Ordering number:EN3870

PNP Epitaxial Planar Silicon Transistor

2SA1823

20V/8A Switching Applications

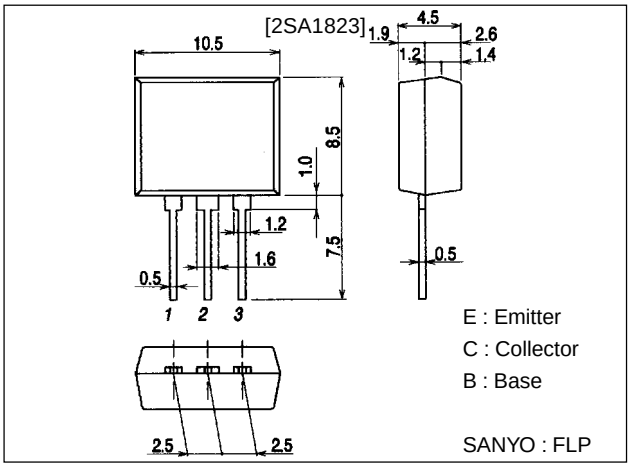
Features

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

Package Dimensions

unit:mm

2084



Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		–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	Tj		150	˚C
Storage Temperature	Tstg		–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	$h_{FE}1$	V_{CE}=–2V, I_C=–500mA	100*		400*	
	$h_{FE}2$	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

SANYO Electric Co.,Ltd. Semiconductor Bussiness Headquaters

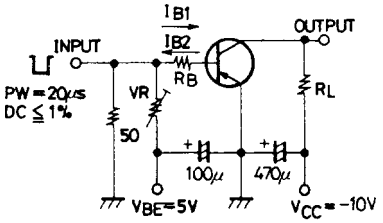
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=(–)10μA, I_E=0	–25			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=(–)1mA, R_{BE}=∞	–20			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=(–)10μA, 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 :

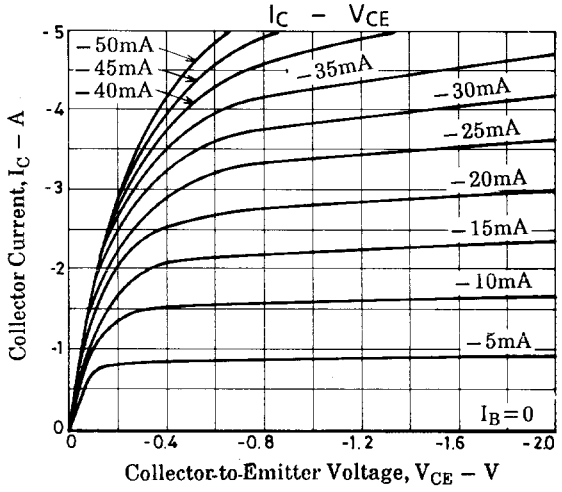
100 R 200	140 S 280	200 T 400

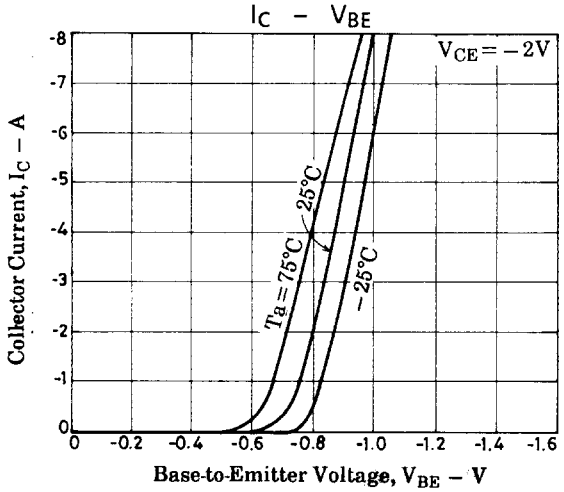
Switching Time Test Circuit

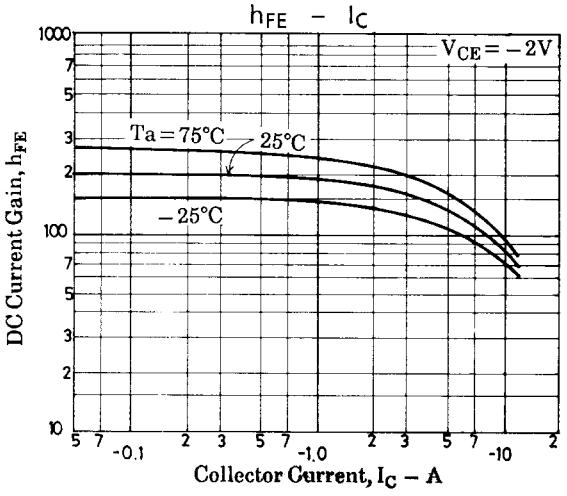


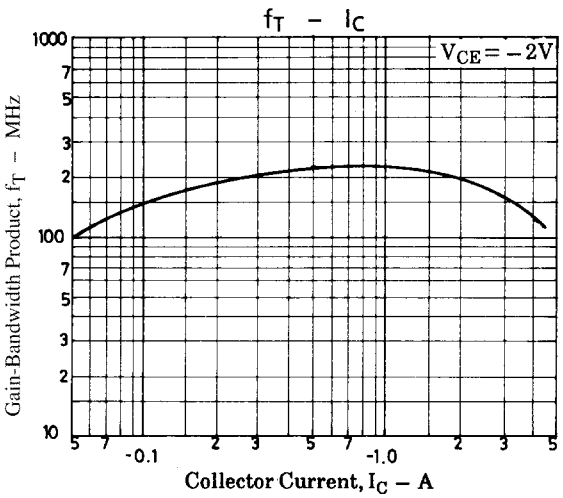
$20I_B1 = -20I_B2 = I_C = -5A$

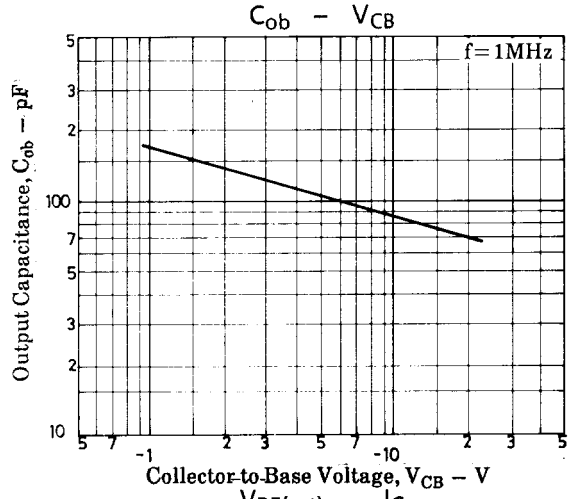
Unit (resistance : Ω, capacitance : F)

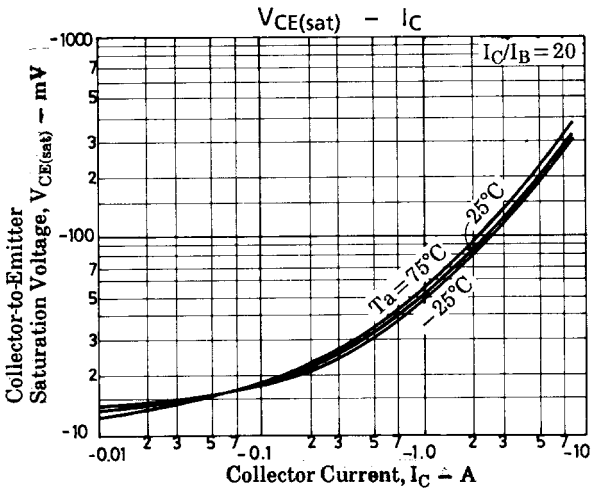


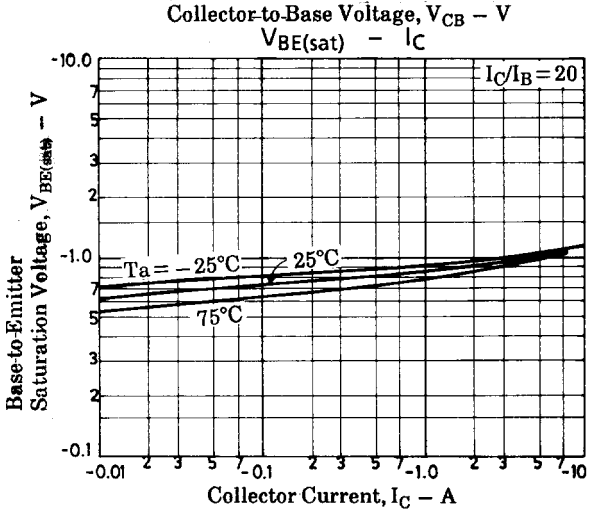


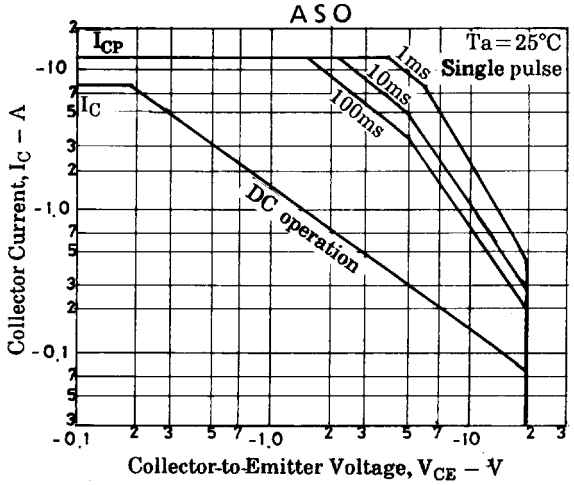


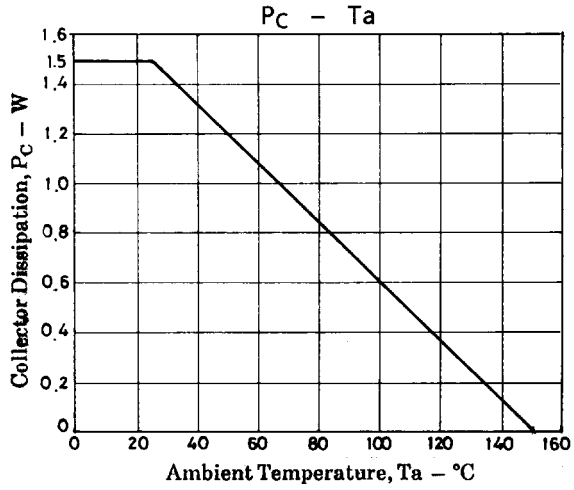



Cob – VCB
f=1MHz
Output Capacitance, Cob – pF
Collector-to-Base Voltage, VCB – V


VCE(sat) – IC
IC/IB=20
Collector-to-Emitter Saturation Voltage, VCE(sat) – mV
Ta=75°C
25°C
–25°C
Collector Current, IC – A


VBE(sat) – IC
IC/IB=20
Base-to-Emitter Saturation Voltage, VBE(sat) – V
Ta=–25°C
25°C
75°C
Collector Current, IC – A


ASO
ICP
IC
Ta=25°C
Single pulse
1ms
10ms
100ms
DC operation
Collector Current, IC – A
Collector-to-Emitter Voltage, VCE – V


PC – Ta
Collector Dissipation, PC – W
Ambient Temperature, Ta – °C