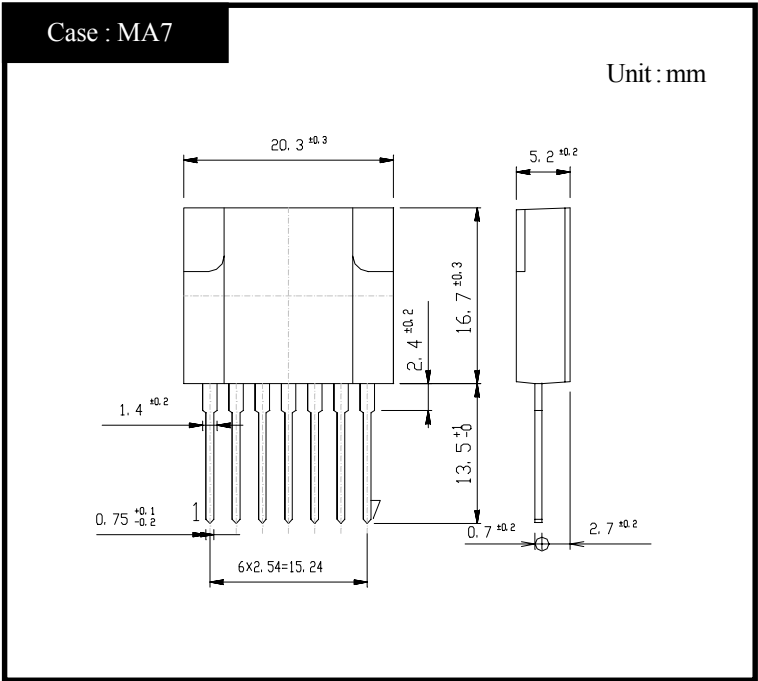


MA2830

OUTLINE DIMENSIONS



RATINGS

●Absolute Maximum Ratings

Item	Symbol	Conditions	Ratings		Unit
			P Class	N Class	
Storage Temperature	Tstg		-30~125	-30~125	°C
Operating Temperature	Top	Case Temperature	-20~125	-20~125	°C
Junction Temperature	Tj		150	150	°C
Peak Input Voltage	Vin	②+,④-,Fig.1 is Measurement Circuit of Peak Input Voltage Vin and Collector Cutoff Current ICEX.	850	850	V
Input Current	Iin	Pulse Pulse Width 150 μs MAX, Duty1/2, Sawtooth Wave, Peak Value, ②+,④-	8	8	A
Maximum Operating Frequency	f(max)		200	200	kHz
Maximum Power Dissipation	PD	Ta=25°C	3	3	W
	PD	Heatsink Tc=100°C	22	22	W
Dielectric Strength	Vdis	Terminals To Case AC 1 min	2	2	kV
Insulation Resistance		Terminals To Case 500VDC	100	100	MΩ
Fold Back Control Voltage	VCONT(max)	Fold Control Resistance=0Ω Duty 1/2, ④,⑦	±8	±8	V
Fold Back Control Current	ICONT(max)	④-,⑥+	100	100	mA

●Electrical Characteristics (Tc=25°C)

Item		Symbol	Conditions	Ratings		Unit
				P Class	N Class	
Q1	Collector Cutoff Current	$I_{CEX}$	$V_{CE}=850V$ , Fig.1 is Measurement Circuit of Peak Input Voltage $V_{in}$ and Collector Cutoff Current $I_{CEX}$ -, ②+,④-	MAX 0.1	MAX 0.1	mA
	DC Current Gain	$h_{FE}$	$V_{CE}=5V$ , $I_C=3.0A$ , ②+,④-,⑤ $I_B$	13~26	8~16	
	Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=3.0A$ , $I_B=0.6A$ , ②+,④-,⑤ $I_B$	MAX 1.0	MAX 1.0	V
	Thermal Resistance	$\theta_{jc}$	Junction to Case	MAX 2.26	MAX 2.26	°C/W
D1	Reverse Current	$I_R$	$V_R=800V$ ,①+,②-	MAX 10	MAX 10	$\mu A$
	Forward Voltage	$V_F$	$I_F=0.6A$ ,①-,②+	MAX 1.7	MAX 1.7	V
Driving Saturation Voltage		$V_D(sat)$	$I_C=1.5A$ , $I_B=0.3A$ , ⑤+,④-	MIN 1.7	MIN 1.7	V
				MAX 2.3	MAX 2.3	

●Standard Operating Condition•Design Standard For Application Circuit

Item	Conditions	Ratings		Unit
		P Class	N Class	
Input Rated Voltage		AC90~274	AC90~274	V
Output Nominal Wattage		50	50	W
Output Nominal Voltage		12	12	V
Output Nominal Current		4	4	A

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

Item		Conditions	Ratings		Unit	
			P Class	N Class		
Minimum Input Full Load Output Voltage		V <sub>in</sub> =90V, I <sub>O</sub> =4A	12.0±0.6	12.0±0.6	V	Fig 2, ① Refer
Maximum Input Light Load Output Voltage		V <sub>in</sub> =274V, I <sub>O</sub> =0.4A	12.0±0.6	12.0±0.6	V	Fig 2, ② Refer
AC Input Voltage		I <sub>O</sub> =4A	MAX 85	MAX 85	V	
Over Current Protection	Foldback Current	V <sub>in</sub> =274V, V <sub>O</sub> =10V	MAX 7	MAX 7	A	Fig 2, ③ Refer
	Short Circuit	V <sub>in</sub> =274V, R <sub>O</sub> =0.5Ω	Nodamage To Any Device, Automatic Recovery.		—	Fig 2, ④ Refer
Output Ripple Noise		V <sub>in</sub> =90~274V, I <sub>O</sub> =0.4~4A	MAX 150	MAX 150	mV P-P	

Figure in ○=Terminal Sign

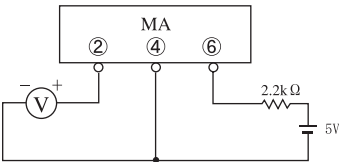


Fig1. Measurement Circuit

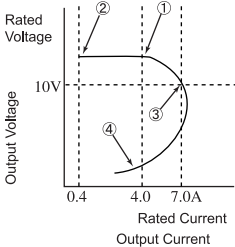
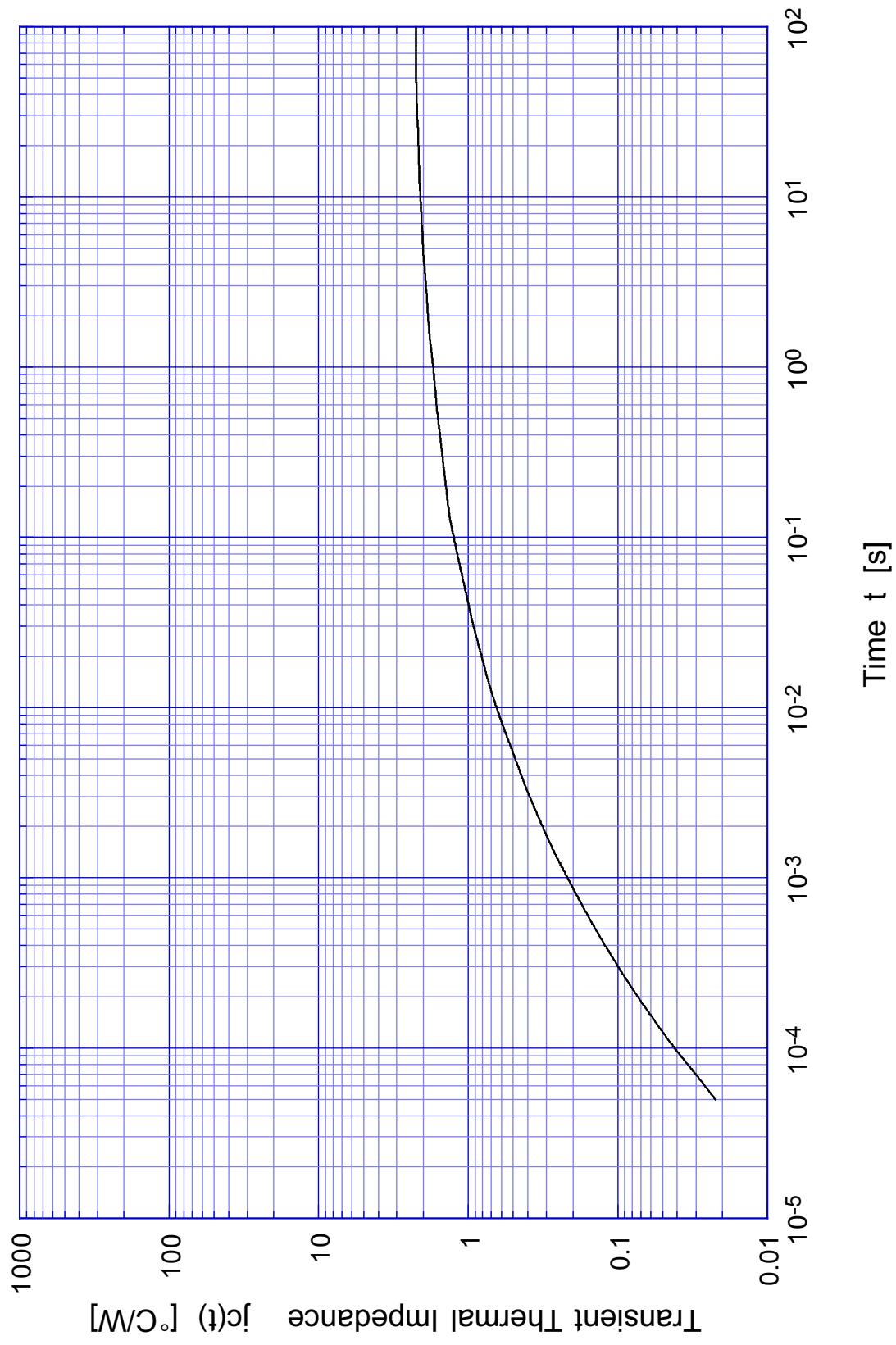


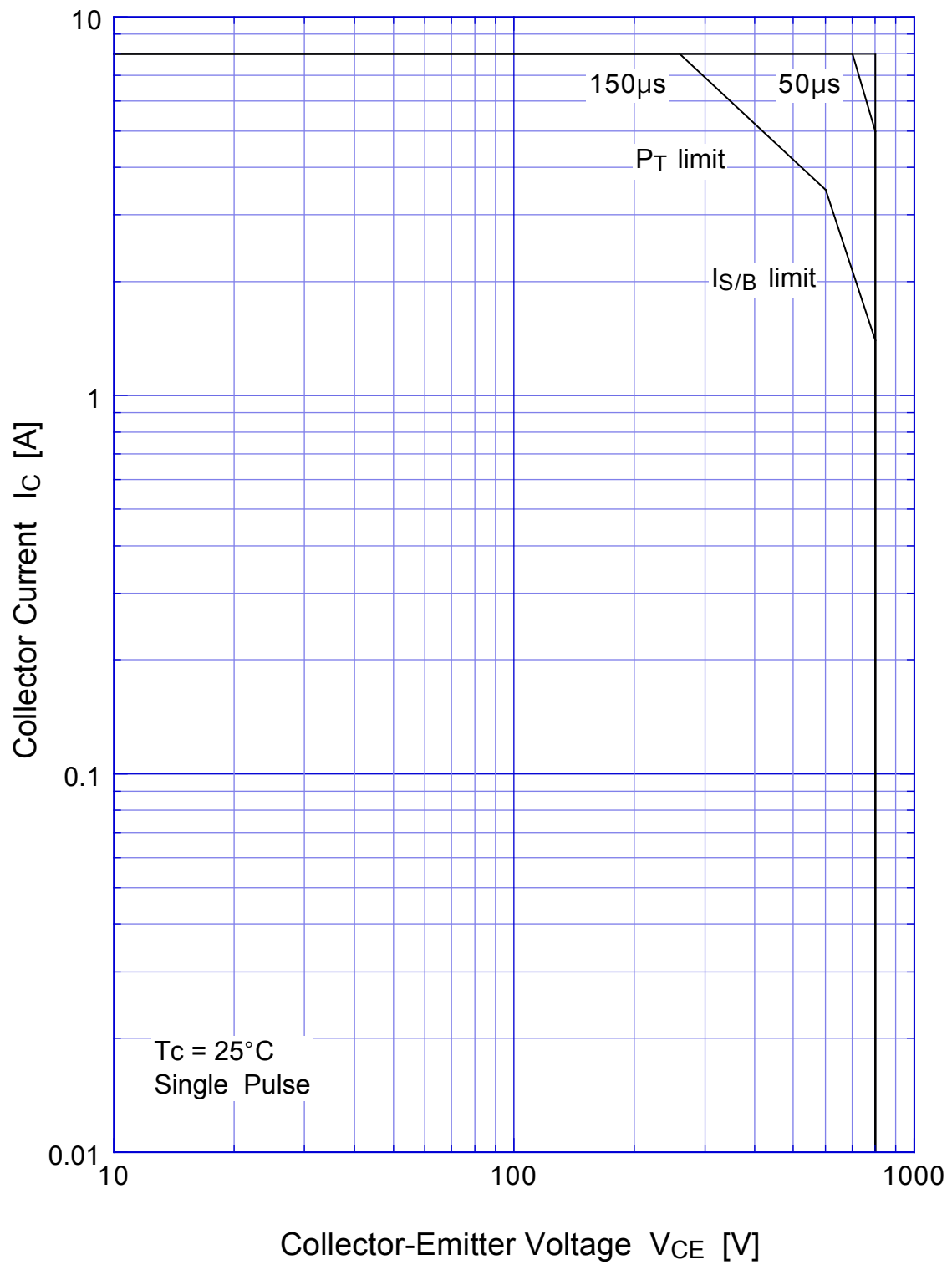
Fig2. Output Voltage/Current

# MA2830      Transient Thermal Impedance



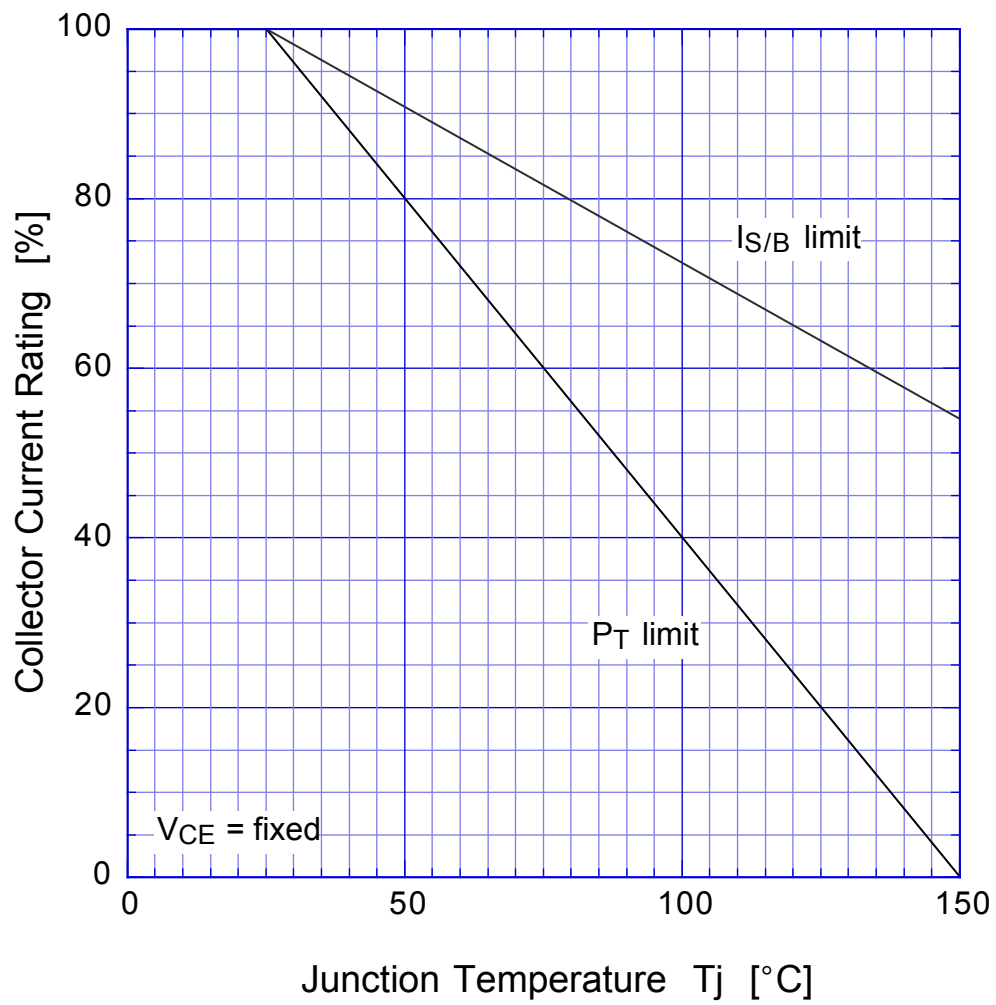
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Forward Bias SOA



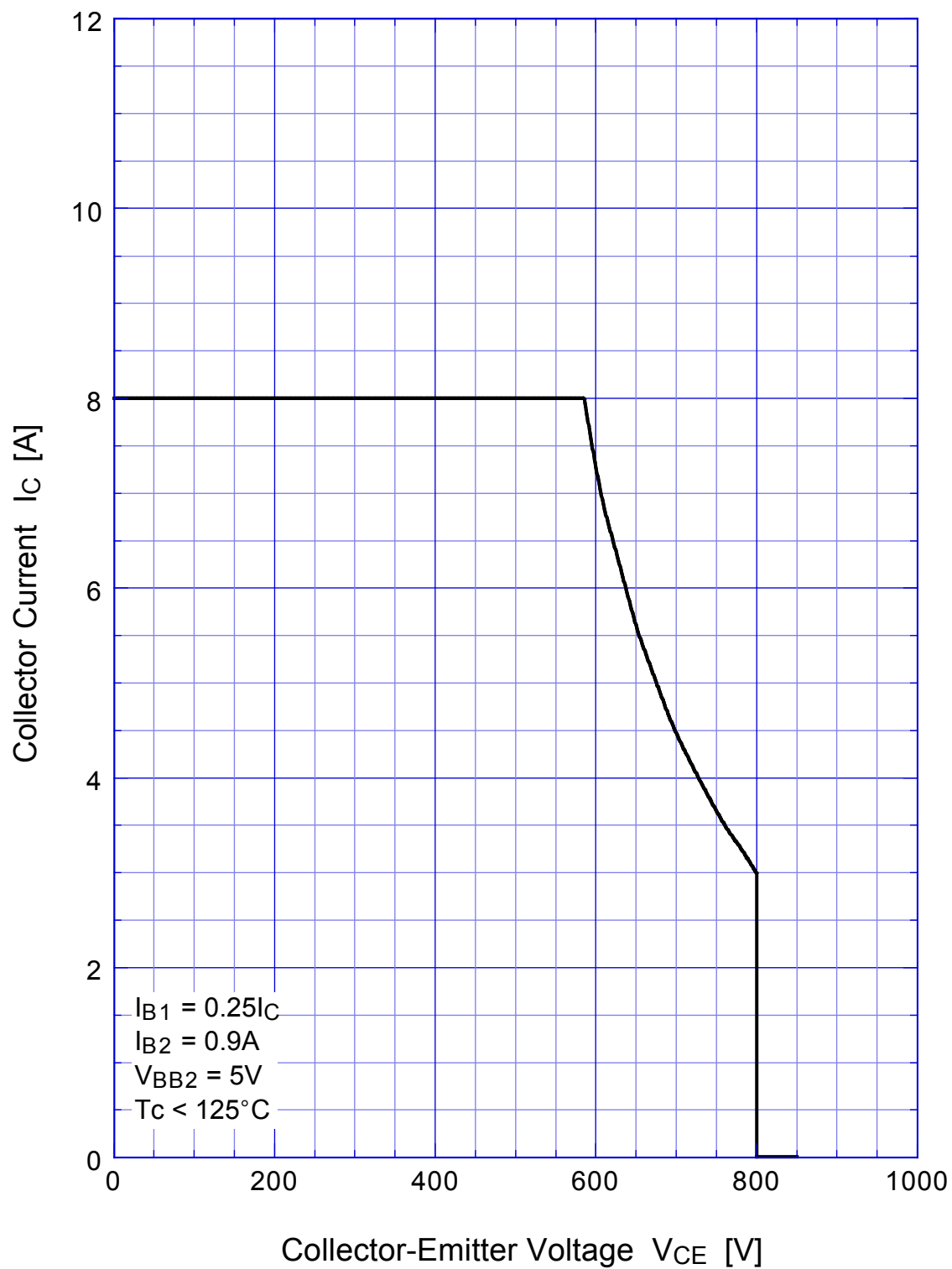
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Collector Current Derating



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Reverse Bias SOA



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$h_{FE} - I_C$

