SHINDENGEN

Switching Power Transistor

FX Series

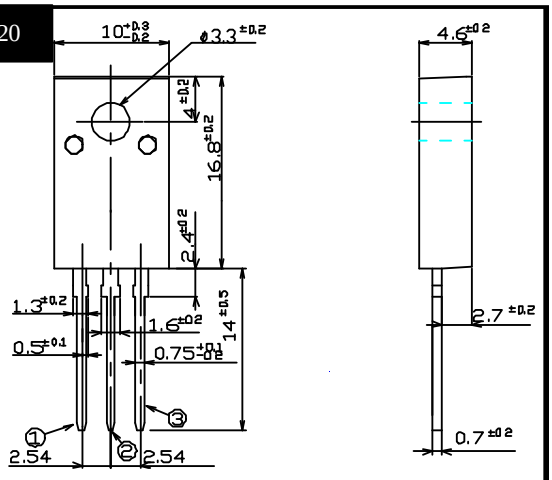
2SC4052
(TP3V45FX)

3A NPN

OUTLINE DIMENSIONS

Case : ITO-220

Unit : mm



① :B
② :C
③ :E

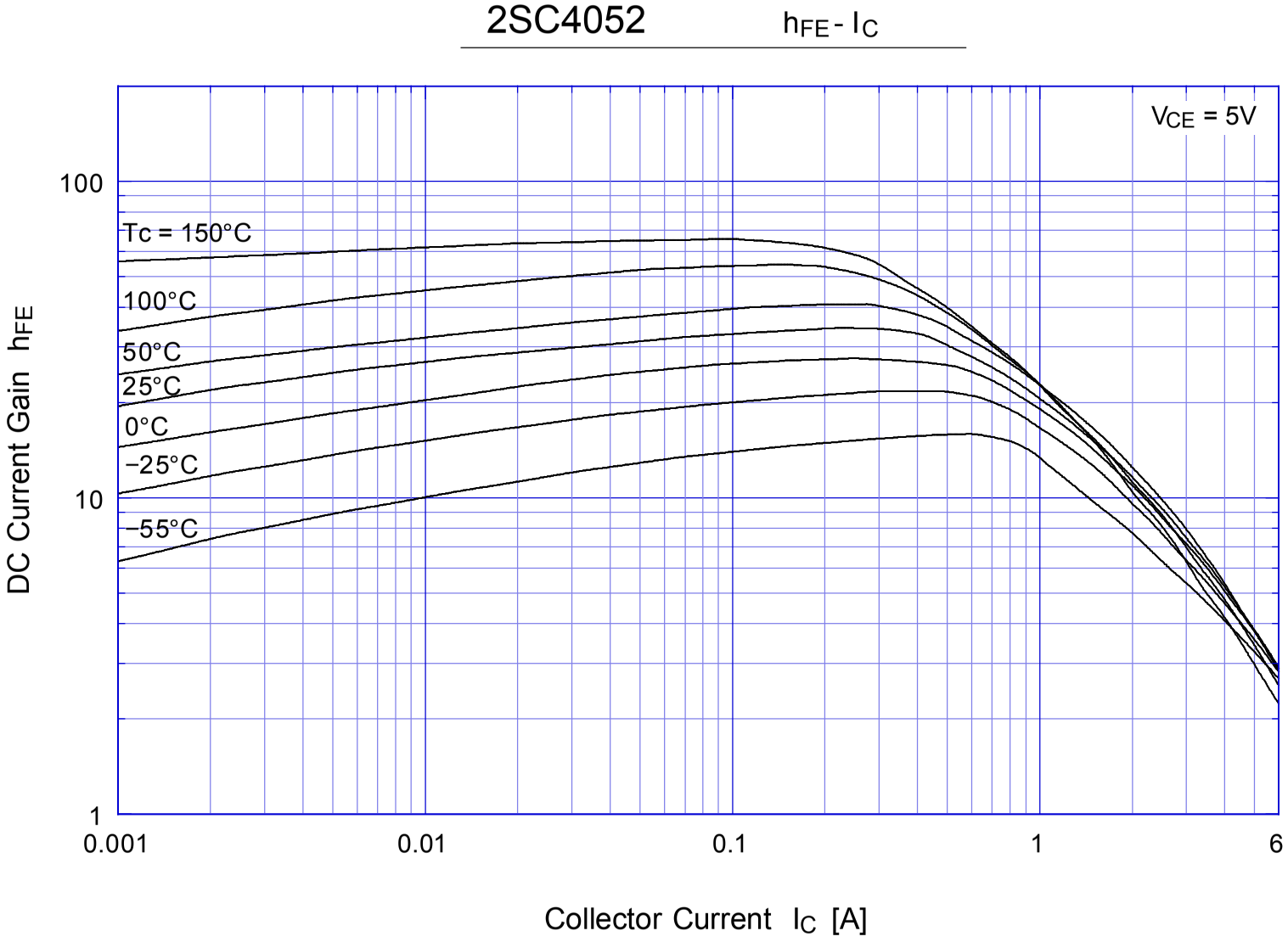
RATINGS

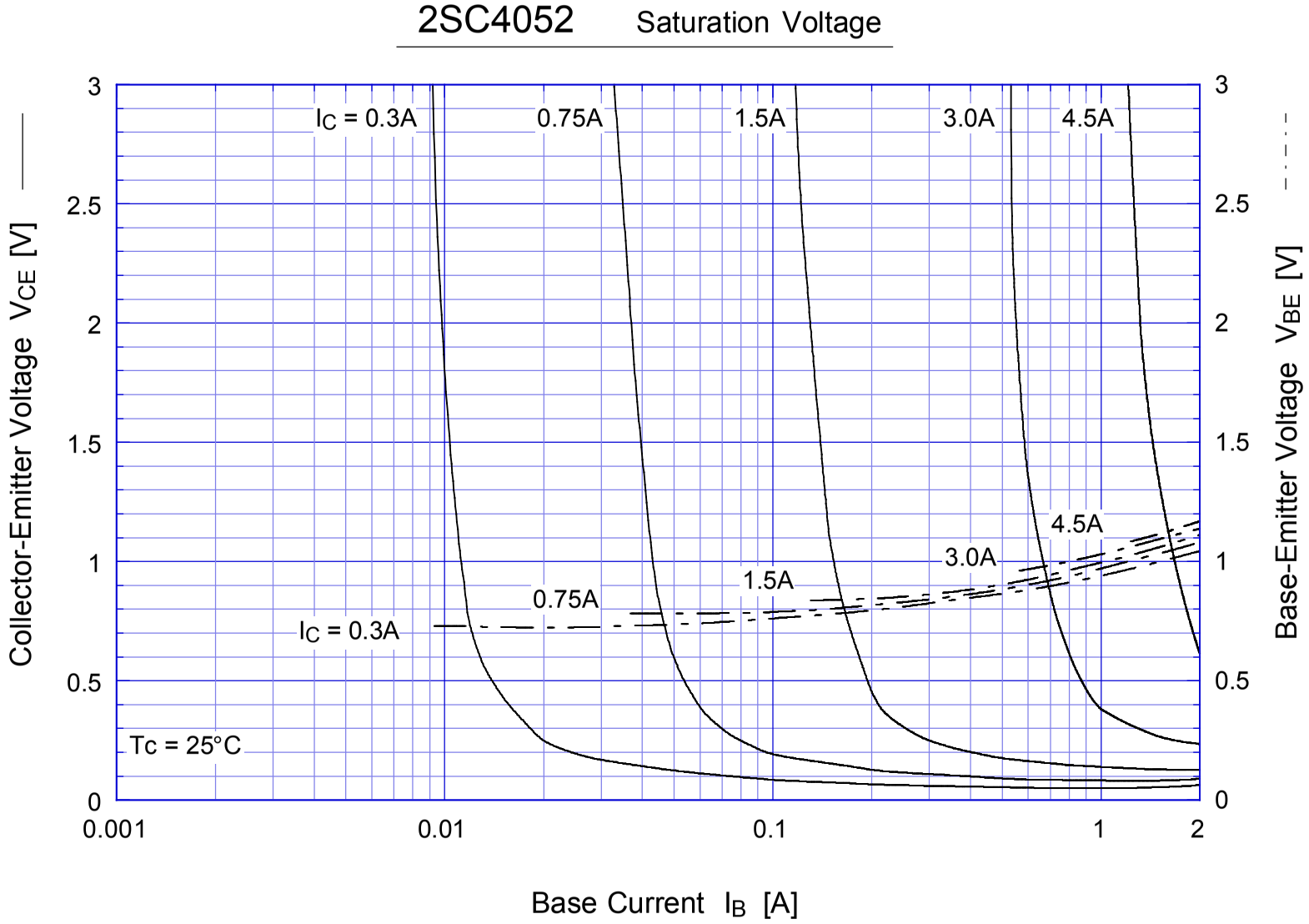
●Absolute Maximum Ratings

Item	Symbol	Conditions	Ratings	Unit
Storage Temperature	Tstg		-55～150	℃
Junction Temperature	Tj		150	℃
Collector to Base Voltage	V_{CBO}		600	V
Collector to Emitter Voltage	V_{CEO}		450	V
	V_{CEX}	V_{EB} = 5V	600	
Emitter to Base Voltage	V_{EBO}		7	V
Collector Current DC	I_C		3	A
Collector Current Peak	I_{CP}		6	
Base Current DC	I_B		1	A
Base Current Peak	I_{BP}		2	
Total Transistor Dissipation	P_T	T_C = 25℃	25	W
Dielectric Strength	Vdis	Terminals to case, AC 1 minute	2	kV
Mounting Torque	TOR		0.5	N·m

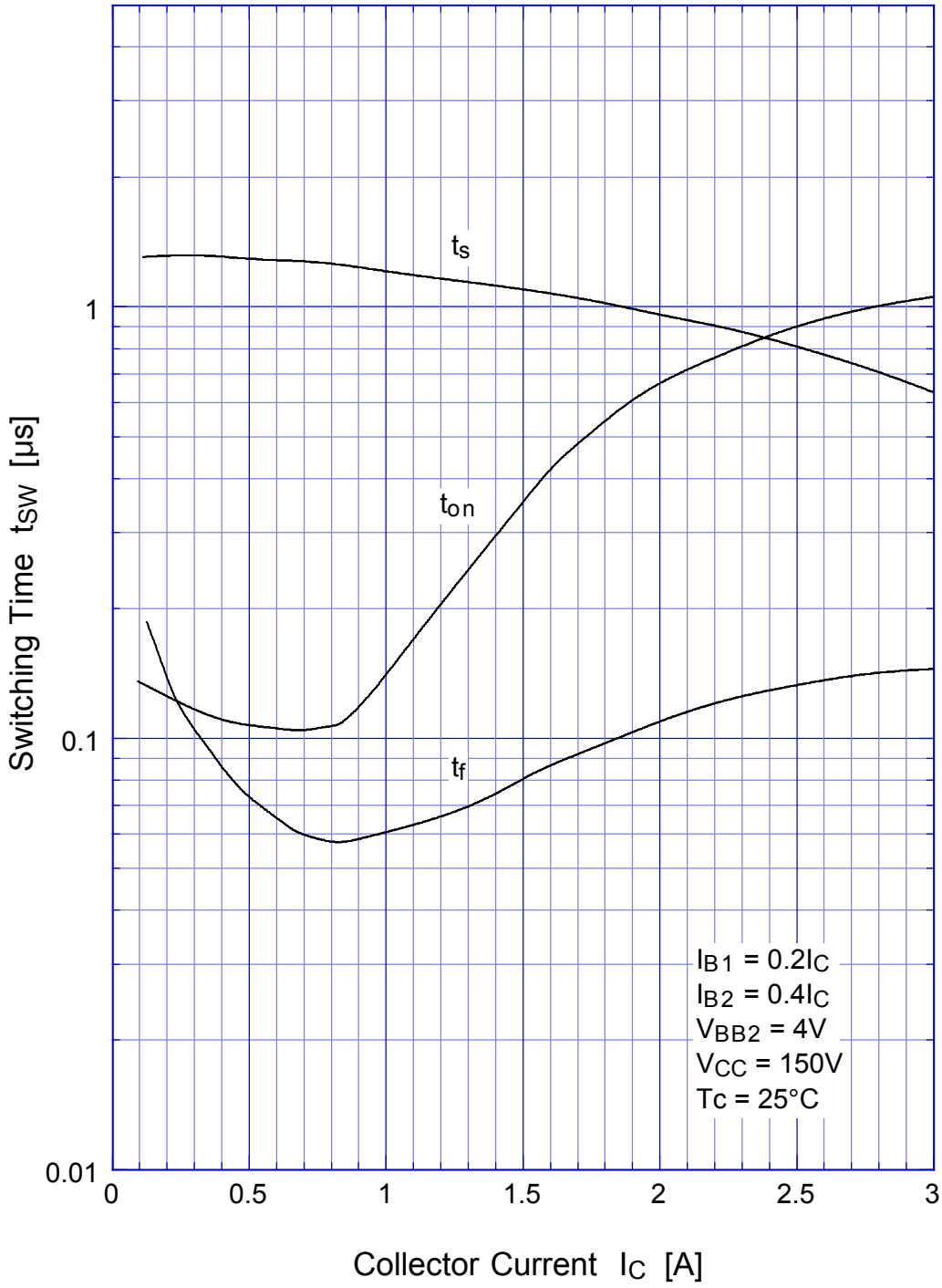
●Electrical Characteristics (Tc=25℃)

Item	Symbol	Conditions	Ratings	Unit
Collector to Emitter Sustaining Voltage	V_{CEO}(sus)	I_C = 0.1A	Min 450	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} = 5V, I_C = 1.5A	Min 10	
	h_{FEL}	V_{CE} = 5V, I_C = 1mA	Min 5	
Collector to Emitter Saturation Voltage	V_{CE}(sat)	I_C = 1.5A	Max 1.0	V
Base to Emitter Saturation Voltage	V_{BE}(sat)	I_B = 0.3A	Max 1.5	V
Thermal Resistance	θ jc	Junction to case	Max 5.0	℃/W
Transition Frequency	f_T	V_{CE} = 10V, I_C = 0.3A	STD 20	MHz
Turn on Time	ton	I_C = 1.5A	Max 0.5	μ s
Storage Time	ts	I_{B1} = 0.3A, I_{B2} = 0.6A	Max 2.0	
Fall Time	tf	R_L = 100Ω, V_{BB2} = 4V	Max 0.2	

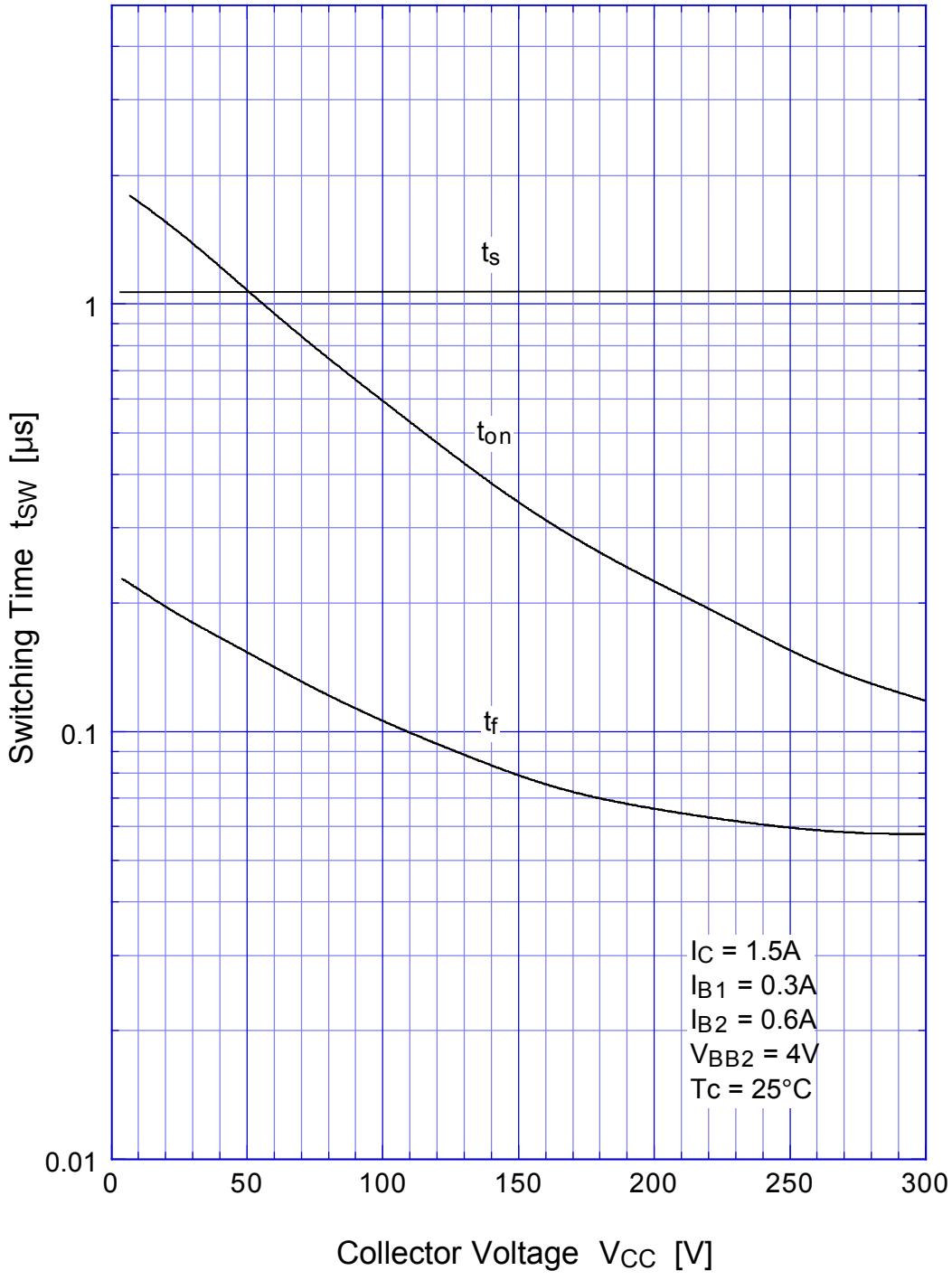




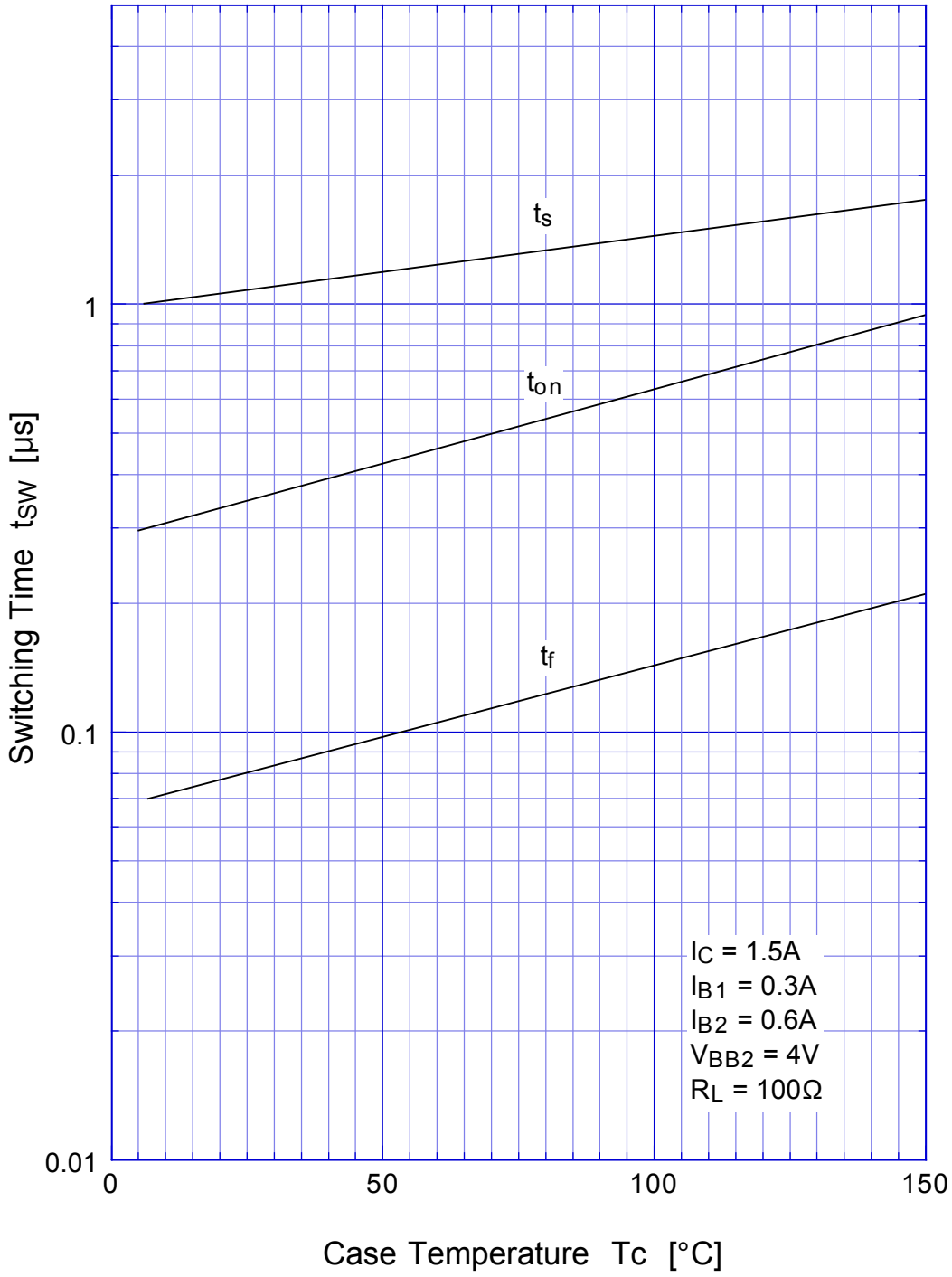
2SC4052 Switching Time - I_C



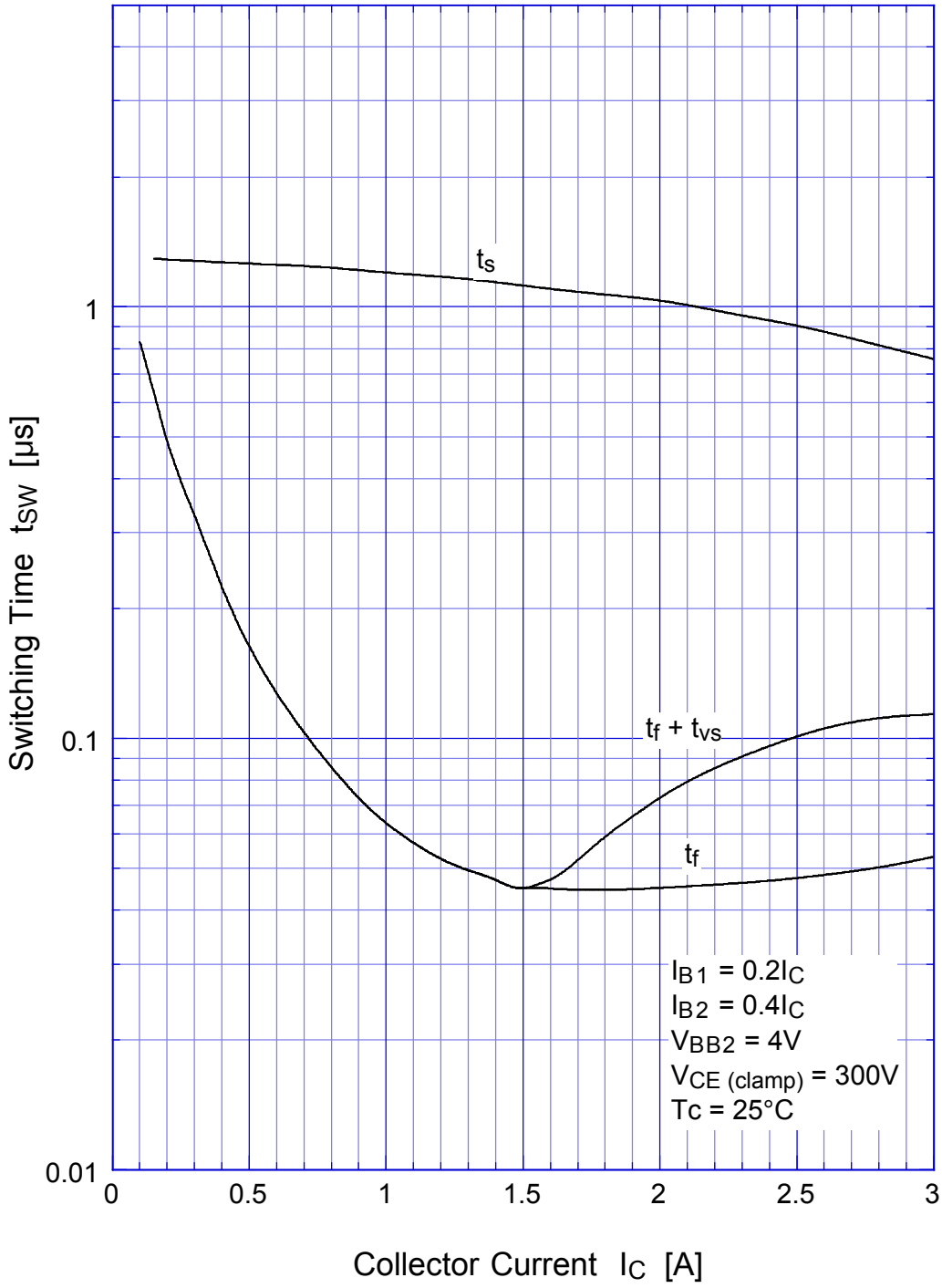
2SC4052 Switching Time - V_{CC}



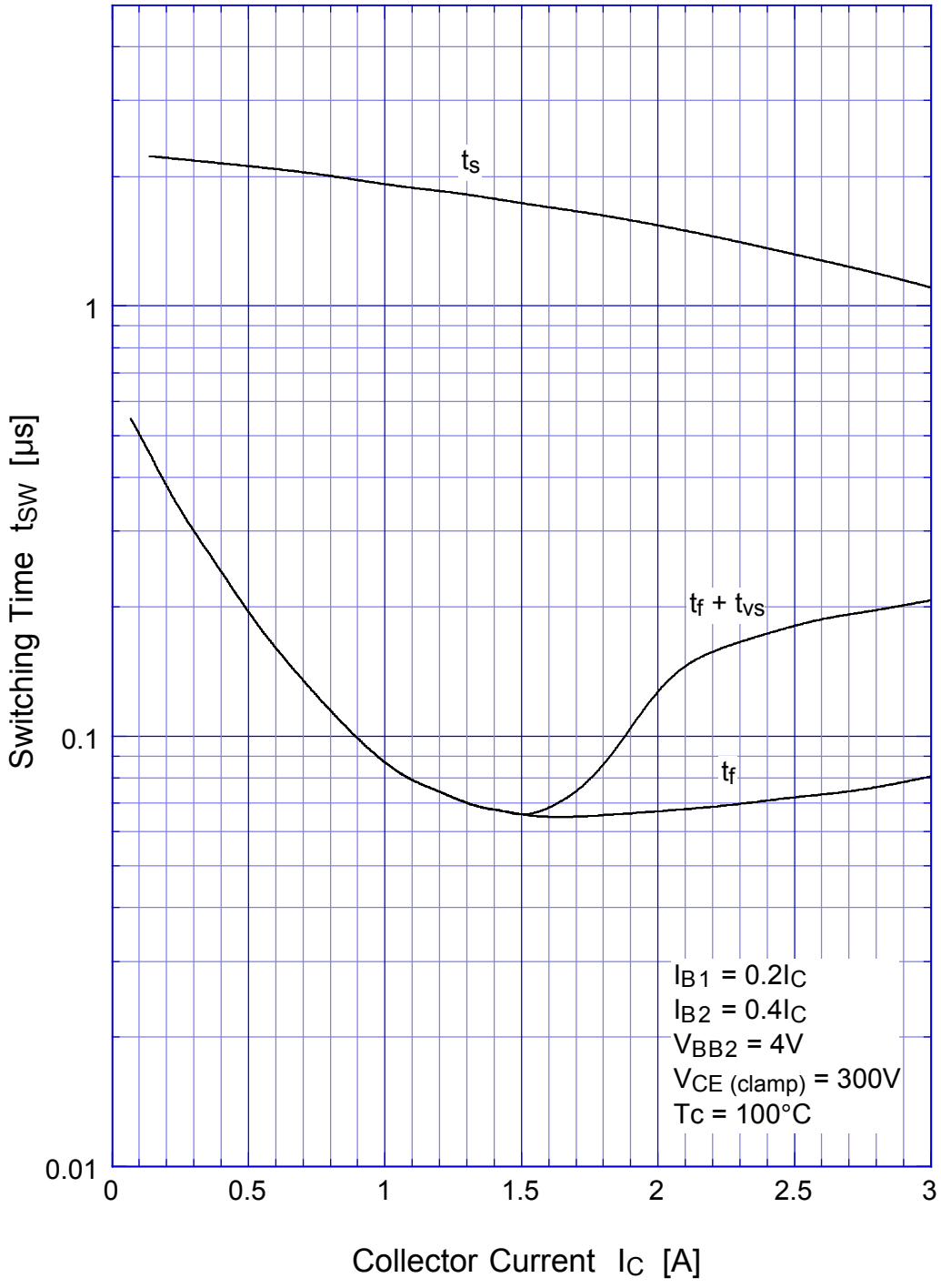
2SC4052 Switching Time - Tc

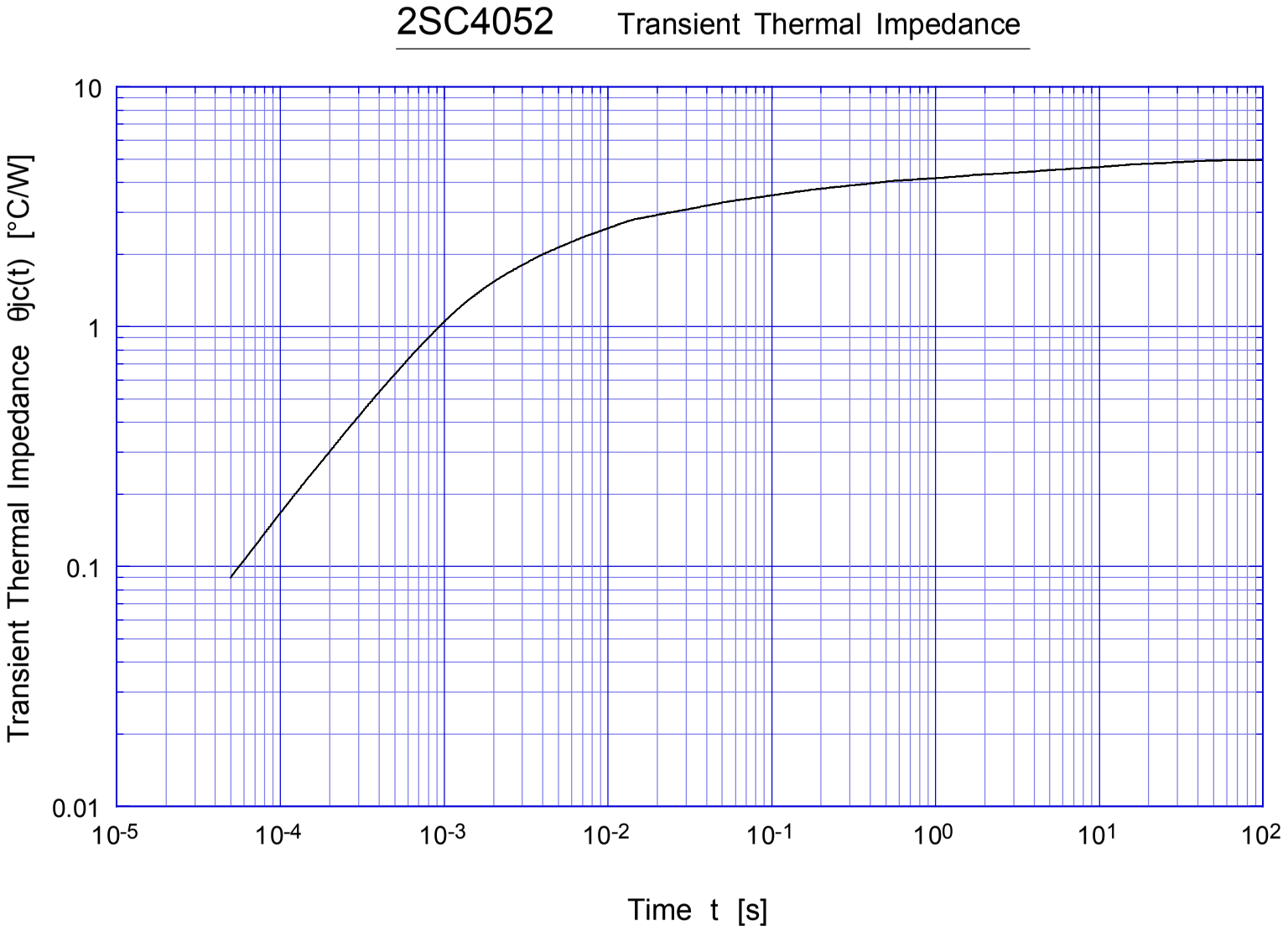


2SC4052 L-Load Switching Time - I_C

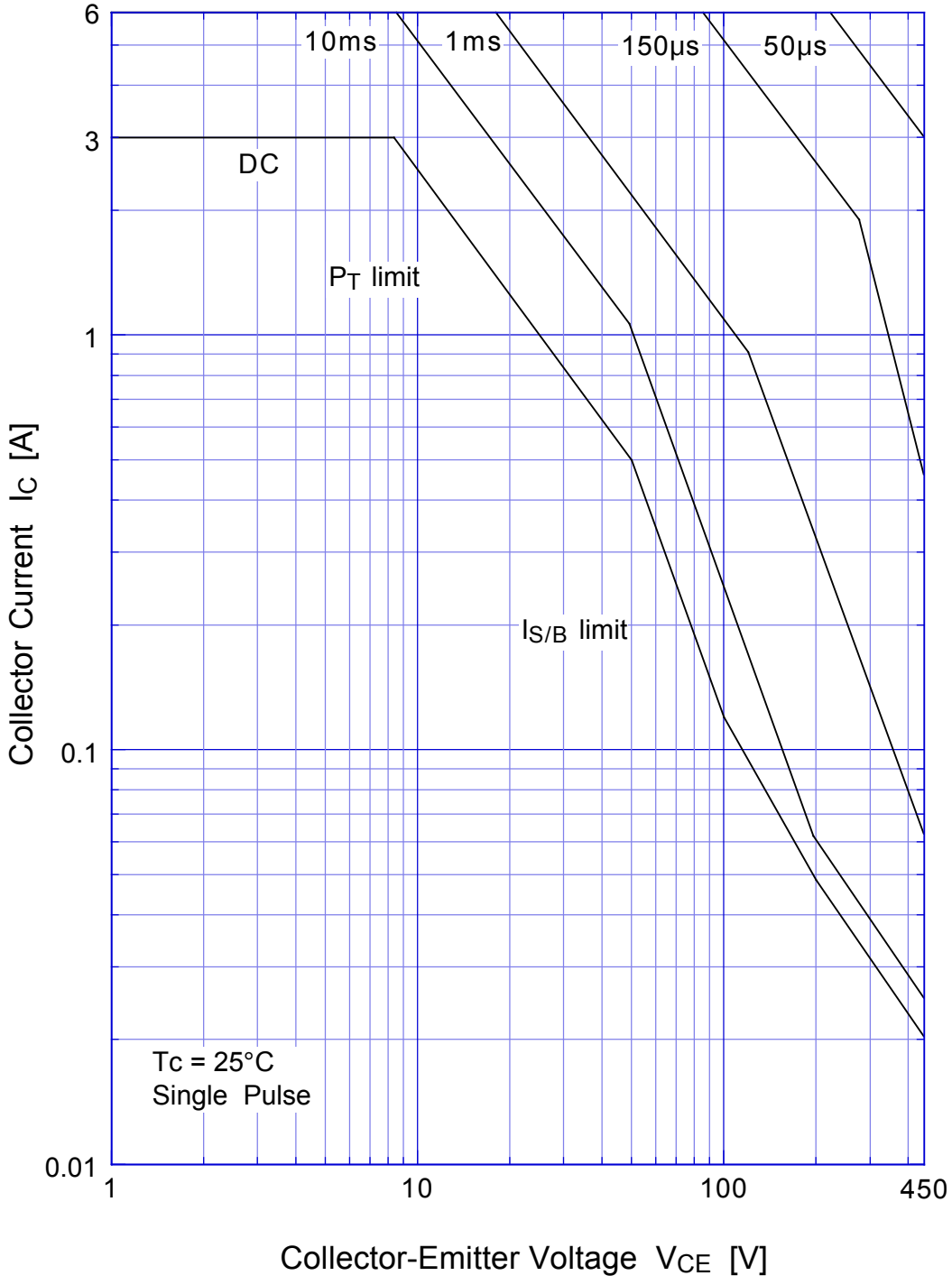


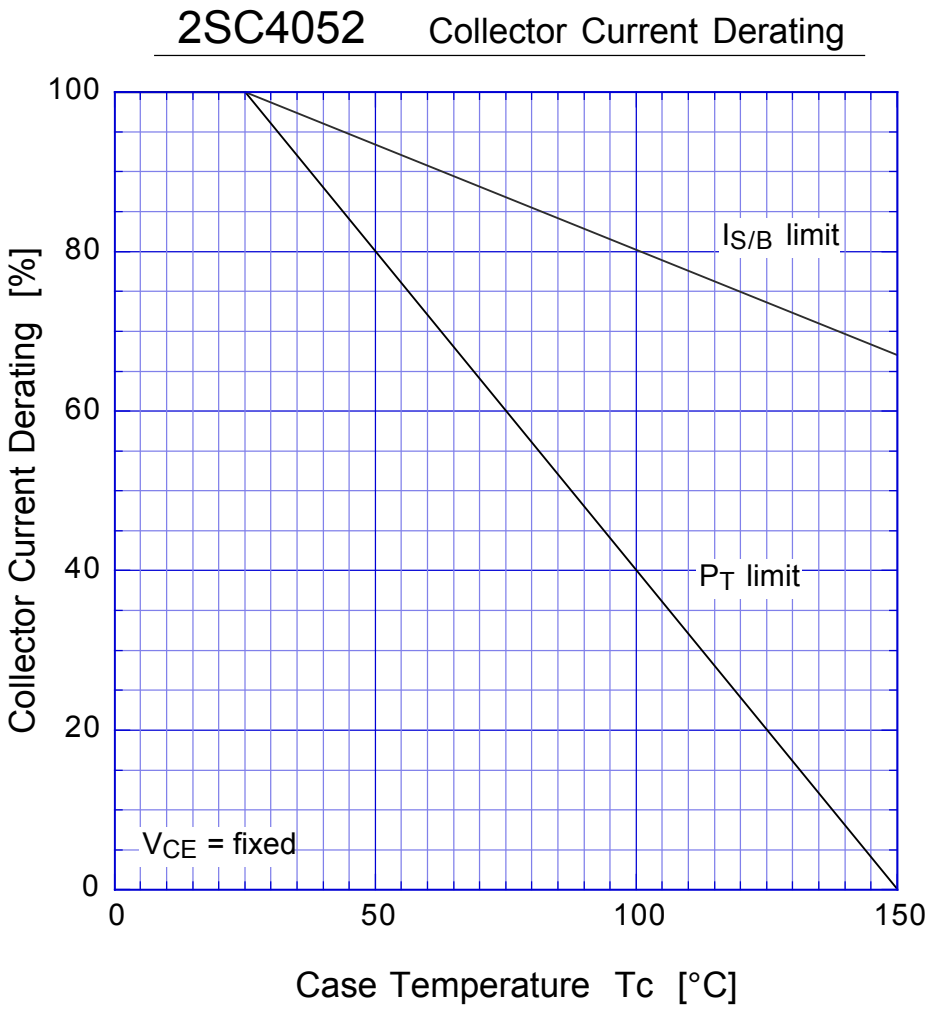
2SC4052 L-Load Switching Time - I_C (At High Temperature)





2SC4052 Forward Bias SOA





2SC4052 Reverse Bias SOA