

High voltage discharge, High speed switching, Low Noise (–60V, –3A)

2SA2072

●Features

- 1) High speed switching. (Tf: Typ.: 20ns at Ic=–3A)
- 2) Low saturation voltage, typically.
(Typ.: –200mV at Ic=–2.0A, Ib=–200mA)
- 3) Strong discharge power for inductive load and capacitance load.
- 4) Low Noise.
- 5) Complements the 2SC5825.

●Applications

High speed switching, Low noise

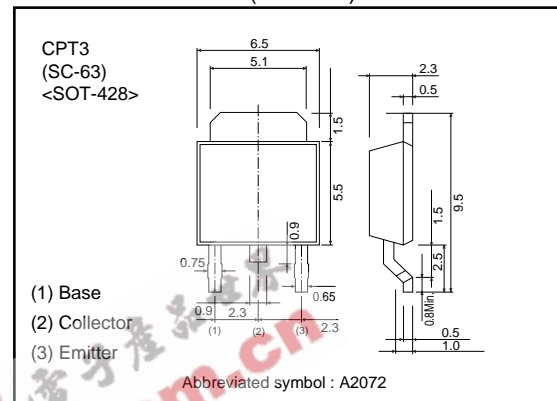
●Structure

PNP silicon epitaxial planar transistor

●Packaging specifications

Type	Package	Taping
	Code	TL
	Basic ordering unit (pieces)	2500
2SA2072		○

●External dimensions (Unit : mm)



●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	–3	A
	Pulsed	I _{cP}	–6	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 T_c=25°C

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} = -20V
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
DC current gain	h _{FE}	120	-	270	-	V _{CE} = -2V I _C = -100mA
Transistor frequency	f _r	-	180	-	MHz	V _{CE} = -10V I _E = 100mA f = 10MHz
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

*1 Non repetitive pulse

*2 See switching characteristics measurement circuits

●h_{FE} RANK

Q
120-270

Transistors

●Electrical characteristics curves

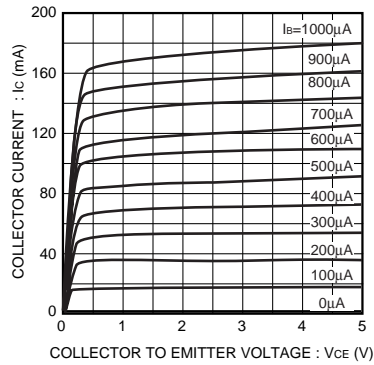


Fig.1 Typical output characteristics

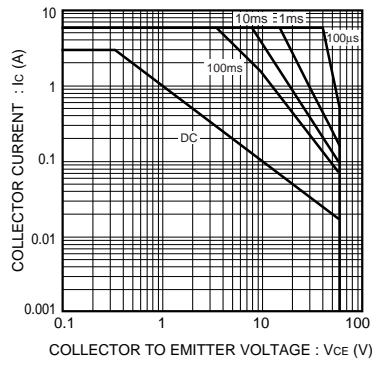


Fig.2 Safe operating area

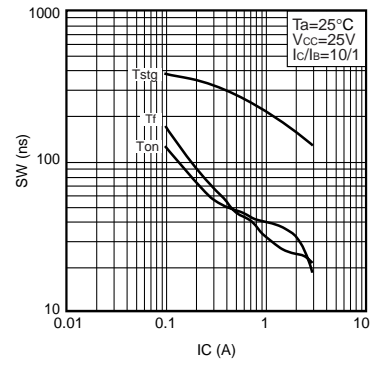


Fig.3 Switching Time

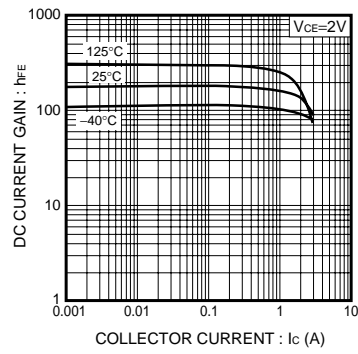


Fig.4 DC current gain vs. collector current (I)

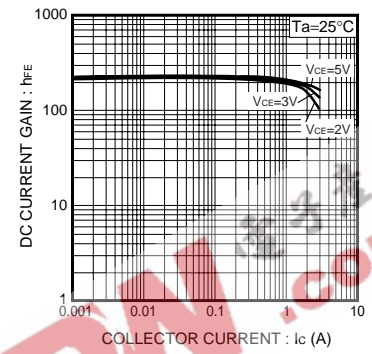


Fig.5 DC current gain vs. collector current (II)

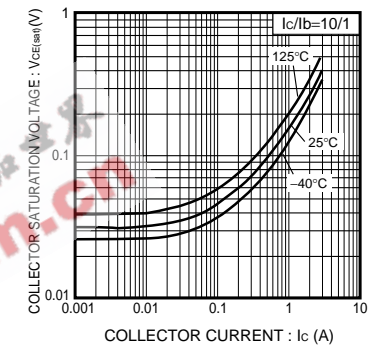


Fig.6 Collector-emitter saturation voltage vs. collector current (I)

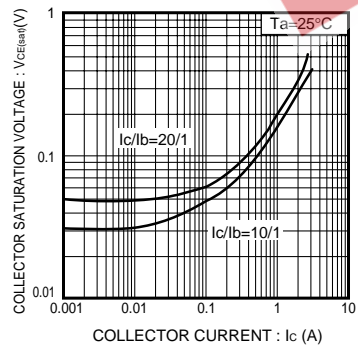


Fig.7 Collector-emitter saturation voltage vs. collector current (II)

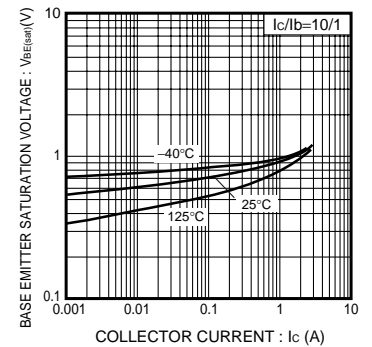


Fig.8 Base-emitter saturation voltage vs. collector current

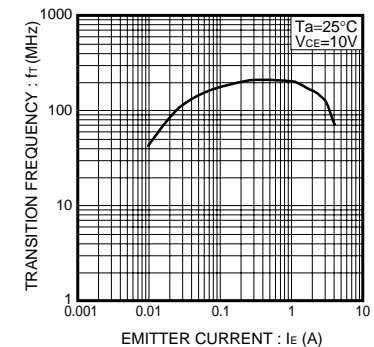


Fig.9 Transition frequency

Transistors

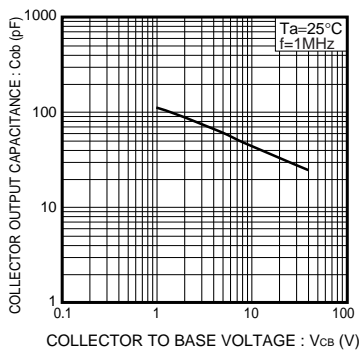


Fig.10 Collector output capacitance

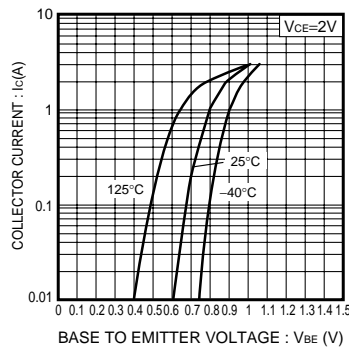
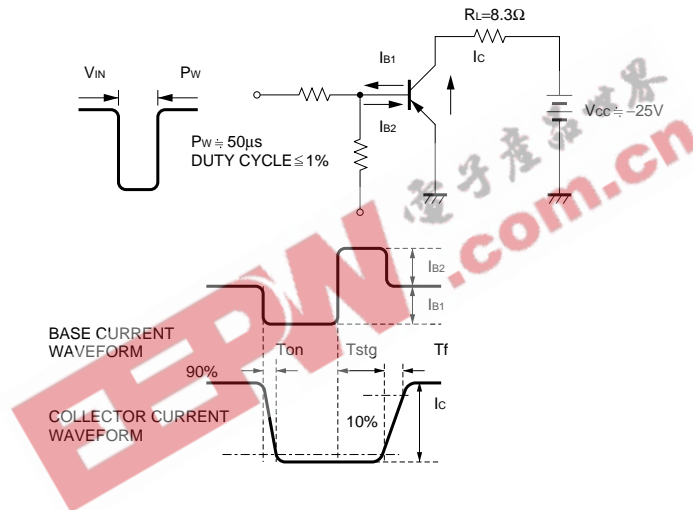


Fig.11 Grounded emitter propagation characteristics

●Switching characteristics measurement circuits



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