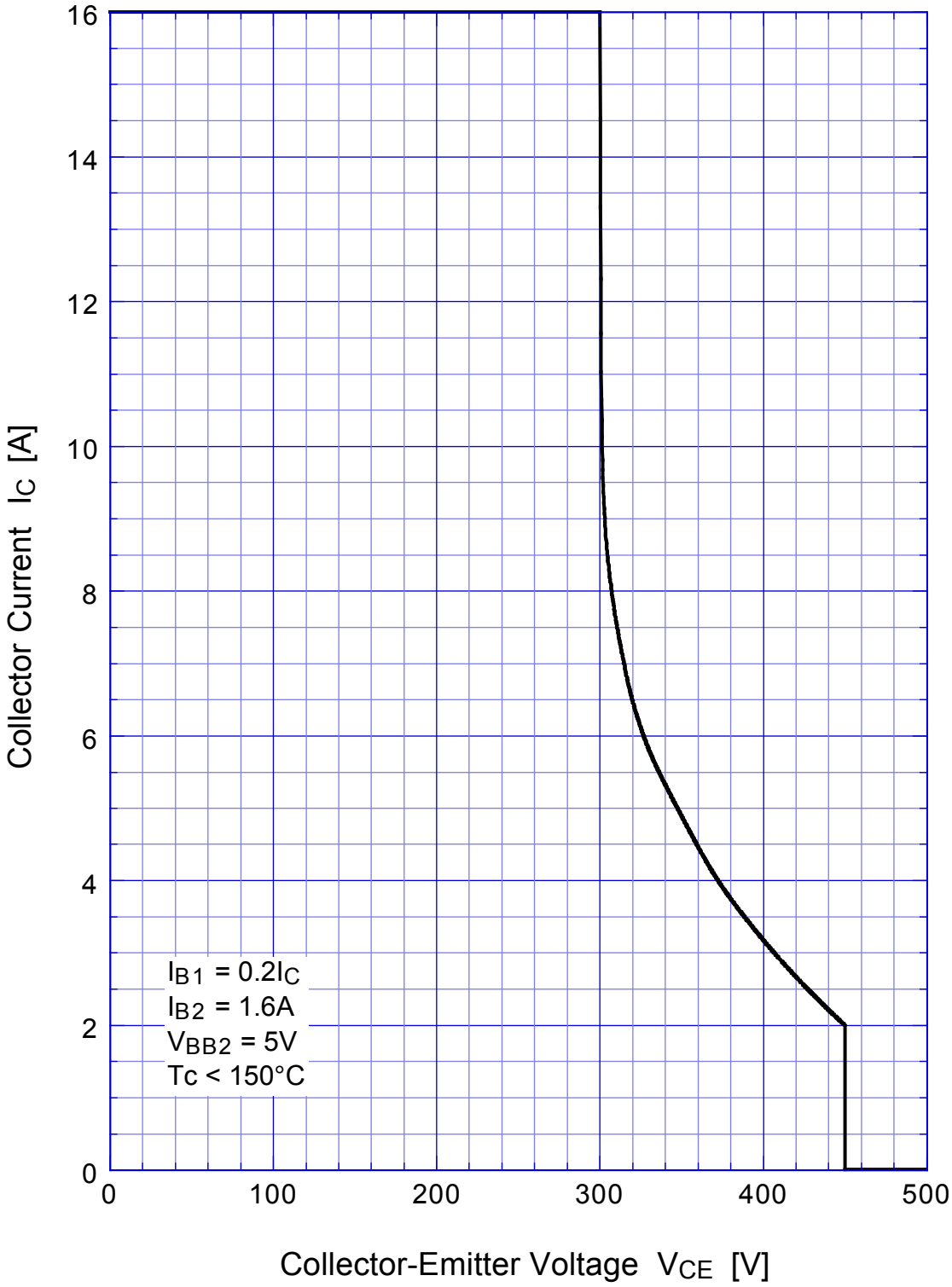
2SC4834 Switching Time - Tc

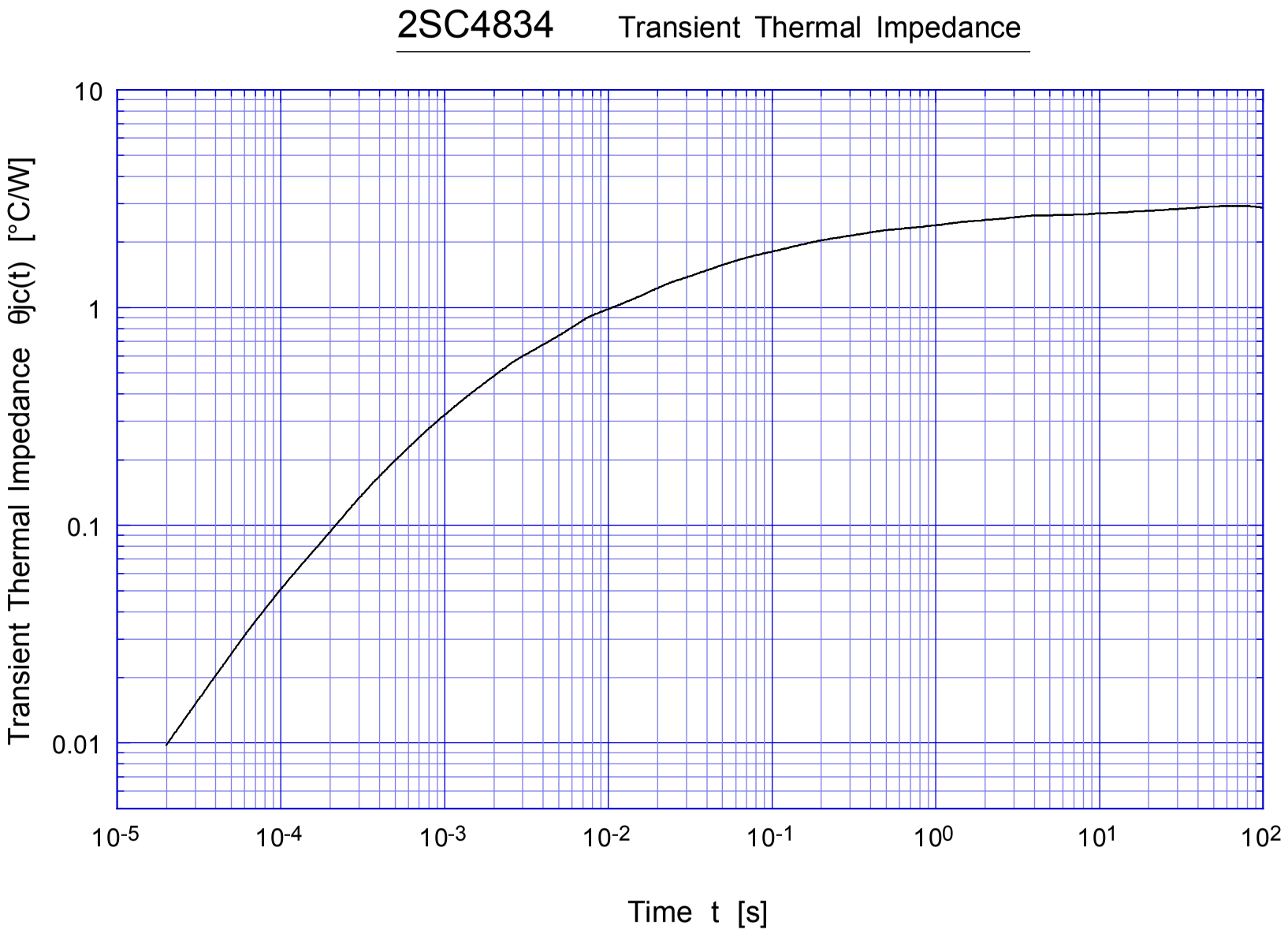



2SC4834
Forward Bias SOA
15
10
1
0.1
10ms
1ms
200µs
100µs
PT limit
IS/B limit
Tc = 25°C
Single Pulse
10
100
400
Collector Current IC [A]
Collector-Emitter Voltage VCE [V]


2SC4834 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

2SC4834 Reverse Bias SOA




2SC4834
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]