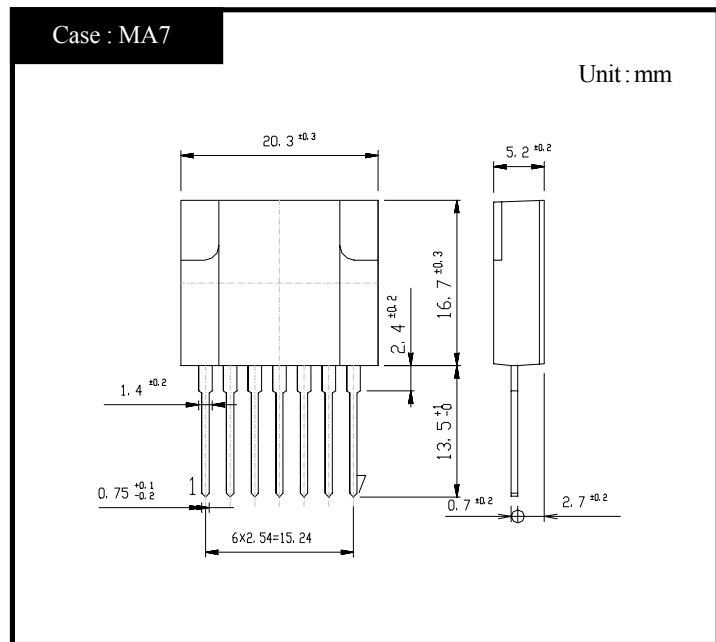


MA1030

OUTLINE DIMENSIONS



RATINGS

●Absolute Maximum Ratings

Item	Symbol	Conditions	Ratings		Unit
			P Class	N Class	
Storage Temperature	T_{stg}		-30~125	-30~125	°C
Operating Temperature	T_{op}	Case Temperature	-20~125	-20~125	°C
Junction Temperature	T_j		150	150	°C
Peak Input Voltage	V_{in}	②+,④-,Fig.1 is Measurement Circuit of Peak Input Voltage V_{in} and Collector Cutoff Current I_{CEX} .	500	500	V
Input Current	I_{in}	Pulse Pulse Width 150 μ s 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	$T_a=25^\circ\text{C}$	3	3	W
		Heatsink $T_c=100^\circ\text{C}$	14	14	W
Dielectric Strength	V_{dis}	Terminals To Case AC 1 min	2	2	kV
Insulation Resistance		Terminals To Case 500VDC	100	100	M Ω
Fold Back Control Voltage	$V_{cont(max)}$	Fold Control Resistance=0 Ω Duty 1/2, ④,⑦	± 8	± 8	V
Fold Back Control Current	$I_{cont(max)}$	④-,⑥+	100	100	mA

●Electrical Characteristics ($T_c=25^\circ\text{C}$)

Item	Symbol	Conditions	Ratings		Unit	
			P Class	N Class		
Q1	Collector Cutoff Current	I_{CEX}	$V_{CE}=500\text{V}$, 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}	$V_{CE}=5\text{V}$, $I_C=2.5\text{A}$, ②+,④-,⑤ I_B	15~30	10~20	
	Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=2.5\text{A}$, $I_B=0.5\text{A}$, 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	$V_R=450\text{V}$, ①+,②-	MAX 10	MAX 10	μ A
	Forward Voltage	V_F	$I_F=0.6\text{A}$, ①-,②+	MAX 1.7	MAX 1.7	V
Driving Saturation Voltage	$V_D(sat)$	$I_C=1.5\text{A}$, $I_B=0.3\text{A}$, 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 =0.5Ω	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

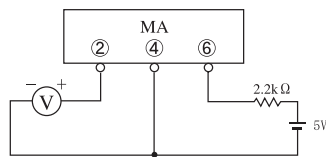


Fig1. Measurement Circuit

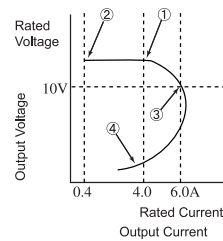
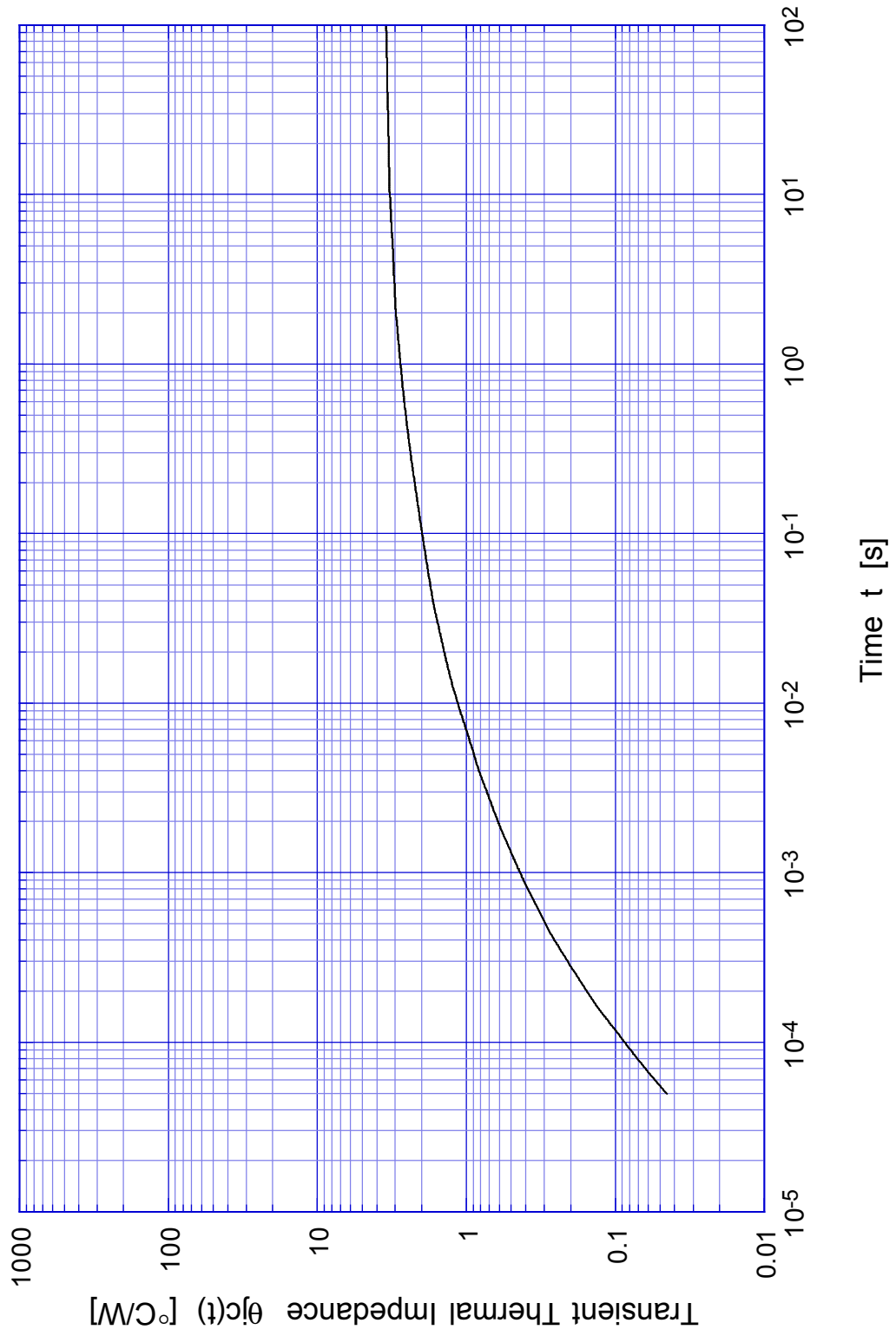


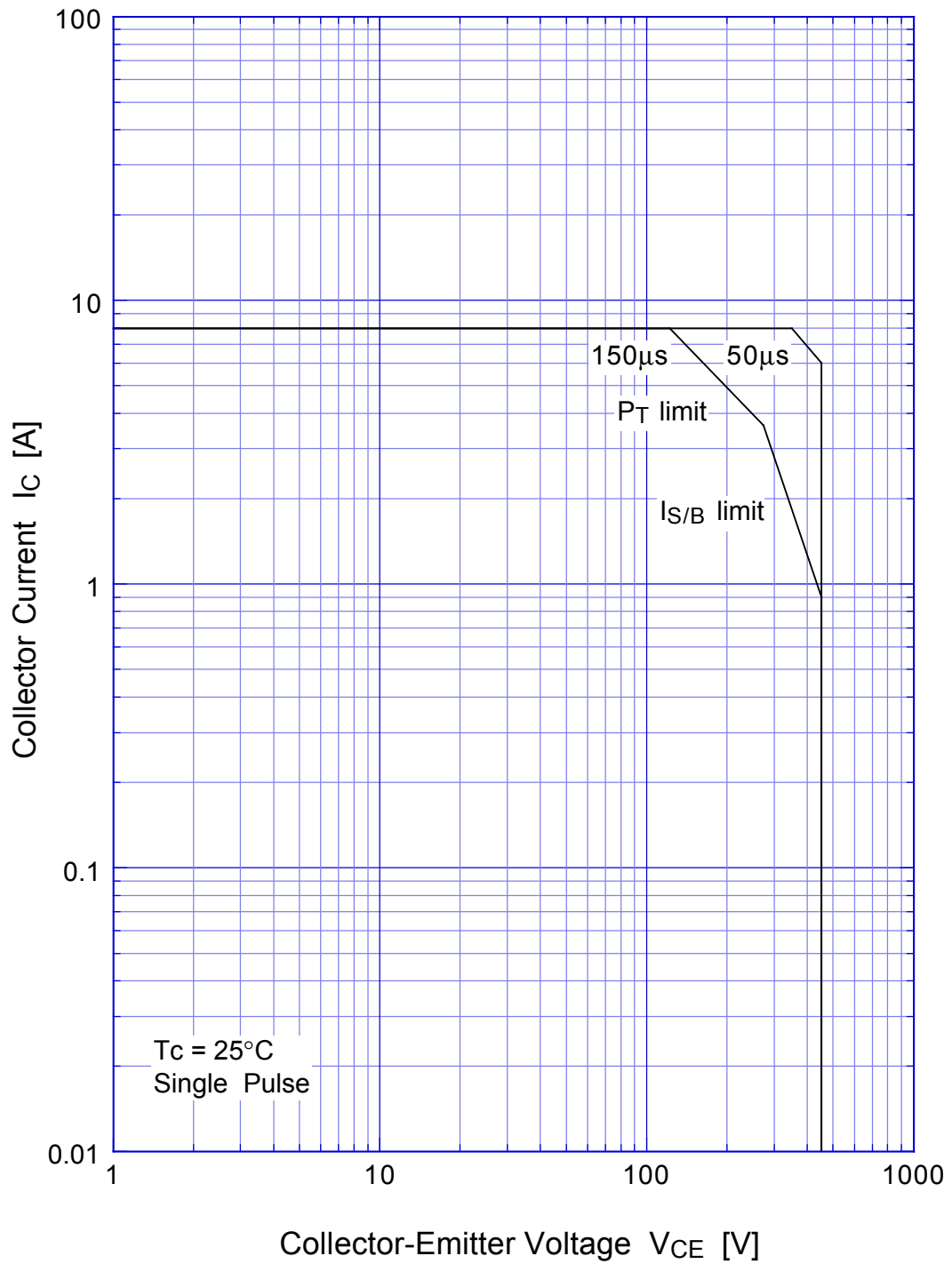
Fig2. Output Voltage/Current

MA1030 Transient Thermal Impedance

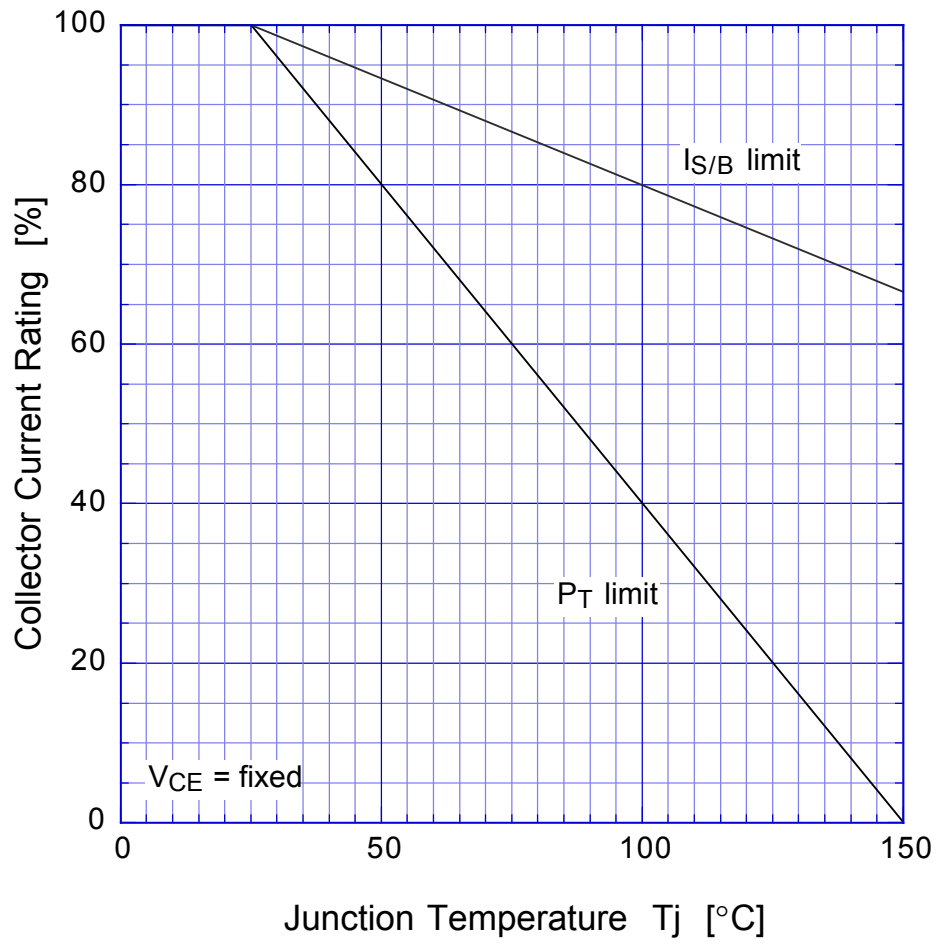


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Forward Bias SOA

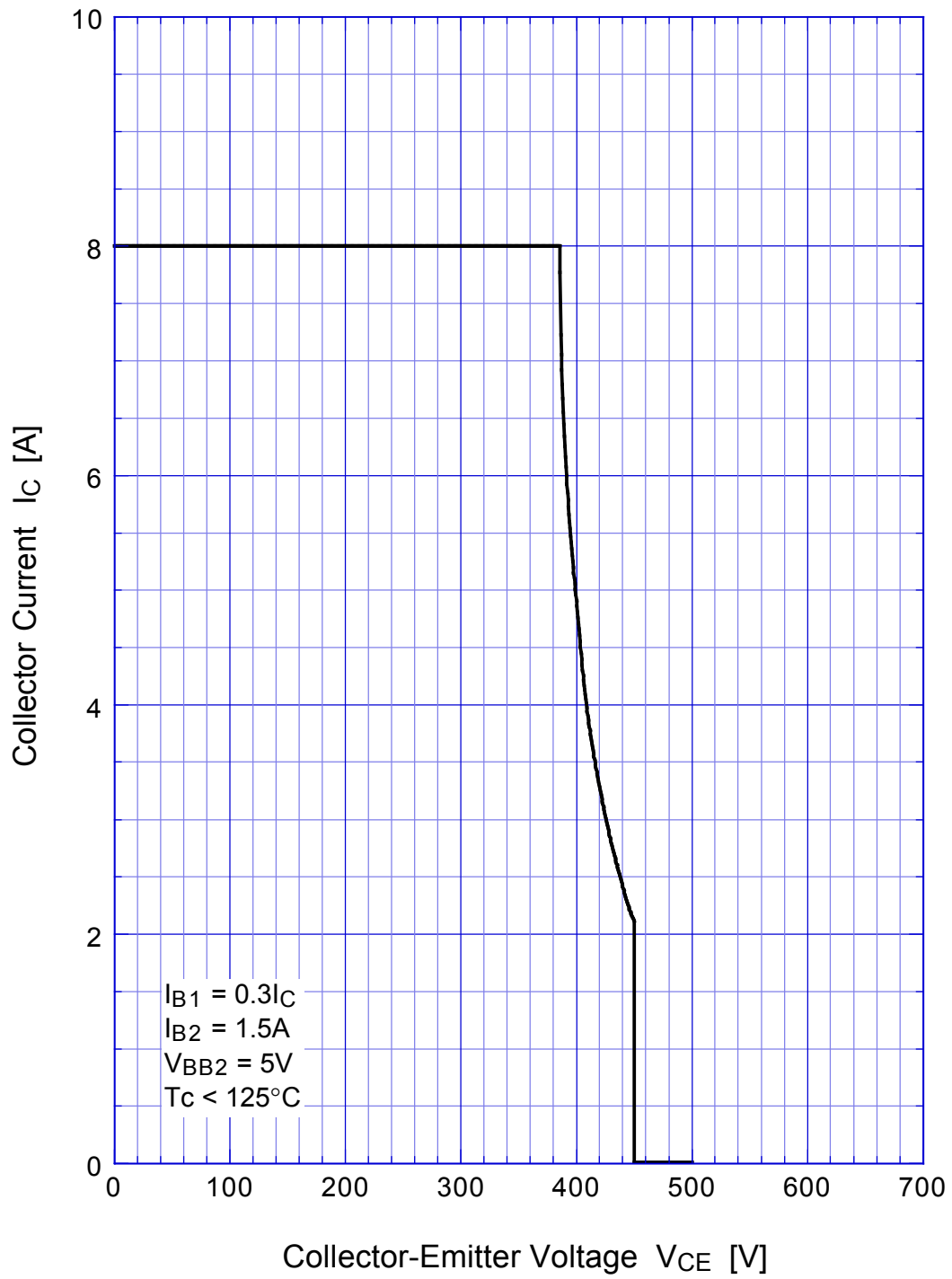


MA1030 Collector Current Derating



MA1030

Reverse Bias SOA



MA1030

hFE - I_C

