

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

●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		○

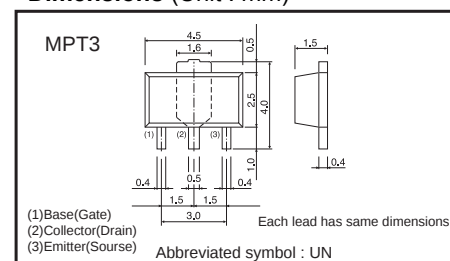
●Absolute maximum ratings ($T_a=25^{\circ}C$)

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	I_c	–3	A
	I_{CP}	–6	A *1
Power dissipation	P_c	500	mW
		2.0	W *2
Junction temperature	T_j	150	$^{\circ}C$
Range of storage temperature	T_{stg}	–55 to +150	$^{\circ}C$

*1 $P_W=100ms$

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

●Dimensions (Unit : mm)



●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV _{CBO}	-60	-	-	V	I _C = -100μA
Collector-emitter breakdown voltage	BV _{CEO}	-60	-	-	V	I _C = -1mA
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 = -2A, I _B = -0.2A *1
DC current gain	h _{FE}	120	-	270	-	V _{CE} = -2V, I _C = -100mA
Transition frequency	f _r	-	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 I _{B1} = -300mA
Storage time	T _{stg}	-	150	-	ns	I _{B2} = 300mA
Fall time	T _f	-	20	-	ns	V _{CC} ≈ -25V *2

*1 Non repetitive pulse

*2 See switching characteristics measurement circuits

●h_{FE} RANK

Q
120-270

●Electrical characteristic curves

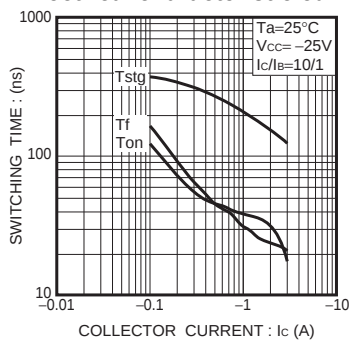


Fig.1 Switching Time

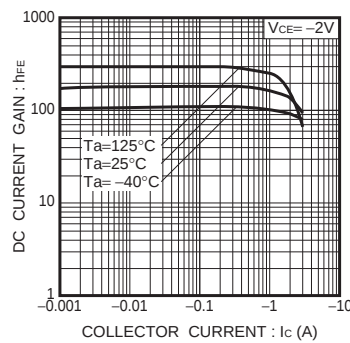


Fig.2 DC Current Gain vs. Collector Current (I)

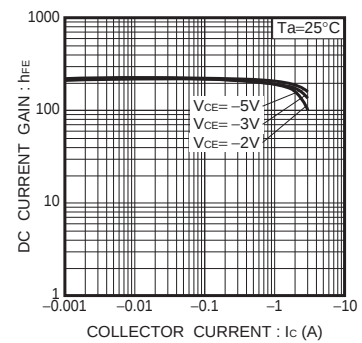


Fig.3 DC Current Gain vs. Collector Current (II)

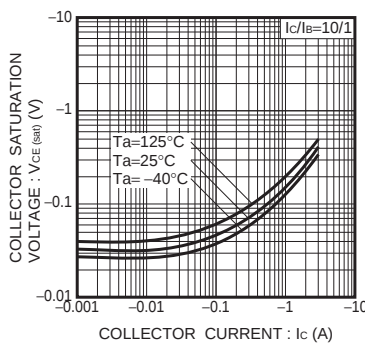


Fig.4 Collector-Emitter Saturation Voltage vs. Collector Current (I)

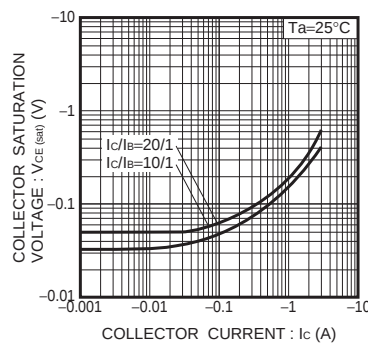


Fig.5 Collector-Emitter Saturation Voltage vs. Collector Current (II)

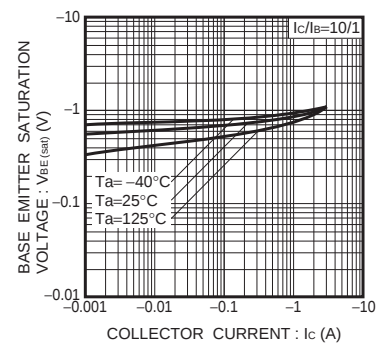


Fig.6 Base-Emitter Saturation Voltage vs. Collector Current

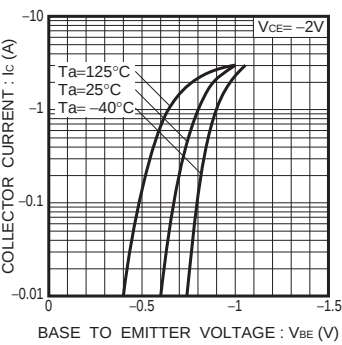


Fig.7 Grounded Emitter Propagation Characteristics

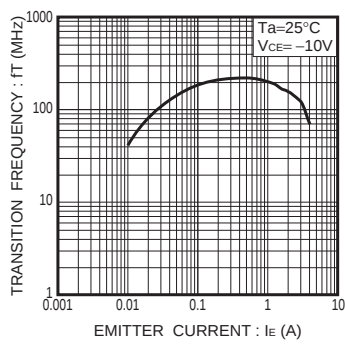


Fig.8 Transition Frequency

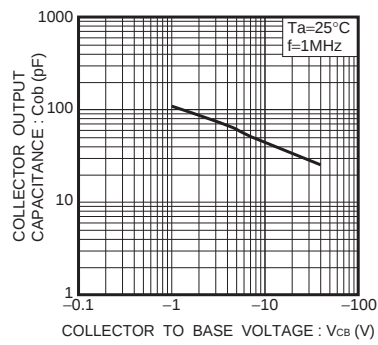
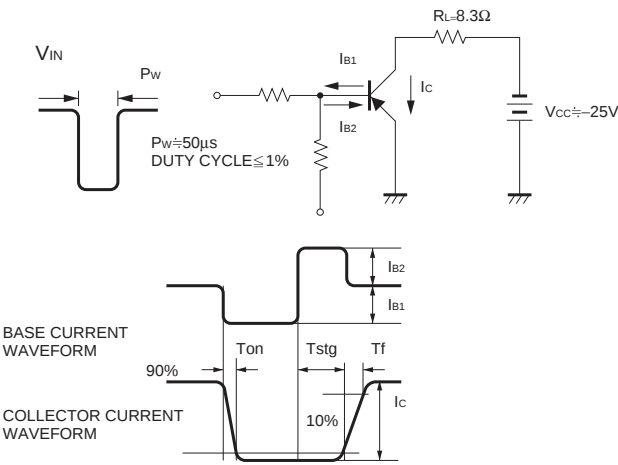


Fig.9 Collector Output Capacitance

●Switching characteristics measurement circuits



Notes

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