

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

2SA1952

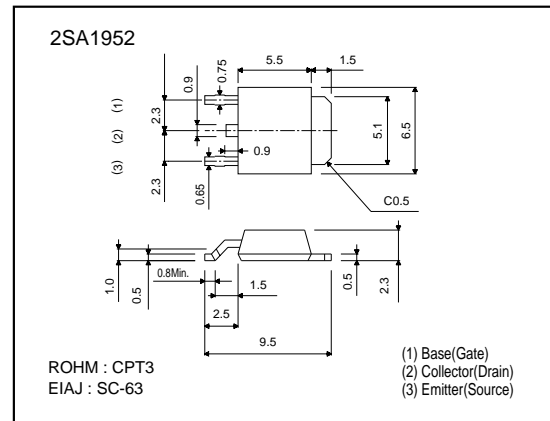
●Features

- 1) High speed switching. (tf : Typ. 0.15 μ s at $I_c = -3A$)
- 2) Low $V_{CE(sat)}$. (Typ. –0.2V at $I_c/I_B = -3/-0.15A$)
- 3) Wide SOA. (safe operating area)
- 4) Complements the 2SC5103.

●Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	–100	V
Collector-emitter voltage	V_{CEO}	–60	V
Emitter-base voltage	V_{EBO}	–5	V
Collector current	I_c	–5	A
		–10	A(Pulse)
Collector power dissipation	P_c	1	W
		10	W($T_C=25^\circ\text{C}$)
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	–55–+150	$^\circ\text{C}$

●External dimensions (Units : mm)



●Packaging specifications and hFE

Type	2SA1952
Package	CPT3
hFE	Q
Code	TL
Basic ordering unit (pieces)	2500

●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	–100	–	–	V	$I_c = -50\mu\text{A}$
Collector-emitter breakdown voltage	BV_{CEO}	–60	–	–	V	$I_c = -1\text{mA}$
Emitter-base breakdown voltage	BV_{EBO}	–5	–	–	V	$I_E = -50\mu\text{A}$
Collector cutoff current	I_{cbo}	–	–	–10	μA	$V_{CB} = -100\text{V}$
Emitter cutoff current	I_{ebo}	–	–	–10	μA	$V_{EB} = -5\text{V}$
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	hFE	120	–	270	–	$V_{CE} = -2\text{V}$, $I_c = -1\text{A}$
Transition frequency	fr	–	80	–	MHz	$V_{CE} = -10\text{V}$, $I_E = 0.5\text{A}$, $f = 30\text{MHz}$
Output capacitance	Cob	–	130	–	pF	$V_{CB} = -10\text{V}$, $I_E = 0\text{A}$, $f = 1\text{MHz}$
Turn-on time	ton	–	–	0.3	μs	$I_c = -3\text{A}$, $R_L = 10\Omega$
Storage time	tstg	–	–	1.5	μs	$I_{B1} = -I_{B2} = -0.15\text{A}$
Fall time	tf	–	–	0.3	μs	$V_{CC} = -30\text{V}$

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