

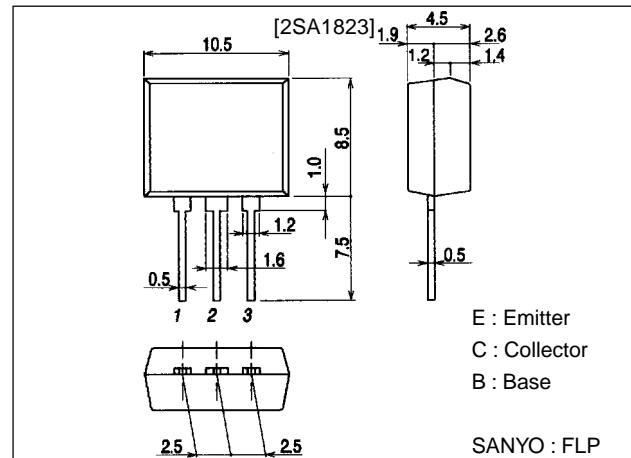
**20V/8A Switching Applications****Features**

- Adoption of MBIT process.
- Low saturation voltage.
- Fast switching speed.
- Large current capacity.
- It is possible to make appliances more compact because it's height on board is 9.5mm.
- Meets radial tapping.

Package Dimensions

unit:mm

2084

**Specifications****Absolute Maximum Ratings at Ta = 25°C**

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}		-25	V
Collector-to-Emitter Voltage	V_{CEO}		-20	V
Emitter-to-Base Voltage	V_{EBO}		-5	V
Collector Current	I_C		-8	A
Collector Current (Pulse)	I_{CP}		-12	A
Base Current	I_B		-1.5	A
Collector Dissipation	P_C		1.5	W
Junction Temperature	T_J		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=-20V, I_E=0$			-1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=-4V, I_C=0$			-1	μA
DC Current Gain	h_{FE1}	$V_{CE}=-2V, I_C=-500mA$	100*		400*	
	h_{FE2}	$V_{CE}=-2V, I_C=-6A$	60			
Gain-Bandwidth Product	f_T	$V_{CE}=-2V, I_C=-500mA$		200		MHz
Output Capacitance	C_{ob}	$V_{CB}=-10V, f=1MHz$		85		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-5A, I_B=-250mA$	-220	-400		V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=-5A, I_B=-250mA$	-1	-1.3		V

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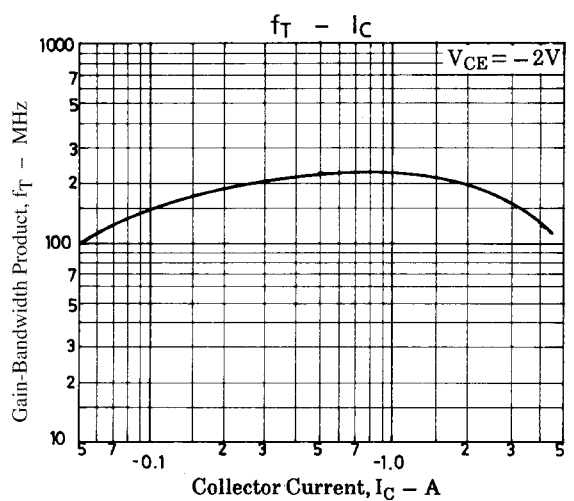
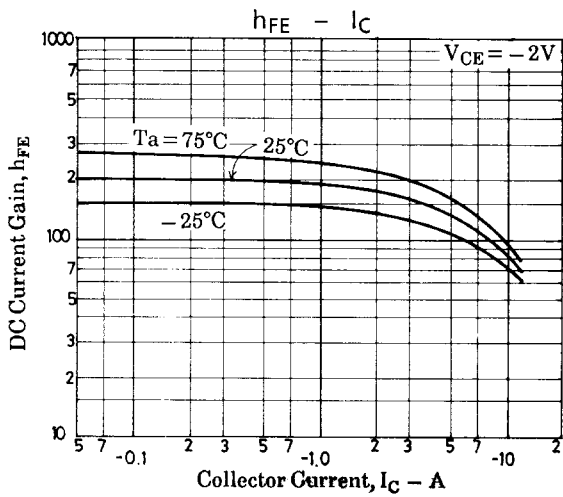
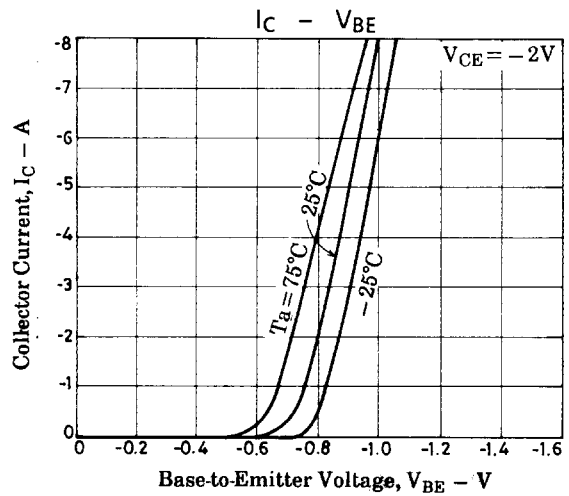
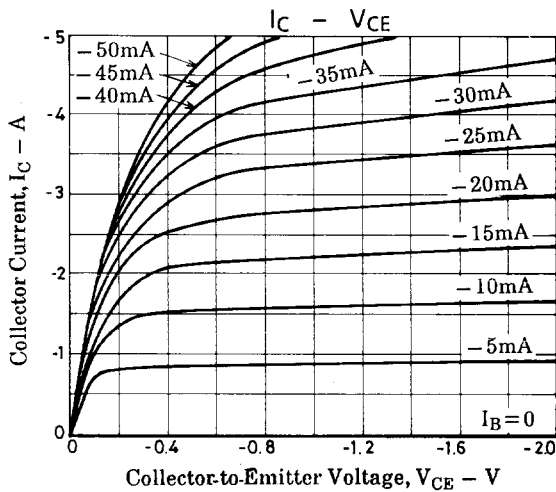
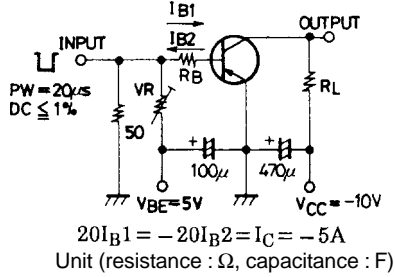
2SA1823

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
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		30		ns
Storage Time	t_{stg}	See specified Test Circuit		200		ns
Fall Time	t_f	See specified Test Circuit		15		ns

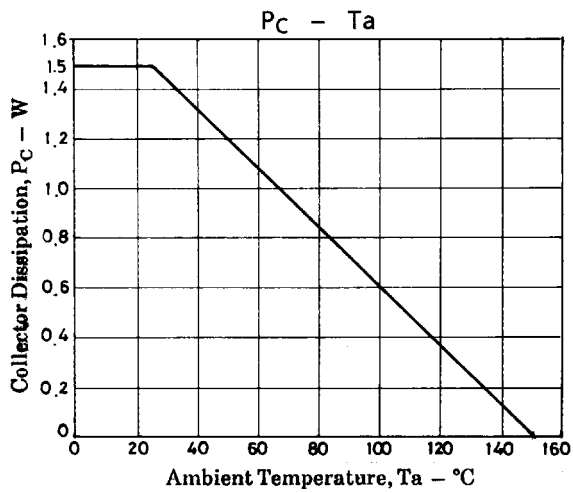
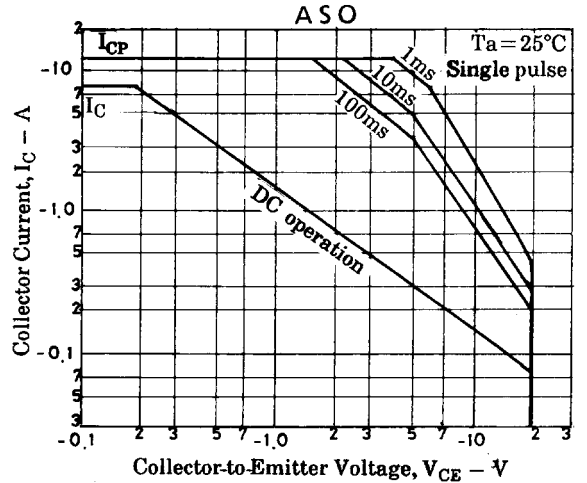
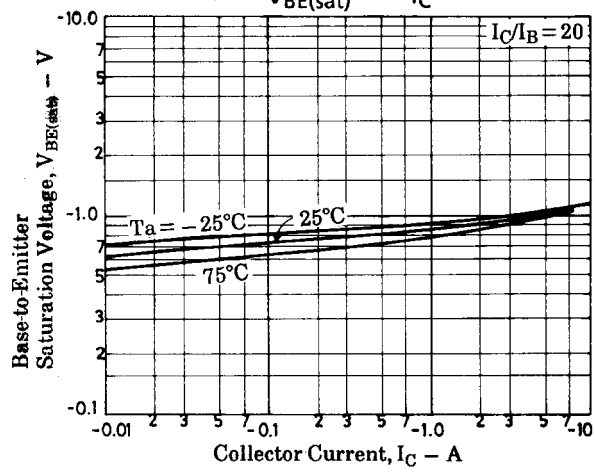
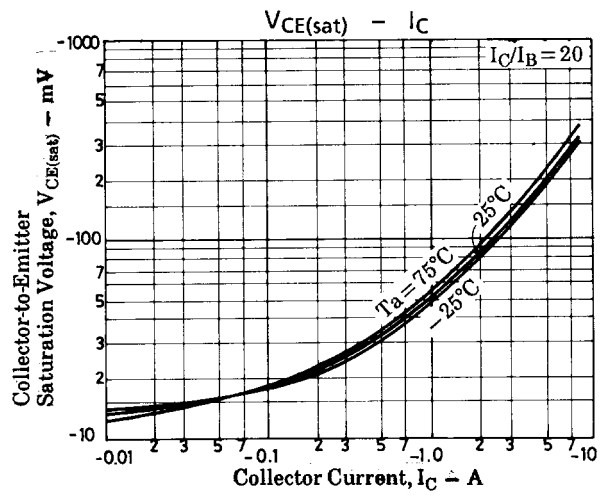
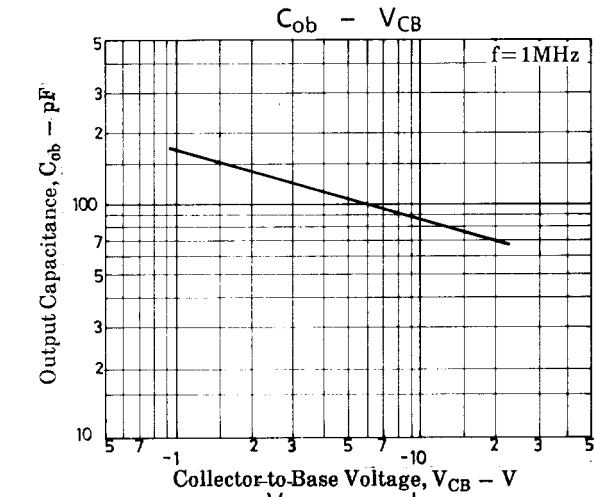
* : The 2SA1823 is classified by 500mA h_{FE} as follows :

100	R	200	140	S	280	200	T	400
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Switching Time Test Circuit



2SA1823



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