

High-speed Switching Transistor (−60V, −5A)

2SA1952 / 2SA1906 / 2SA2006

●Features

- 1) High speed switching. (tf : Typ. 0.15 μs at Ic = −3A)
- 2) Low VCE(sat). (Typ. −0.2V at Ic / Ib = −3 / −0.15A)
- 3) Wide SOA. (safe operating area)
- 4) Complements the 2SC5103 / 2SC5525.

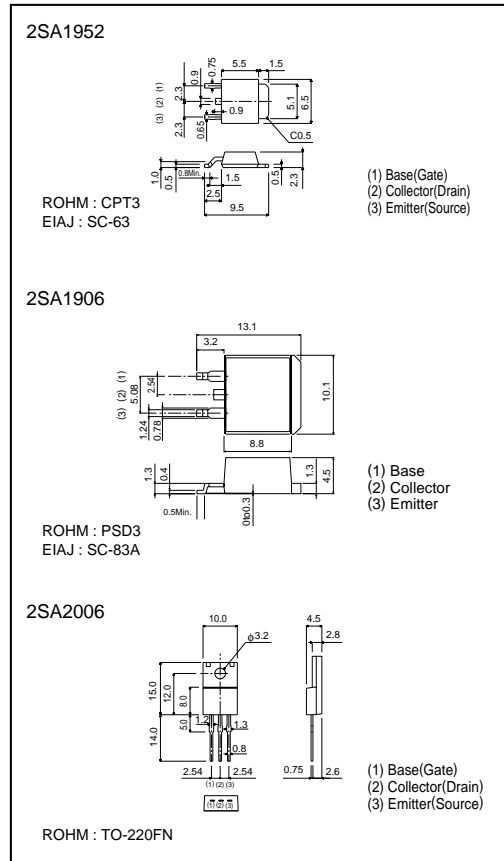
●Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V _{CB0}	−100	V
Collector-emitter voltage	V _{CE0}	−60	V
Emitter-base voltage	V _{EB0}	−5	V
Collector current	I _c	−5	A
		−10	A(Pulse)
Collector power dissipation	P _c	1	W
		10	W(T _c = 25°C)
		1.5	W
		25	W(T _c = 25°C)
		2	W
Junction temperature	T _j	150	°C
Storage temperature	T _{stg}	−55 ~ +150	°C

●Packaging specifications and hFE

Type	2SA1952	2SA1906	2SA2006
Package	CPT3	PSD3	TO-220FN
hFE	Q	DEF	EF
Code	TL	TL	—
Basic ordering unit (pieces)	2500	1000	500

●External dimensions (Units : mm)



●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV _{CB0}	−100	—	—	V	I _c = −50μA
Collector-emitter breakdown voltage	BV _{CE0}	−60	—	—	V	I _c = −1mA
Emitter-base breakdown voltage	BV _{EB0}	−5	—	—	V	I _e = −50μA
Collector cutoff current	I _{cBO}	—	—	−10	μA	V _{CB} = −100V
Emitter cutoff current	I _{eBO}	—	—	−10	μA	V _{EB} = −5V
Collector-emitter saturation voltage	V _{CE(sat)}	—	—	−0.3	V	I _c /I _B = −3A/−0.15A
		—	—	−0.5	V	I _c /I _B = −4A/−0.2A
Base-emitter saturation voltage	V _{BE(sat)}	—	—	−1.2	V	I _c /I _B = −3A/−0.15A
		—	—	−1.5	V	I _c /I _B = −4A/−0.2A
DC current transfer ratio	2SA1952	120	—	270	—	V _{CE} = −2V, I _c = −1A
	2SA1906	60	—	320	—	
	2SA2006	100	—	320	—	
Transition frequency	f _t	—	80	—	MHz	V _{CE} = −10V, I _e = 0.5A, f = 30MHz
Output capacitance	C _{ob}	—	130	—	pF	V _{CB} = −10V, I _e = 0A, f = 1MHz
Turn-on time	t _{on}	—	—	0.3	μs	I _c = −3A, R _L = 10Ω
Storage time	t _{stg}	—	—	1.5	μs	I _{B1} = −I _{B2} = −0.15A
Fall time	t _f	—	—	0.3	μs	V _{CE} = −30V