

−1A / −60V Bipolar transistor

2SA2092**●Features**

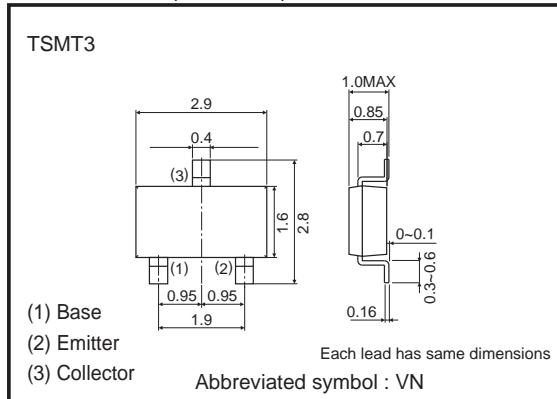
- 1) High speed switching. (tf : Typ. : 30ns at $I_c = -1A$)
- 2) Low saturation voltage.
(Typ. : −200mV at $I_c = -500mA$, $I_b = -50mA$)
- 3) Strong discharge resistance for inductive load and capacitance load.
- 4) Low switching noise.

●Applications

High-speed switching, low frequency amplification

●Structure

PNP epitaxial planar silicon transistor

●Dimensions (Unit : mm)**●Packaging specifications**

	Package	TSMT3
	Packaging type	Taping
	Code	TL
Part No.	Basic ordering unit (pieces)	3000
2SA2092		○

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	−60	V
Collector-emitter voltage	V_{CEO}	−60	V
Emitter-base voltage	V_{EBO}	−6	V
Collector current	DC	I_c	A
	PULSE	I_{CP} *1	A
Power dissipation	P_c *2	500	mW
Junction temperature	T_j	150	°C
Range of storage temperature	T_{stg}	−55 to +150	°C

*1 $P_w=10ms$

*2 Each terminal mounted on a recommended land

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-emitter breakdown voltage	BV _{CEO}	-60	—	—	V	I _c = -1mA
Collector-base breakdown voltage	BV _{CBO}	-60	—	—	V	I _c = -100μA
Emitter-base breakdown voltage	BV _{EBO}	-6	—	—	V	I _e = -100μA
Collector cut-off current	I _{cbo}	—	—	-1.0	μA	V _{CB} = -40V
Emitter cut-off current	I _{ebo}	—	—	-1.0	μA	V _{EB} = -4V
Collector-emitter saturation voltage	V _{CE(sat)}	—	-200	-500	mV	I _c = -500mA, I _b = -50mA
DC current gain	h _{FE} *3	120	—	270	—	V _{CE} = -2V, I _c = -100mA
Transition frequency	f _T *1	—	300	—	MHz	V _{CE} = -10V, I _e =100mA, f=10MHz
Collector output capacitance	C _{ob}	—	15	—	pF	V _{CB} = -10V, I _e =0, f=1MHz
Turn-on time	t _{on}	—	30	—	ns	I _c = -1A, I _{b1} = -100mA I _{b2} =100mA V _{cc} = -25V
Storage time	t _{stg}	—	100	—	ns	
Fall time	t _f *2	—	30	—	ns	

*1 Pulse measurement

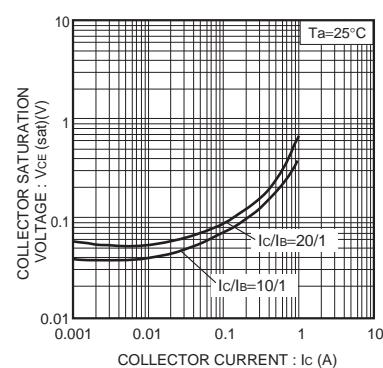
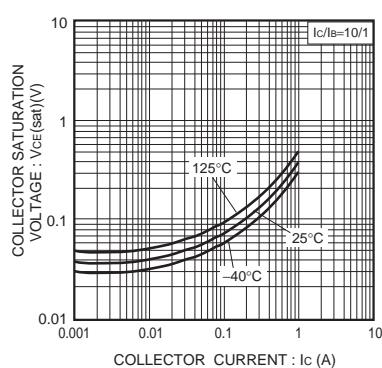
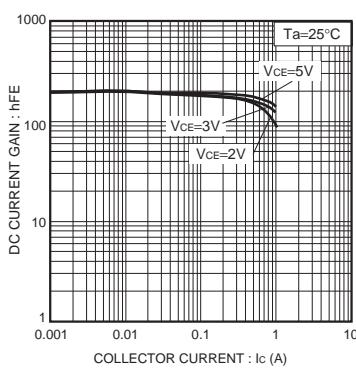
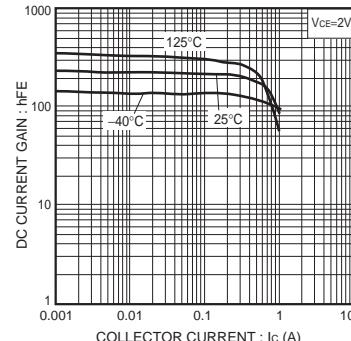
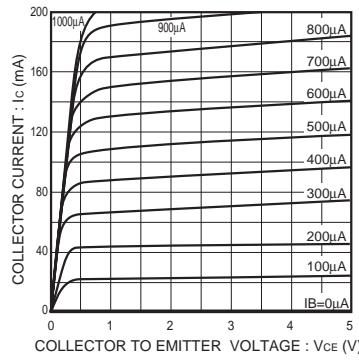
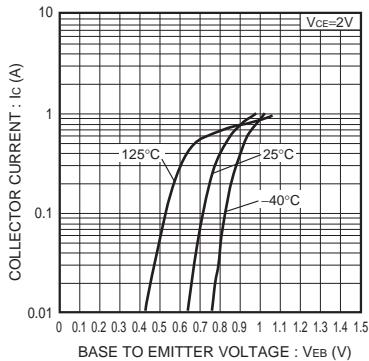
*2 See switching test circuit

*3 h_{FE} rank●h_{FE} RANK

Q

120-270

●Electrical characteristic curves



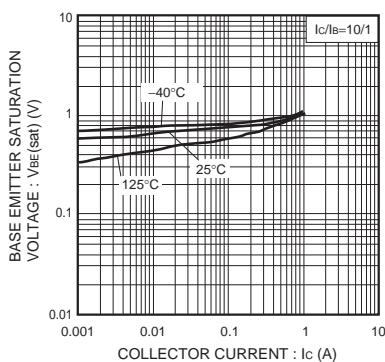


Fig.7 Base-emitter saturation voltage vs. collector current

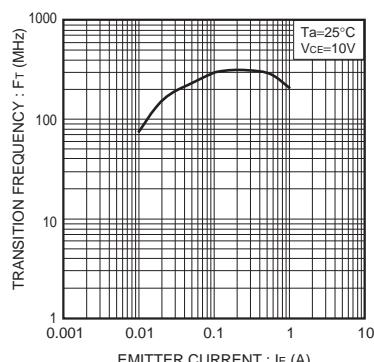


Fig.8 Transition frequency

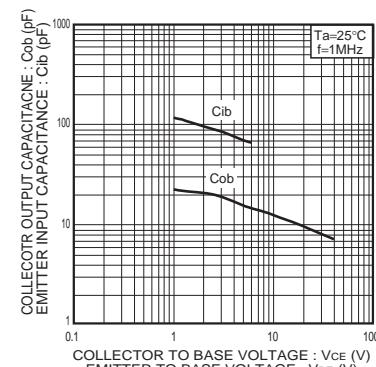
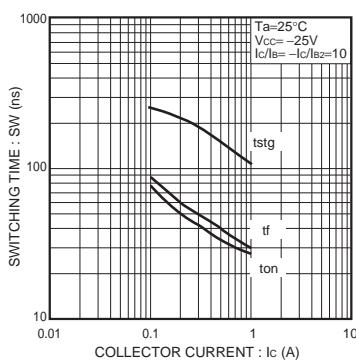
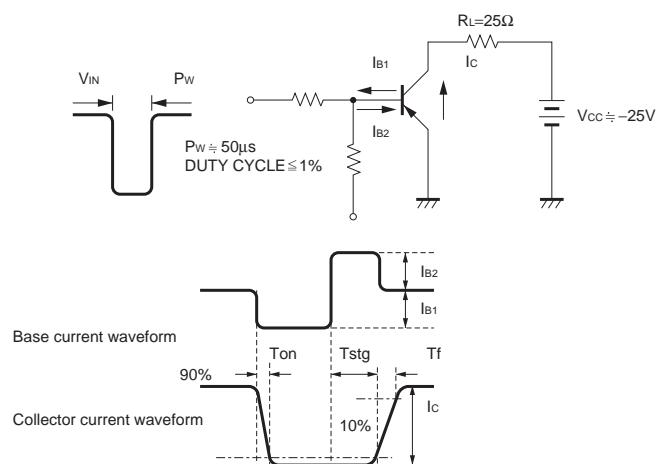
Fig.9 Collector output capacitance
Emitter input capacitance

Fig.10 Switching Time

●Switching characteristics measurement circuits



Notes

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