

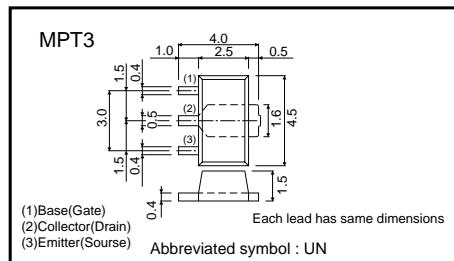
Power transistor (-60V, -3A)

2SA2071

●Features

- 1) High speed switching. (T_f : Typ. : 20ns at I_c = -3A)
- 2) Low saturation voltage, typically
(Typ. : -200mV at I_c = -2A, I_b = -0.2A)
- 3) Strong discharge power for inductive load and capacitance load.
- 4) Complements the 2SC5824

●External dimensions (Units : mm)



●Applications

Low Frequency Amplifier

High speed switching

●Structure

PNP Silicon epitaxial planar transistor

●Packaging specifications

Type	Package	Taping
	Code	T100
	Basic ordering unit (pieces)	1000
2SA2071	○	

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V _{CBO}	-60	V
Collector-emitter voltage	V _{C EO}	-60	V
Emitter-base voltage	V _{EBO}	-6	V
Collector current	I _c	-3	A
	I _{CP}	-6	A *1
Power dissipation	P _c	500	mW
		2.0	W *2
Junction temperature	T _j	150	°C
Range of storage temperature	T _{stg}	-55~+150	°C

*1 P_w=100ms

*2 Mounted on a 40×40×0.7 (mm) ceramic substrate

Transistor

●Electrical characteristics ($T_a=25^\circ C$)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	-60	—	—	V	$I_c=-100\mu A$
Collector-emitter breakdown voltage	BV_{CEO}	-60	—	—	V	$I_c=-1mA$
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	$V_{CE(\text{sat})}$	—	-200	-500	mV	$I_c=-2A, I_e=-0.2A$ *1
DC current gain	h_{FE}	120	—	390	—	$V_{CE}=-2V, I_c=-100mA$
Transition frequency	f_T	—	180	—	MHz	$V_{CE}=-10V, I_e=10mA, f=10MHz$ *1
Collector output capacitance	C_{OB}	—	50	—	pF	$V_{CB}=-10V, I_e=0mA, f=1MHz$
Turn-on time	T_{on}	—	20	—	ns	$I_c=-3A$
Storage time	T_{stg}	—	150	—	ns	$I_{B1}=-300mA$
Fall time	T_f	—	20	—	ns	$I_{B2}=300mA$
						$V_{CC}=-25V$ *2

*1 Non repetitive pulse

*2 See switching characteristics measurement circuits

● h_{FE} RANK

Q
120-270

●Electrical characteristic curves

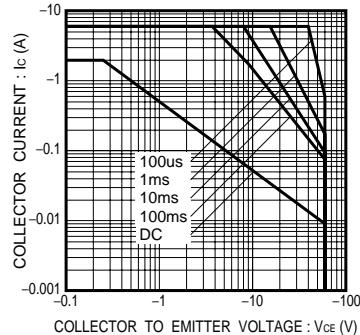


Fig.1 Safe Operating Area

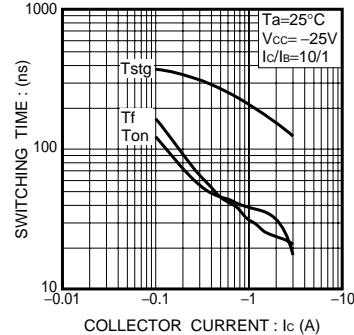


Fig.2 Switching Time

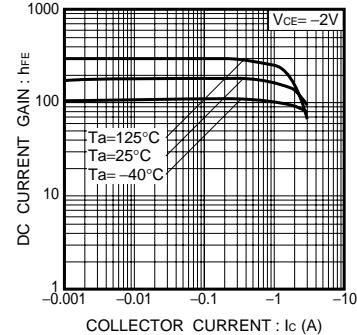


Fig.3 DC Current Gain vs. Collector Current (I)

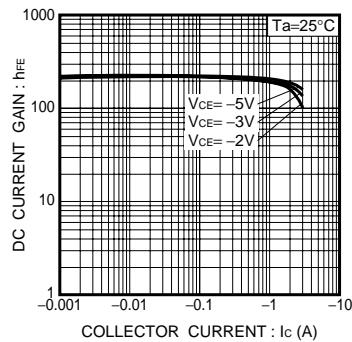


Fig.4 DC Current Gain vs. Collector Current (II)

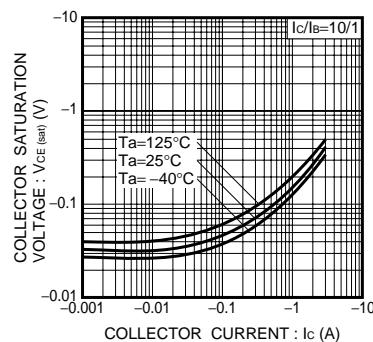


Fig.5 Collector-Emitter Saturation Voltage vs. Collector Current (I)

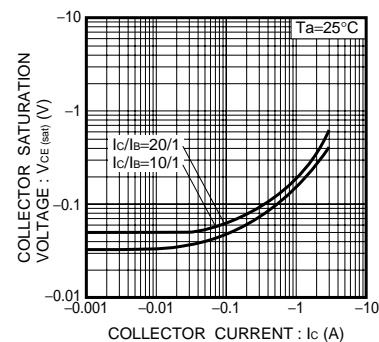


Fig.6 Collector-Emitter Saturation Voltage vs. Collector Current (II)

Transistor

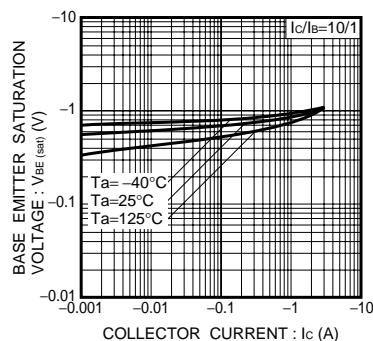


Fig.7 Base-Emitter Saturation Voltage vs. Collector Current

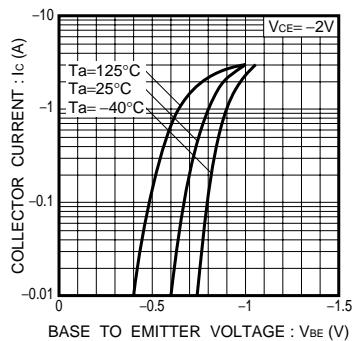


Fig.8 Grounded Emitter Propagation Characteristics

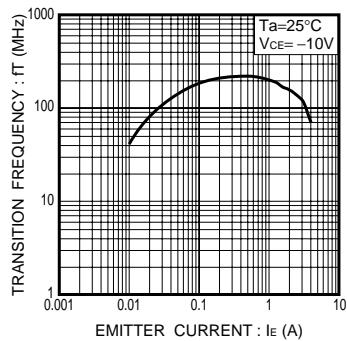


Fig.9 Transition Frequency

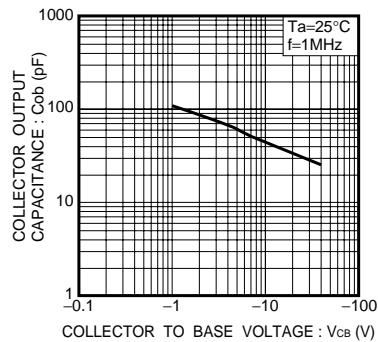
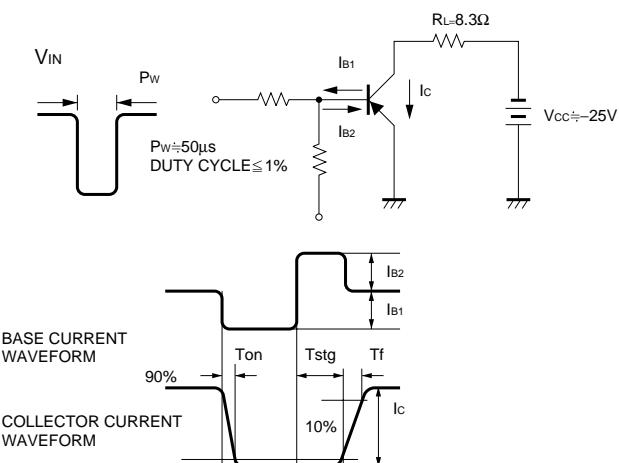


Fig.10 Collector Output Capacitance

●Switching characteristics measurement circuits



Appendix

Notes

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