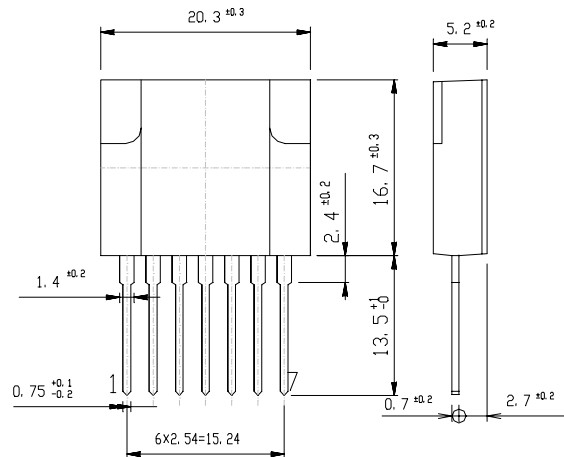


MA1030

OUTLINE DIMENSIONS

Case : MA7

Unit : mm



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 I _{CX} .	500	500	V
Input Current	Iin	Pulse Pulse Width 150 μs MAX, Duty 1/2, Sawtooth Wave, Peak Value, ②+,④-	8	8	A
Maximum Operating Frequency	f(max)		200	200	kHz
Maximum Power Dissipation	P _D	Ta=25°C	3	3	W
	P _D	Heatsink Tc=100°C	14	14	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	V _{CONT} (max)	Fold Control Resistance=0Ω Duty 1/2, ④,⑦	±8	±8	V
Fold Back Control Current	I _{CONT} (max)	④-,⑥+	100	100	mA

●Electrical Characteristics (T_c=25°C)

Item		Symbol	Conditions	Ratings		Unit
				P Class	N Class	
Q1	Collector Cutoff Current	I_{CEX}	$V_{CE}=500V$, 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}	$V_{CE} = 5V$, $I_C = 2.5A$, ②+,④-,⑤ I_B	15~30	10~20	
	Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=2.5A$, $I_B=0.5A$, ②+,④-,⑤ I_B	MAX 1.0	MAX 1.0	V
	Thermal Resistance	θ_{jc}	Junction to Case	MAX 3.57	MAX 3.57	°C/W
D1	Reverse Current	I_R	$V_R=450V$,①+,②-	MAX 10	MAX 10	μA
	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		AC90~132	AC90~132	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		Vin=90V, I _O =4A	12.0±0.6	12.0±0.6	V	Fig 2, ① Refer
Maximum Input Light Load Output Voltage		Vin=132V, I _O =0.4A	12.0±0.6	12.0±0.6	V	Fig 2, ② Refer
AC Input Voltage		I _O =4A	MAX 85	MAX 85	V	
Over Current Protection	Foldback Current	Vin=132V, V _O =10V	MAX 6	MAX 6	A	Fig 2, ③ Refer
	Short Circuit	Vin=132V, R _O =0.5 Ω	Nodamage To Any Device, Automatic Recovery.		—	Fig 2, ④ Refer
Output Ripple Noise		Vin=90~132V, I _O =0.4~4A	MAX 150	MAX 150	mV P-P	

Figure in ○=Terminal Sign

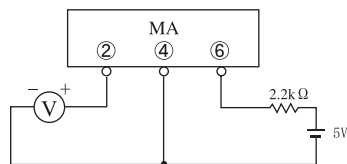


Fig1. Measurement Circuit

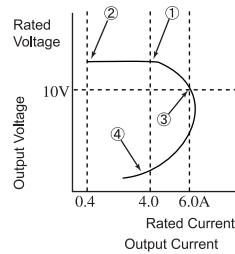
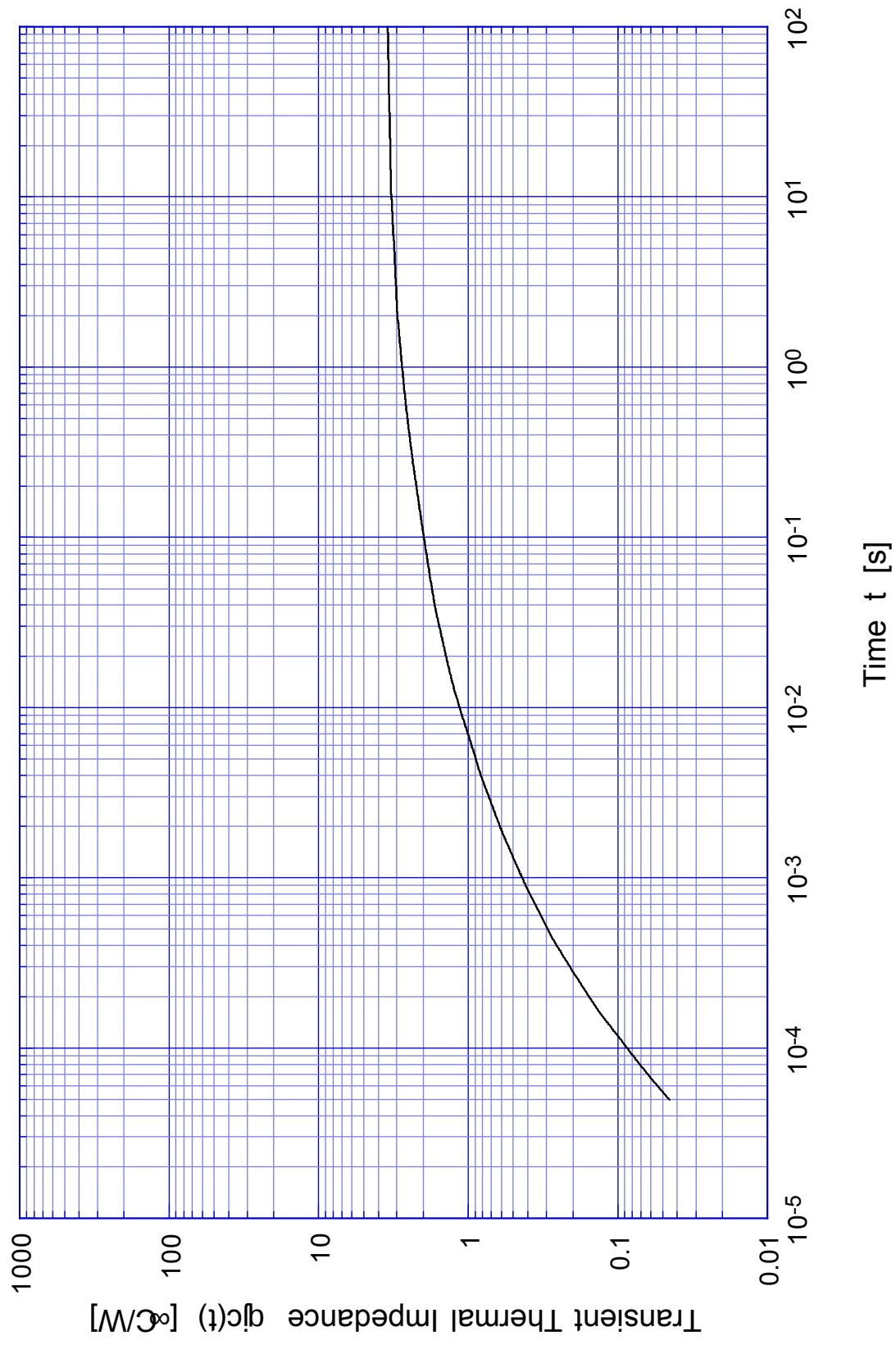


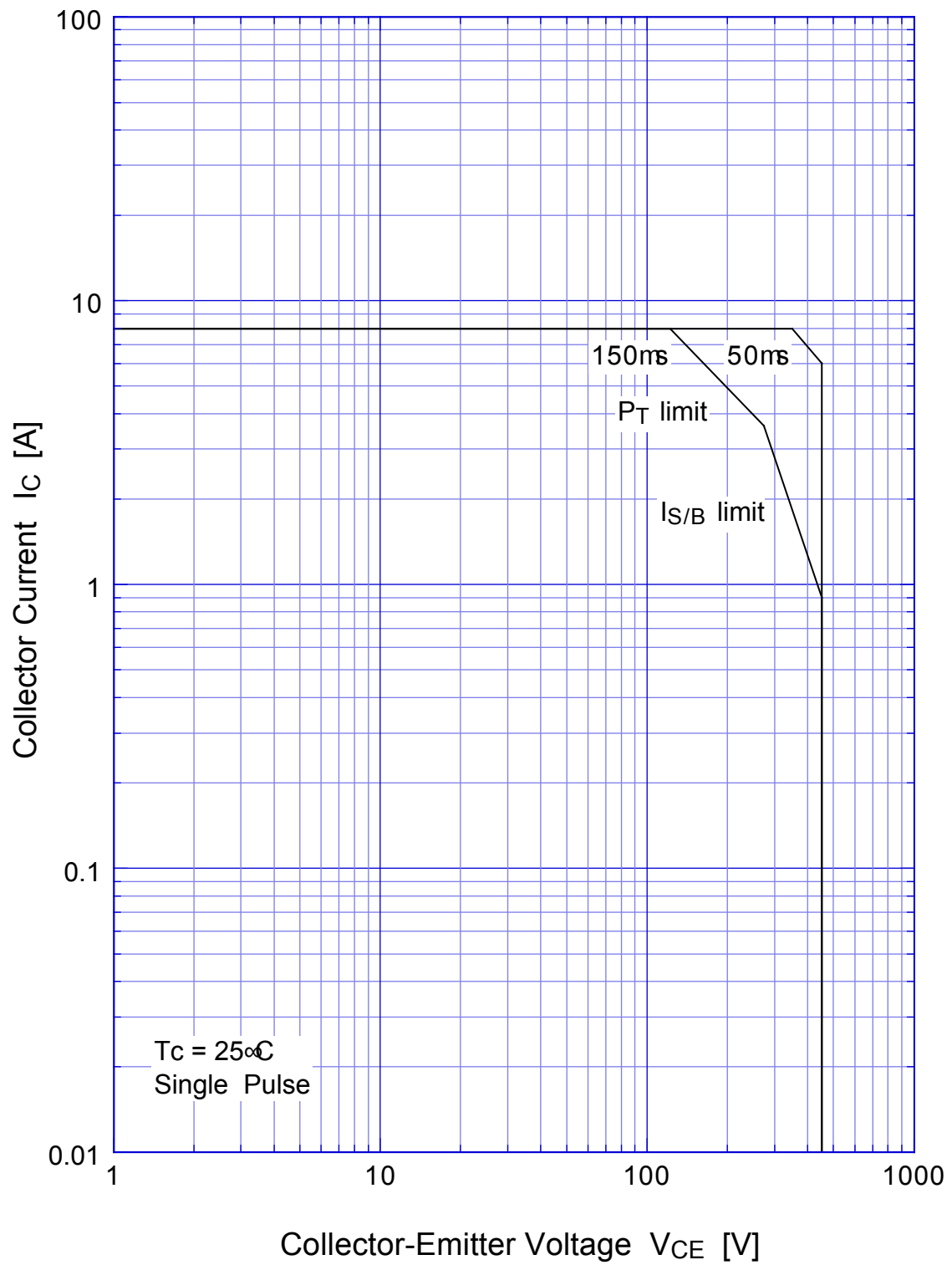
Fig2. Output Voltage/Current

MA1030 Transient Thermal Impedance



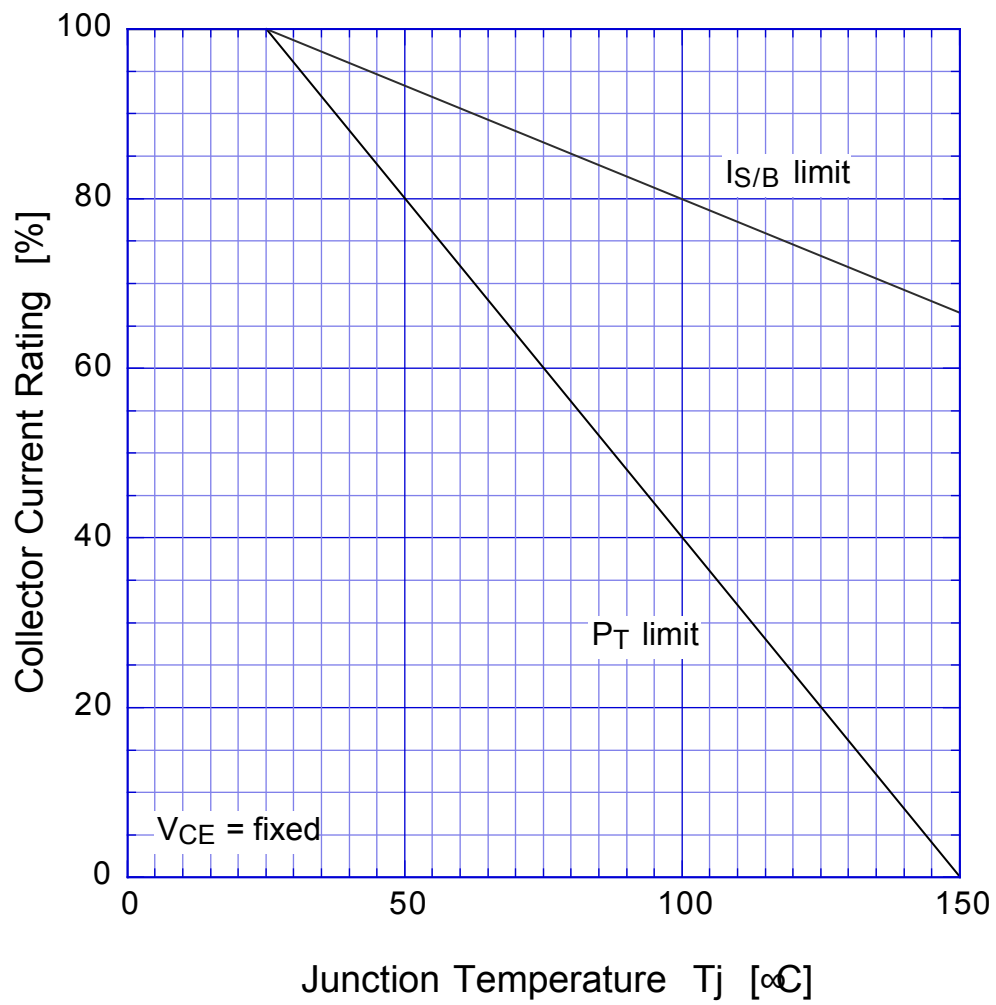
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Forward Bias SOA



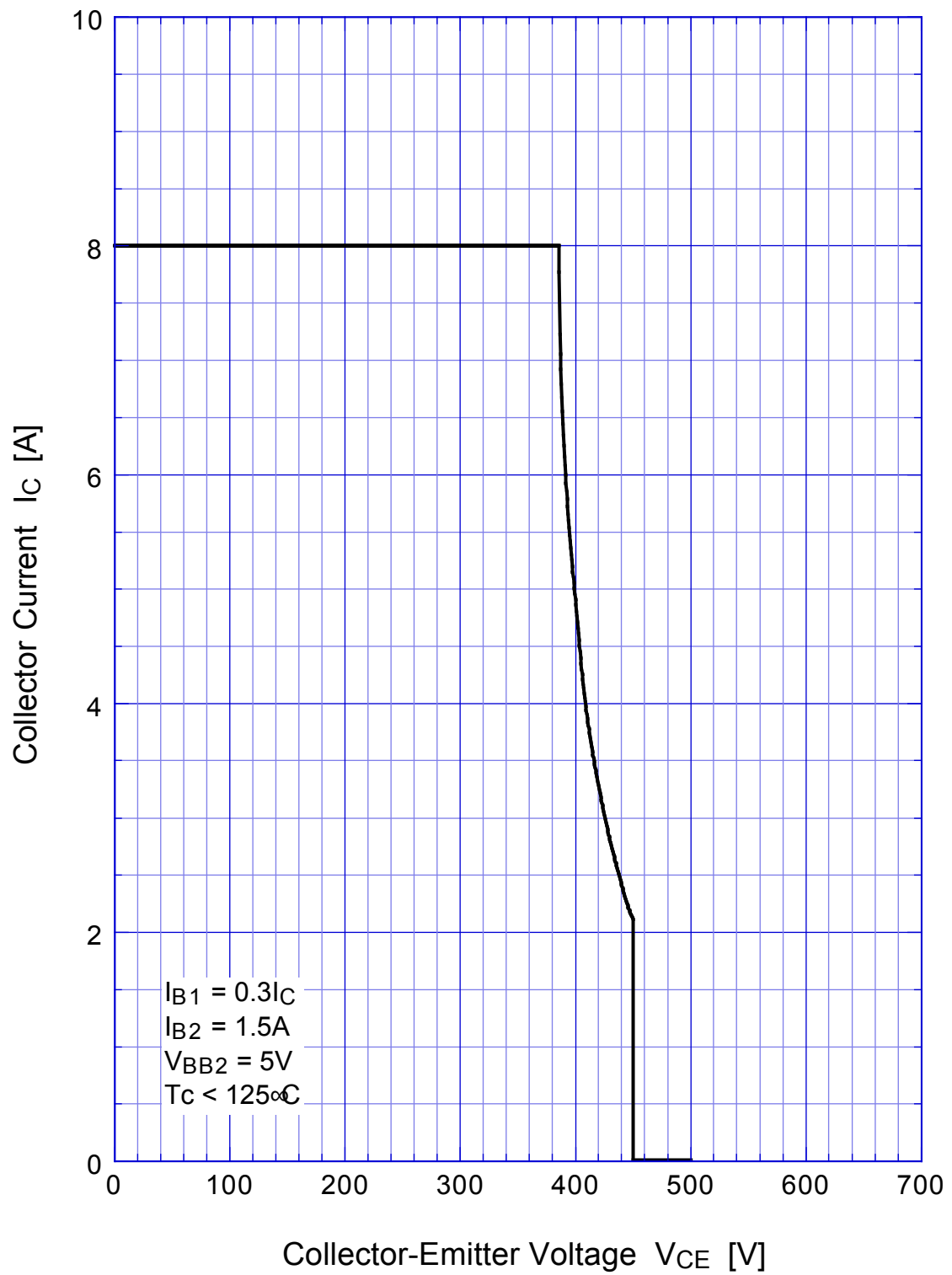
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Collector Current Derating



MA1030

Reverse Bias SOA



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$h_{FE} - I_C$

