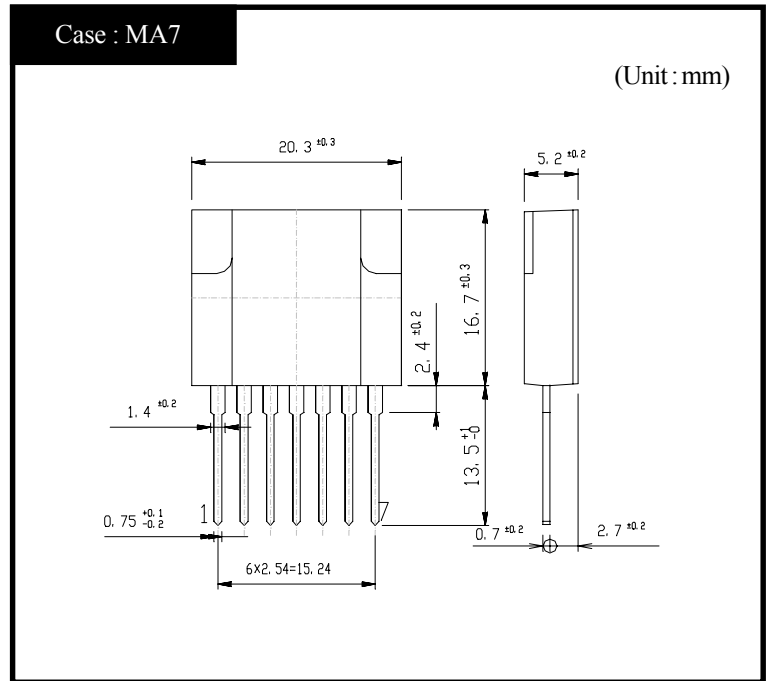


# MA3830

## OUTLINE DIMENSIONS



## RATINGS

### ●Absolute Maximum Ratings

Item	Symbol	Conditions	Ratings	Unit
Storage Temperature	Tstg		-30~125	°C
Operating Temperature	Top		-20~125	°C
Junction Temperature	Tj		150	°C
Peak Input Voltage	Vin	②+,④-,Fig.1 is Measurement Circuit of Peak Input Voltage Vin and Collector Cutoff Current I <sub>CEX</sub> .	850	V
Input Current	Iin	DC ②+,④-	6	A
		Pulse ②+,④- Pulse Width 150 μs MAX, Duty 1/2, Sawtooth Wave, Peak Value.	12	A
Maximum Power Dissipation	P <sub>D</sub>	Ta=25°C	3	W
	P <sub>D</sub>	Heatsink Tc=100°C	22	W
Dielectric Strength	Vdis	Terminals To Case AC 1 min	2	kV
Insulation Resistance		Terminals To Case 500VDC	100	MΩ
Max Voltage ④ to ⑦	V④•⑦	④+,⑦-	6	V
Max Current ⑥ to ④	I⑥•④	⑥+,④- (Peak) Duty Max 3/5	100	mA
Max Current ⑤ to ④	I⑤•④	⑤+,④- (Q <sub>2</sub> Collector Current)	500	mA

### ●Electrical Characteristics (Tc=25°C)

Item	Symbol	Conditions	Ratings	Unit	
Q1	Collector Cutoff Current	I <sub>CEX</sub>	V <sub>CE</sub> =850V, Fig.1 is Measurement Circuit of Peak Input Voltage Vin and Collector Cutoff Current I <sub>CEX</sub> , ②+,④-	MAX 100	μA
	DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> = 5V, I <sub>C</sub> = 3.0A, ②+,④-,⑤I <sub>B</sub>	11~22	
	Collector to Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =3.0A, I <sub>B</sub> =0.6A, ②+,④-,⑤I <sub>B</sub>	MAX 1.0	V
				MIN 1.7	V
	Driving Saturation Voltage	V <sub>D(sat)</sub>	I <sub>C</sub> =1.5A, I <sub>B</sub> =0.3A, ②+,④-,⑤I <sub>B</sub>	MAX 2.3	V
Thermal Resistance	θ <sub>jc</sub>	Junction to Case	MAX 2.2	°C/W	

●Standard Operating Condition\*Design Standard For Application Circuit

Item	Conditions	Ratings	Unit
Input Rated Voltage		AC175~276	V
Output Nominal Wattage		100	W
Output Nominal Voltage		24	V
Output Nominal Current		4.2	A

●Standard Operating Condition\*Standard Operating Characteristics (Ta=25°C)

Item	Conditions	Ratings	Unit	
AC Input Voltage	$I_0=4.2A, 20.5V \leq V_0 \leq 24.6V$	MAX 175	V	
Minimum Input Full Load Output Voltage	$V_{in}=180V, I_0=4.2A$	$24.0 \pm 0.6$	V	Fig 2, ① Refer
Maximum Input Light Load Output Voltage	$V_{in}=276V, I_0=0.0A$	$24.0 \pm 0.6$	V	Fig 2, ② Refer
Over Current Protection	Foldback Current	$V_{in}=276V, V_0=20V$	MAX 6.0	Fig 2, ③ Refer
	Short Circuit	$V_{in}=276V, R_0=0.5 \Omega$	Nodamage To Any Device, Automatic Recovery.	Fig 2, ④ Refer

Figure in ○=Terminal Sign

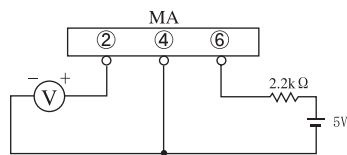


Fig1. Measurement Circuit

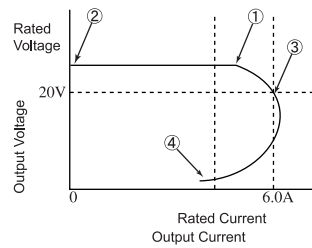
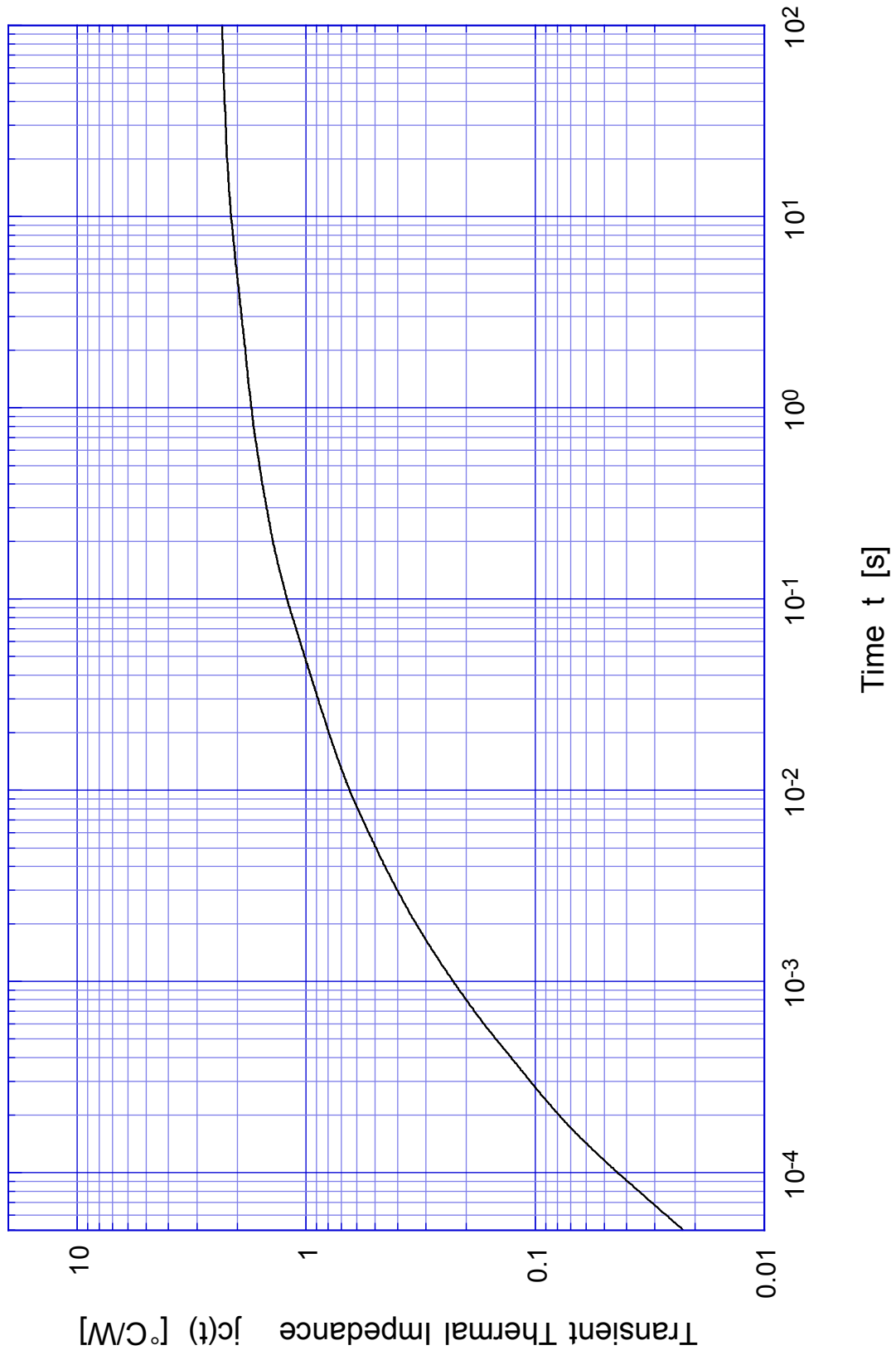


Fig2. Output Voltage/Current

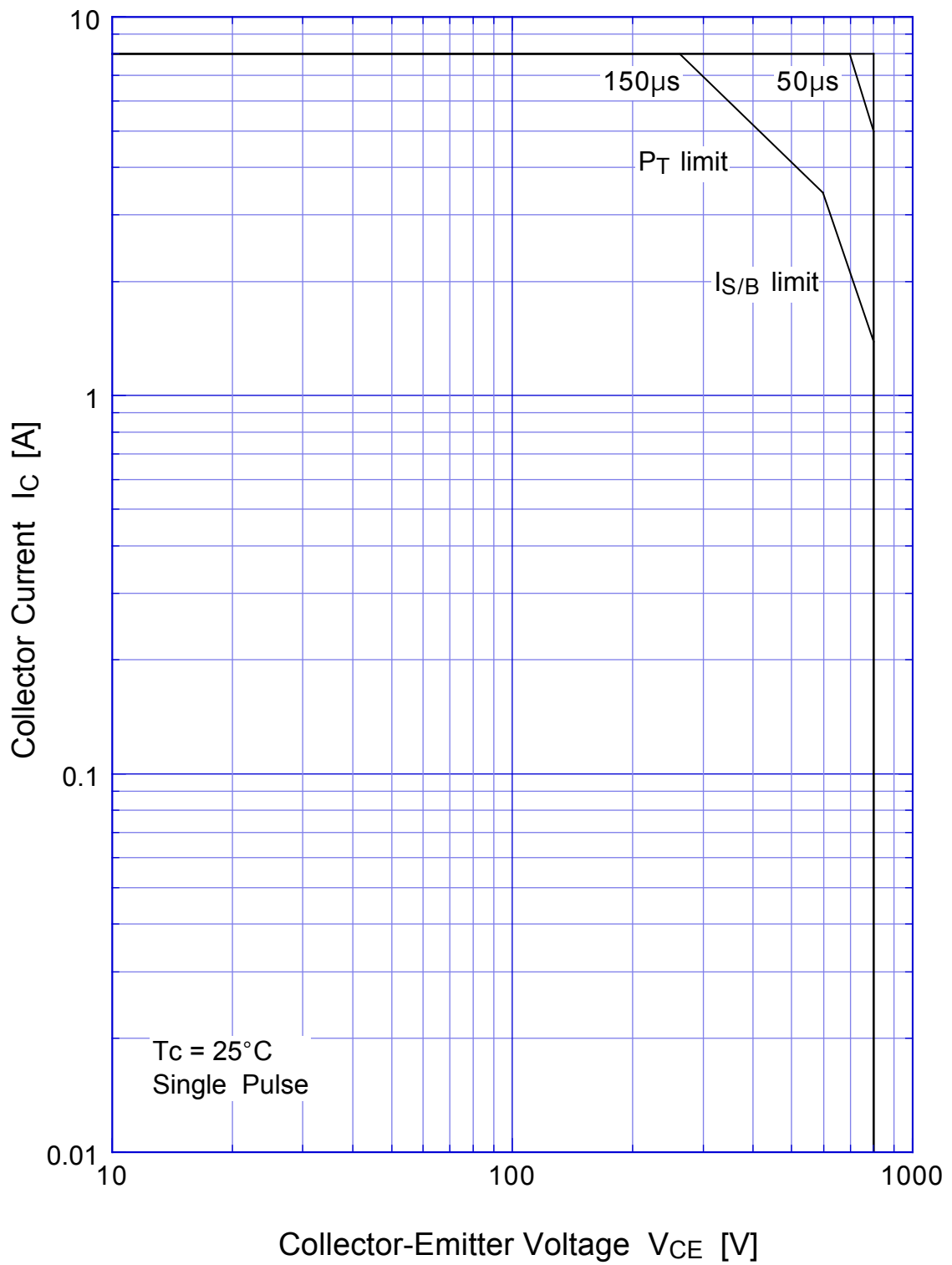
MA3830 Transient Thermal Impedance

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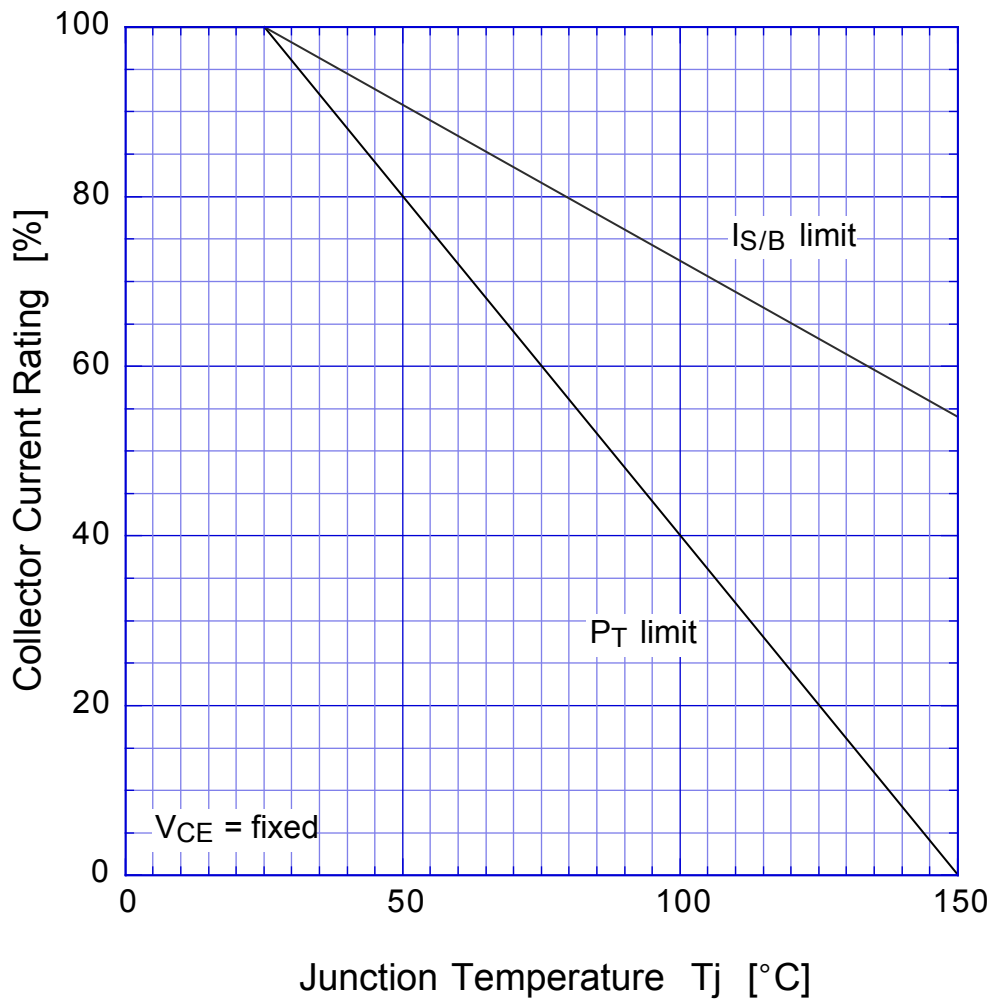
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# Forward Bias SOA



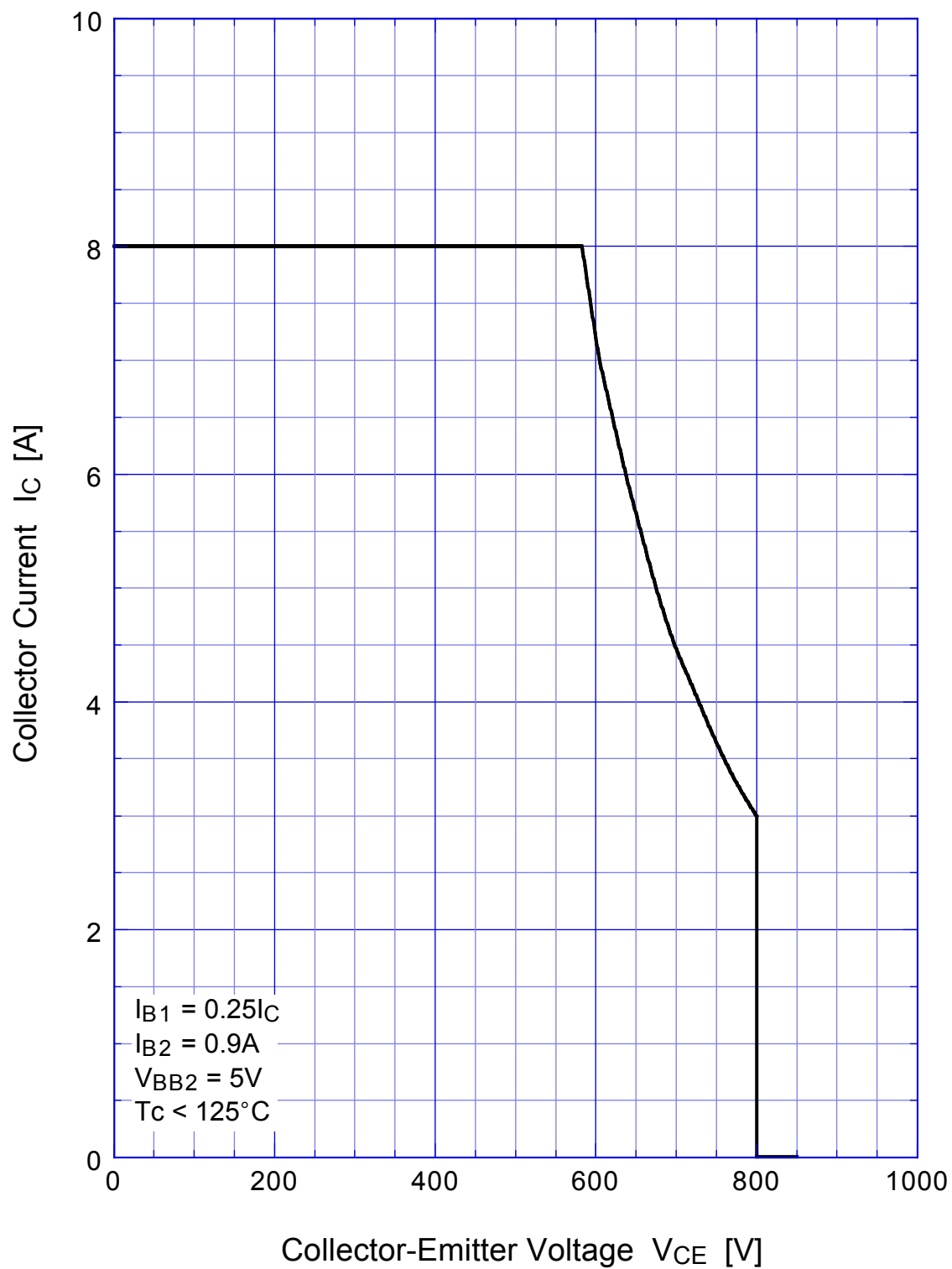
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## Collector Current Derating



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Reverse Bias SOA



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## $h_{FE} - I_C$

