

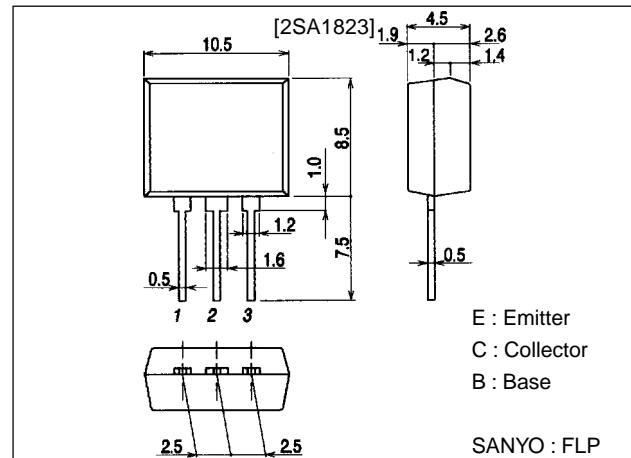
**2SA1823****20V/8A Switching Applications****Features**

- 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	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=-4V, I_C=0$			-1	$\mu A$
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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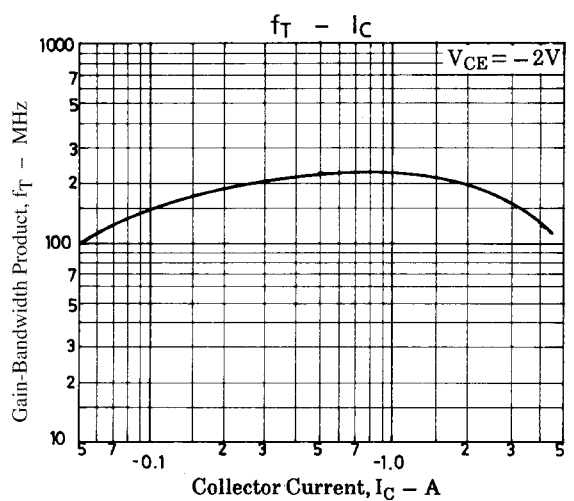
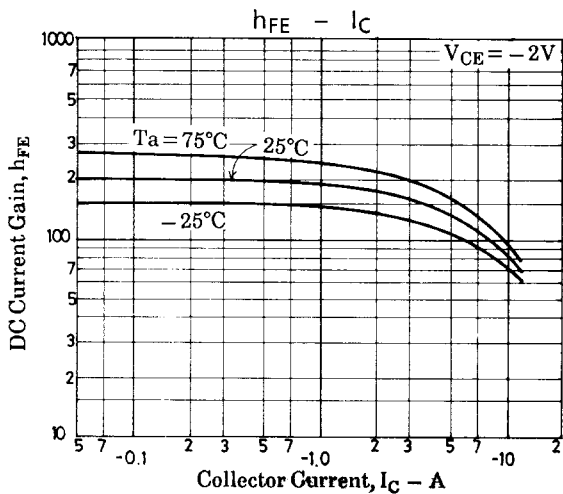
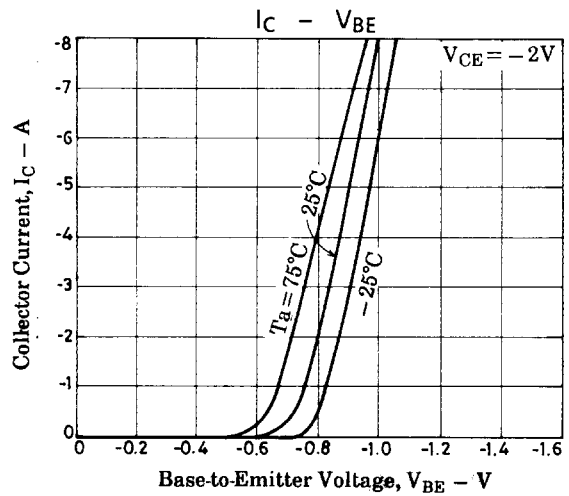
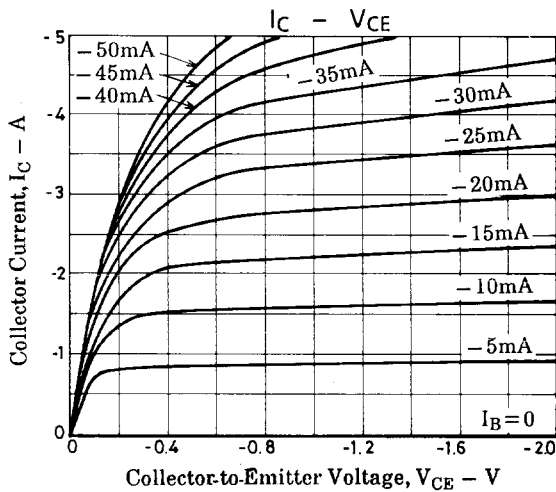
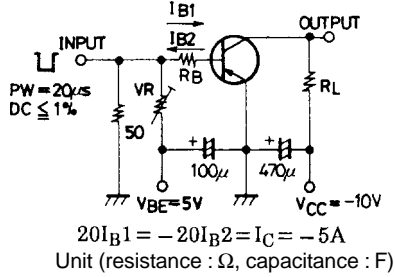
# 2SA1823

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

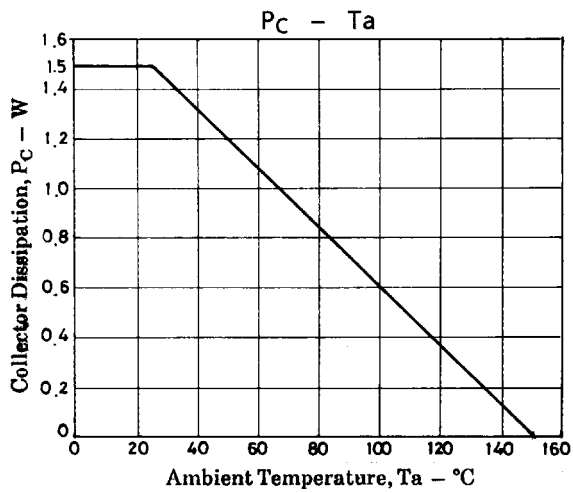
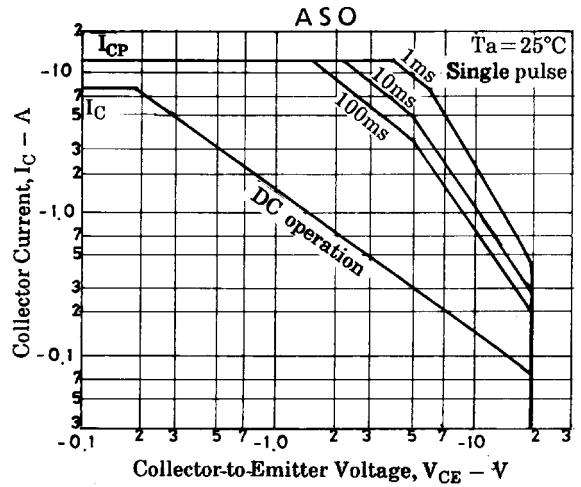
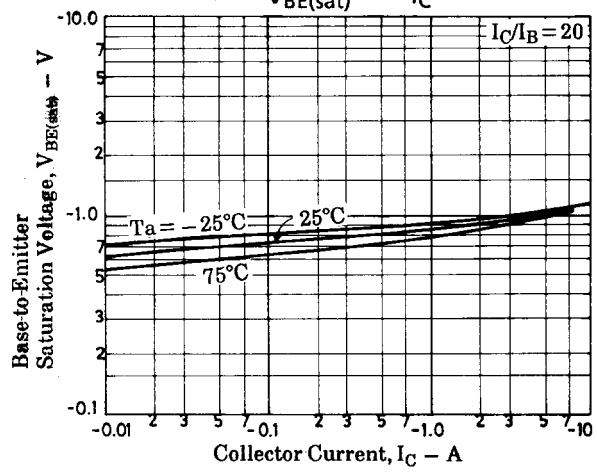
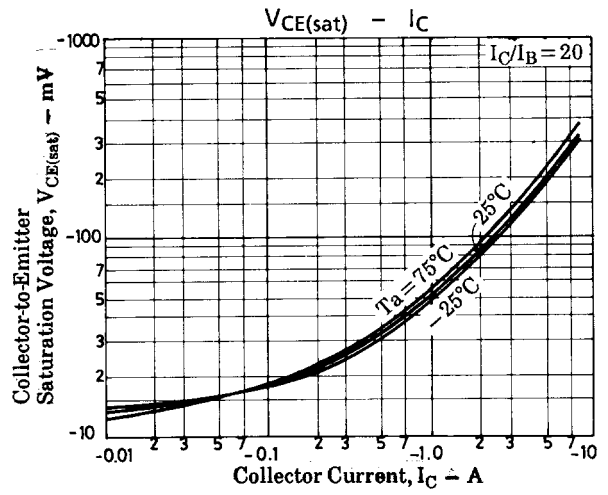
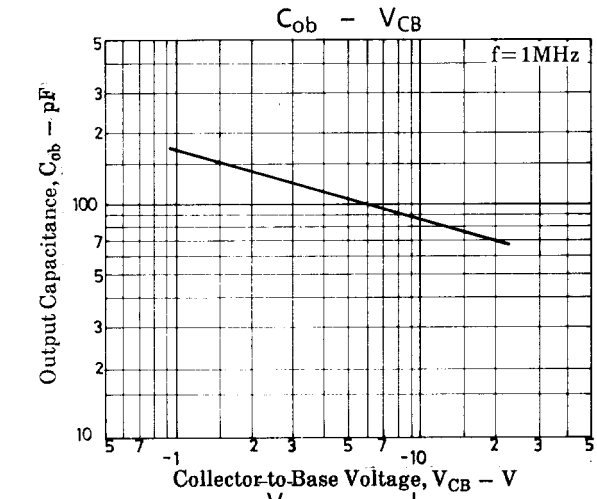
\* : The 2SA1823 is classified by 500mA  $h_{FE}$  as follows :

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



# 2SA1823



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