

Medium power transistor (−60V, −2A)

2SA2094

●Features

- 1) High speed switching.
(Tf : Typ. : 30ns at Ic = −2A)
- 2) Low saturation voltage, typically
(Typ. : −200mV at Ic = −1A, Ib = −0.1A)
- 3) Strong discharge power for inductive load and capacitance load.
- 4) Complements the 2SC5866

●Applications

Low frequency amplifier
High speed switching

●Structure

PNP Silicon epitaxial planar transistor

●Packaging specifications

Type	Package	Taping
	Code	TL
	Basic ordering unit (pieces)	3000
2SA2094		○

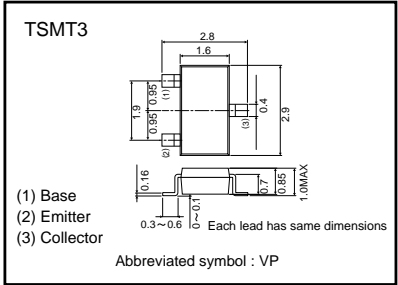
●Absolute maximum ratings (Ta=25°C)

Parameter		Symbol	Limits	Unit
Collector-base voltage		V _{CB0}	−60	V
Collector-emitter voltage		V _{CE0}	−60	V
Emitter-base voltage		V _{EB0}	−6	V
Collector current	DC	I _c	−2	A
	Pulsed	I _{CP}	−4	A *1
Power dissipation		P _C	500	mW *2
Junction temperature		T _j	150	°C
Range of storage temperature		T _{stg}	−55 to 150	°C

*1 Pw=10ms

*2 Each terminal mounted on a recommended land

●External dimensions (Unit : mm)



Transistors

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
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 =-1A I _B =-0.1A
DC current gain	h _{FE}	120	-	270	-	V _{CE} =-2V I _C =-100mA
Transition frequency	f _r	-	300	-	MHz	V _{CE} =-10V I _E =100mA f=10MHz
Corrector output capacitance	C _{ob}	-	25	-	pF	V _{CB} =-10V I _E =0mA f=1MHz
Turn-on time	T _{on}	-	25	-	ns	I _C =-2A I _{B1} =-200mA I _{B2} =200mA V _{CC} =25V
Storage time	T _{stg}	-	100	-	ns	
Fall time	T _f	-	30	-	ns	

*1 Non repetitive pulse

*2 See Switching characteristics measurement circuits

●h_{FE} RANK

Q
120-270

●Electrical characteristic curves

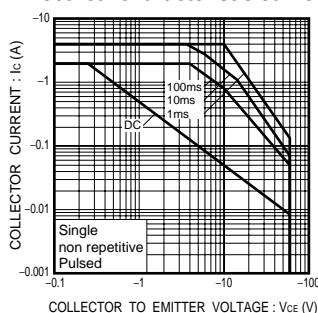


Fig.1 Safe Operating Area

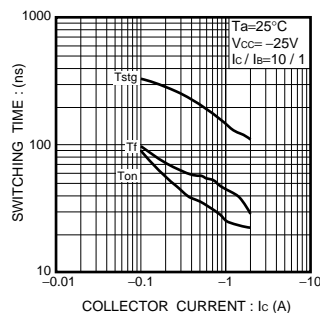


Fig.2 Switching Time

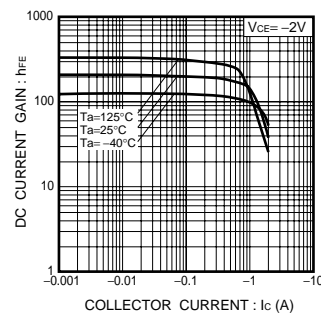


Fig.3 DC Current Gain vs. Collector Current (I)

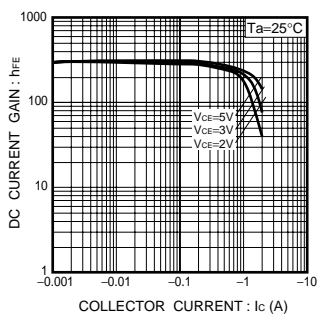


Fig.4 DC Current Gain vs. Collector Current (II)

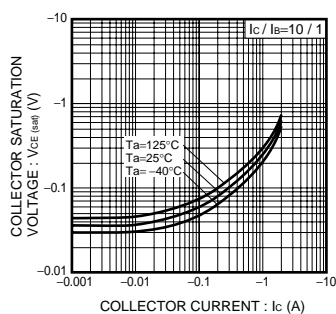


Fig.5 Collector-Emitter Saturation Voltage vs. Collector Current (I)

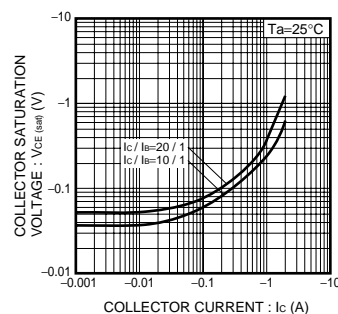


Fig.6 Collector-Emitter Saturation Voltage vs. Collector Current (II)

Transistors

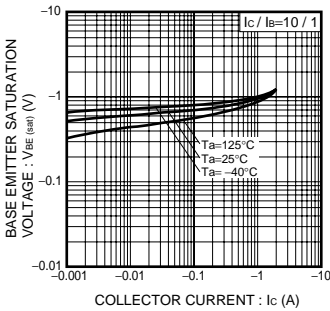


Fig.7 Base-Emitter Saturation Voltage vs. Collector Current

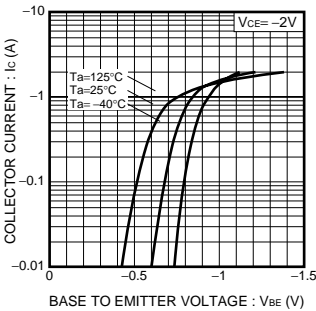


Fig.8 Grounded Emitter Propagation Characteristics

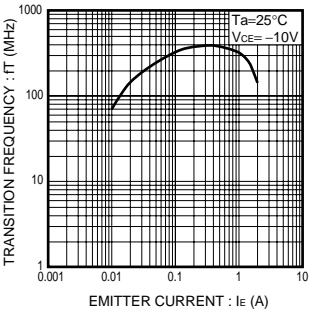


Fig.9 Transition Frequency

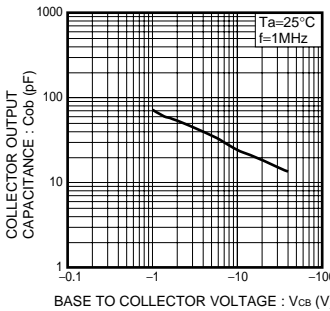
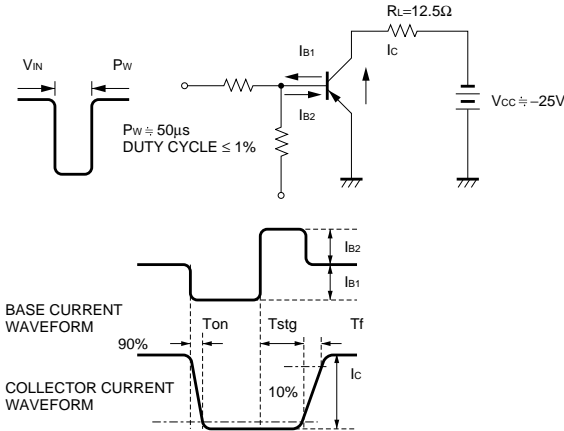


Fig.10 Collector Output Capacitance

●Switching characteristics measurement circuits



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