

Power transistor (−60V, −5A)

2SA2096

●Features

- 1) High speed switching.
(Tf: Typ. : 25ns at Ic = −5A)
- 2) Low saturation voltage, typically
(Typ. : −200mV at Ic = −3A, Ib = −0.3A)
- 3) Strong discharge power for inductive load and capacitance load.
- 4) Complements the 2SC5881

●Applications

Low frequency amplifier
High speed switching

●Structure

PNP Silicon epitaxial planar transistor

●Packaging specifications

Type	Package	Taping
	Code	TL
	Basic ordering unit (pieces)	2500
2SA2096		○

●Absolute maximum ratings (Ta=25°C)

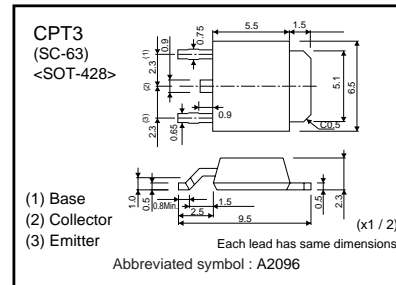
Parameter	Symbol	Limits	Unit
Collector-base voltage	V _{CB0}	−60	V
Collector-emitter voltage	V _{CE0}	−60	V
Emitter-base voltage	V _{EB0}	−6	V
Collector current	DC	I _c	−5.0 A
	Pulsed	I _{cP}	−10.0 A *1
Power dissipation	P _c	1.0	W *2
		10.0	W *3
Junction temperature	T _j	150	°C
Range of storage temperature	T _{stg}	−55 to 150	°C

*1 P_w=100ms

*2 Ta=25°C

*3 Tc=25°C

●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	$I_C = -100\mu A$
Emitter-base breakdown voltage	BV_{EBO}	-6	-	-	V	$I_E = -100\mu A$
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	$I_C = -3mA$ $I_B = -0.3mA$
DC current gain	h_{FE}	120	-	270	-	$V_{CE} = -2V$ $I_C = -100mA$
Transition frequency	f_T	-	170	-	MHz	$V_{CE} = -10V$ $I_E = 100mA$ $f = 10MHz$
Corrector output capacitance	C_{ob}	-	75	-	pF	$V_{CB} = -10V$ $I_E = 0mA$ $f = 1MHz$
Turn-on time	T_{on}	-	25	-	ns	$I_C = -5.0A$ $I_{B1} = -500mA$ $I_{B2} = 500mA$ $V_{CC} = -25V$
Storage time	T_{stg}	-	130	-	ns	
Fall time	T_f	-	25	-	ns	

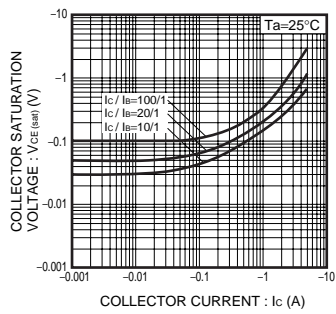
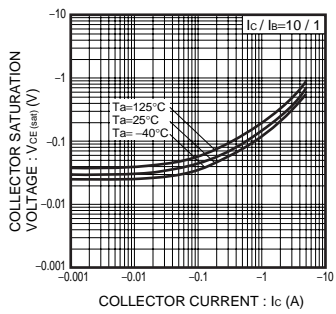
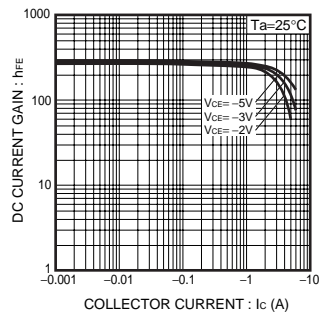
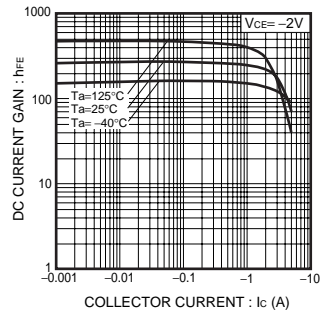
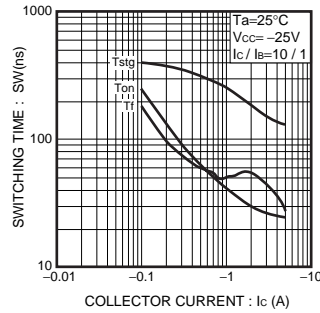
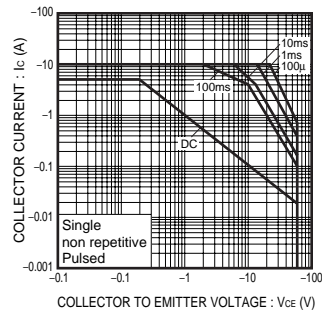
*1 Non repetitive pulse

*2 See Switching characteristics measurement circuits

● h_{FE} RANK

Q
120-270

●Electrical characteristic curves



Transistors

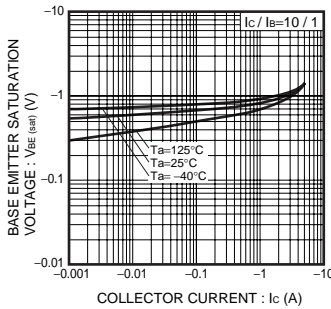


Fig.7 Base-Emitter Saturation Voltage vs. Collector Current

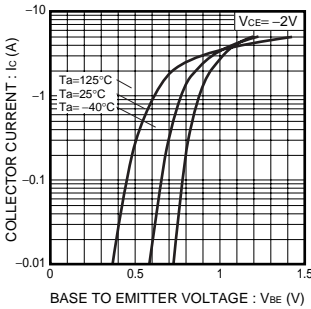


Fig.8 Grounded Emitter Propagation Characteristics

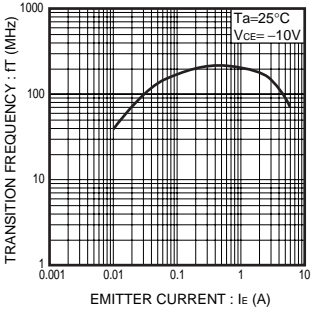


Fig.9 Transition Frequency

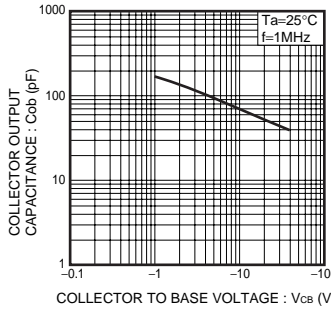
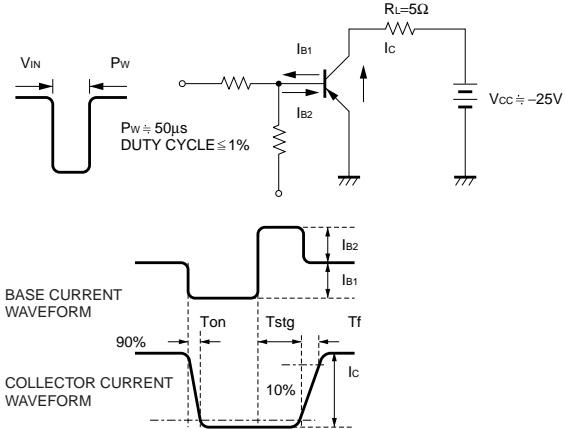


Fig.10 Collector Output Capacitance

● Switching characteristics measurement circuits



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