

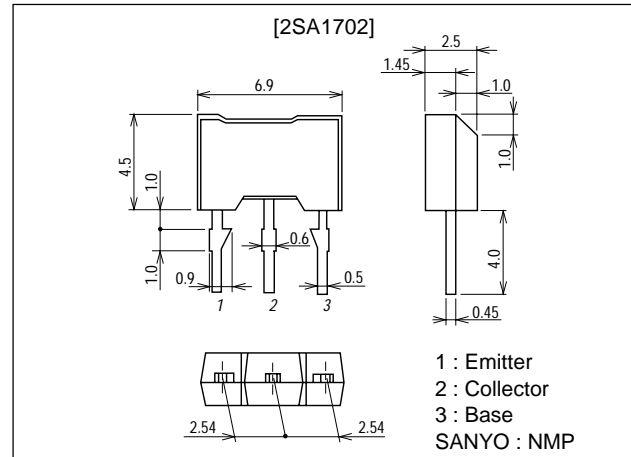
**2SA1702****High-Current Switching Applications****Features**

- Adoption of FBET, MBIT processes.
- Low saturation voltage.
- Large current capacity.
- Fast switching speed.

Package Dimensions

unit:mm

2064A

**Specifications****Absolute Maximum Ratings** at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}		-25	V
Collector-to-Emitter Voltage	V_{CE0}		-20	V
Emitter-to-Base Voltage	V_{EB0}		-5	V
Collector Current	I_C		-5	A
Collector Current (Pulse)	I_{CP}		-8	A
Collector Dissipation	P_C		1	W
Junction Temperature	T_J		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Electrical Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CB0}	$V_{CB} = -20\text{V}, I_E = 0$			-500	nA
Emitter Cutoff Current	I_{EB0}	$V_{EB} = -4\text{V}, I_C = 0$			-500	nA
DC Current Gain	h_{FE1}	$V_{CE} = -2\text{V}, I_C = -500\text{mA}$	100*		400*	
	h_{FE2}	$V_{CE} = -2\text{V}, I_C = -4\text{A}$	60			

* : The 2SA1702 is classified by 500mA h_{FE} as follows :

Continued on next page.

Rank	R	S	T
h_{FE}	100 to 200	140 to 280	200 to 400

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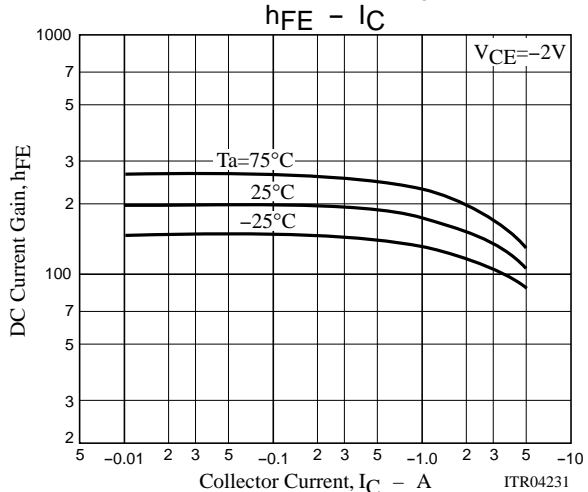
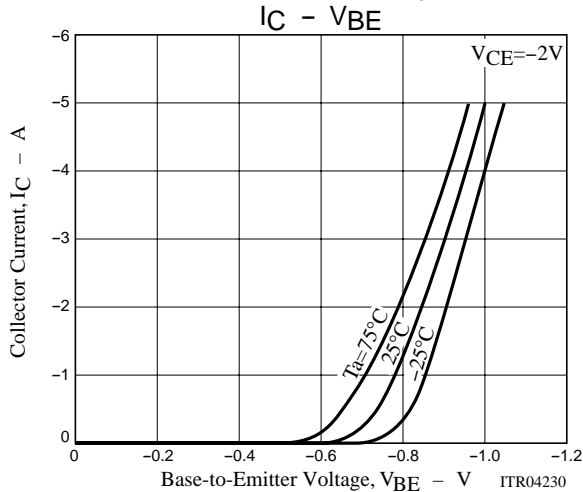
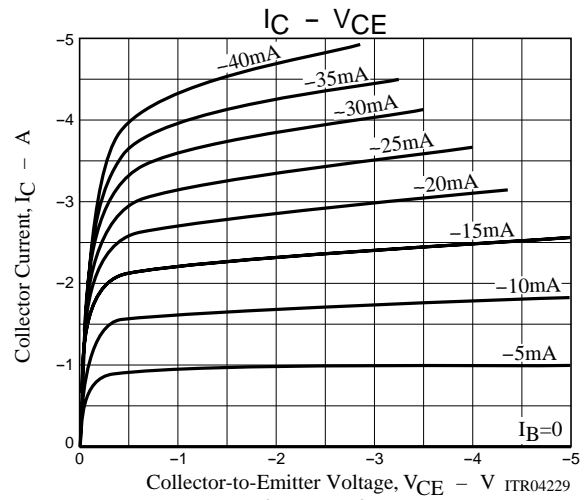
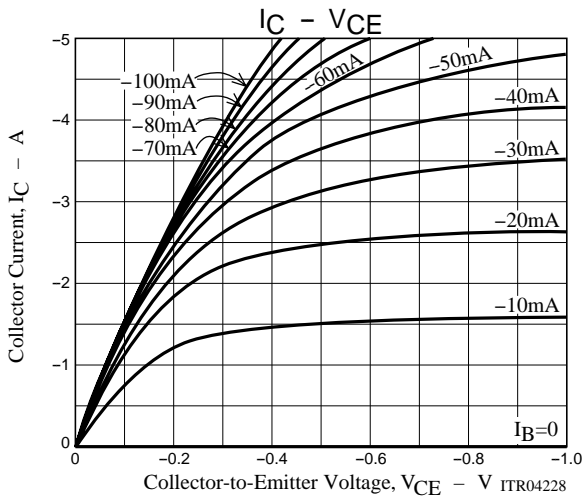
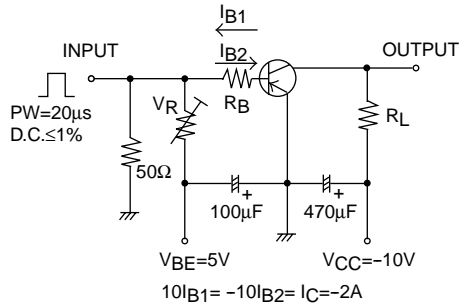
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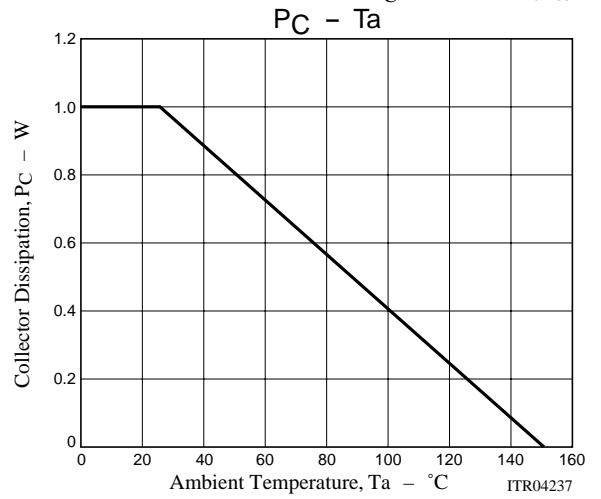
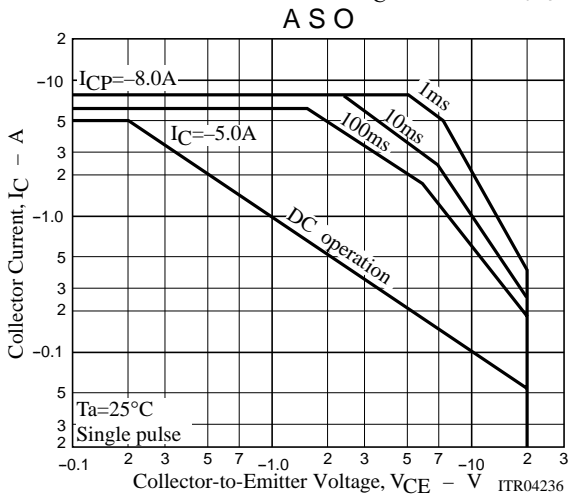
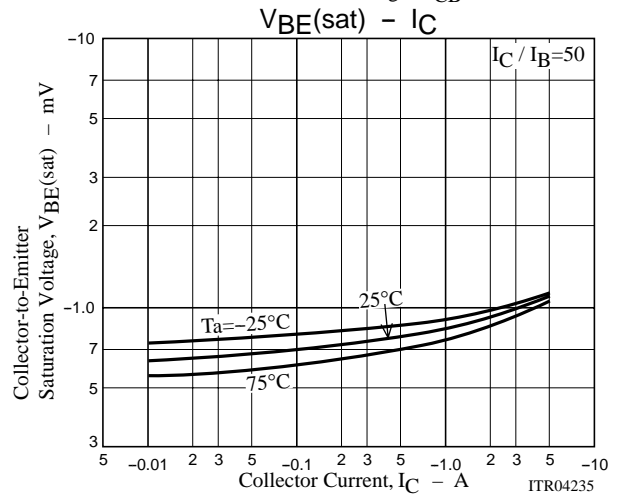
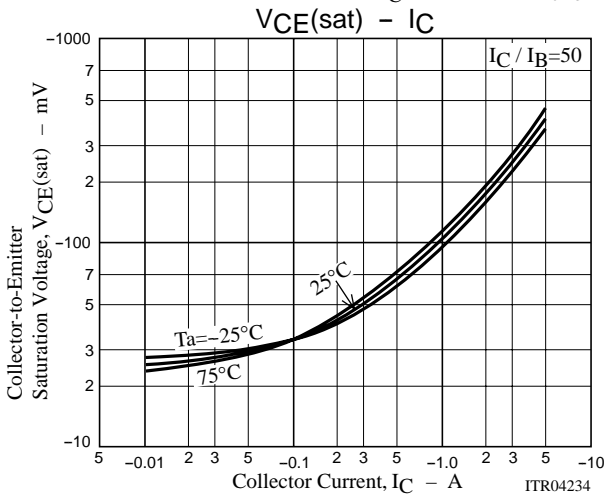
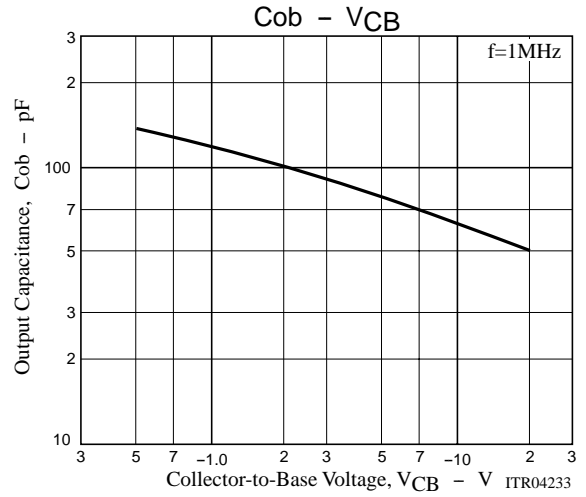
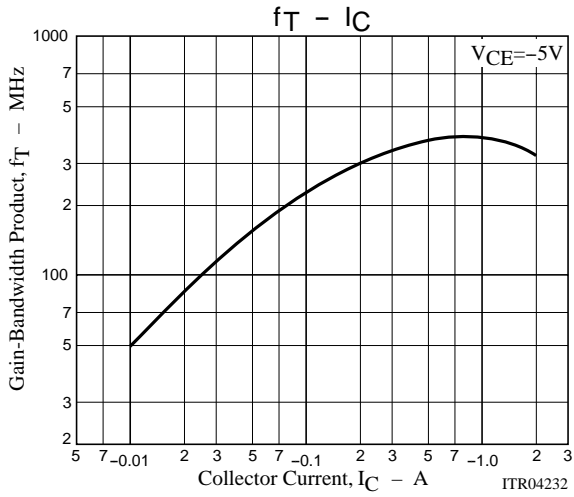
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Parameter	Symbol	Conditions	Ratings		Unit
Gain-Bandwidth Product	f_T	$V_{CE}=-5V, I_C=-200mA$	320		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-3A, I_B=-60mA$	-250	-500	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=-3A, I_B=-60mA$	-1	-1.3	V
Output Capacitance	C_{ob}	$V_{CB}=-10V, f=1MHz$	60		pF
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-10\mu A, I_E=0$	-25		V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-1mA, R_{BE}=\infty$	-20		V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-10\mu A, I_C=0$	-5		V
Turn-ON Time	t_{on}	See specified Test Circuit	40		ns
Storage Time	t_{stg}	See specified Test Circuit	200		ns
Fall Time	t_f	See specified Test Circuit	10		ns

Switching Time Test Circuit



2SA1702



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