

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

2SA2072

●Features

- 1) High speed switching. (t_f : Typ. : 20ns at $I_c = -3A$)
- 2) Low saturation voltage, typically.
(Typ. : –200mV at $I_c = -2.0A$, $I_B = -200mA$)
- 3) Strong discharge power for inductive load and capacitance load.
- 4) Low Noise.

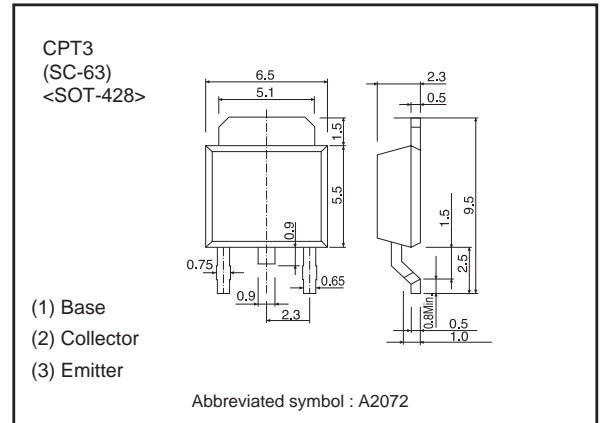
●Applications

High speed switching, Low noise

●Structure

PNP silicon epitaxial planar transistor

●Dimensions (Unit : mm)



●Packaging specifications

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

●Absolute maximum ratings (Ta=25°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	DC	I_c	–3	A
	Pulsed	I_{CP} *1	–6	A
Power dissipation	P_C	1.0 *2	W	
		10.0 *3	W	
Junction temperature	t_j	150	°C	
Range of storage temperature	t_{stg}	–55 to 150	°C	

*1 $P_w = 100ms$

*2 $T_a = 25^\circ C$

*3 $T_c = 25^\circ C$

●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)} *1	-	-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 _T *1	-	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} *2	-	20	-	ns	I _C =-3A
Storage time	t _{stg} *2	-	150	-	ns	I _{B1} =-300mA I _{B2} =300mA
Fall time	t _f *2	-	20	-	ns	V _{CC} =-25V

*1 Non repetitive pulse

*2 See switching characteristics measurement circuits

●h_{FE} RANK

Q
120-270

●Electrical characteristics curves

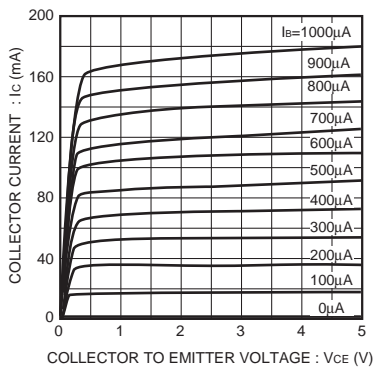


Fig.1 Typical output characteristics

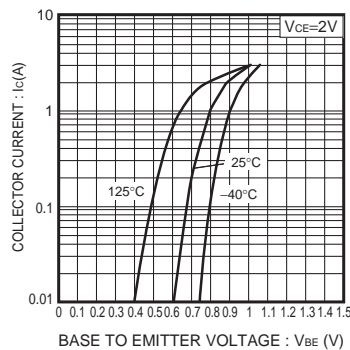


Fig.2 Grounded emitter propagation characteristics

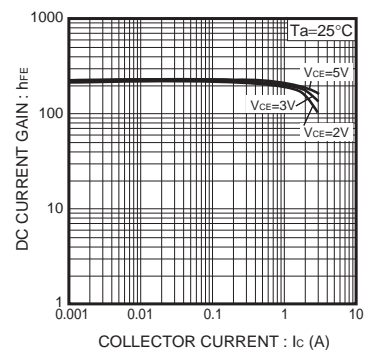


Fig.3 DC current gain vs. collector current (I)

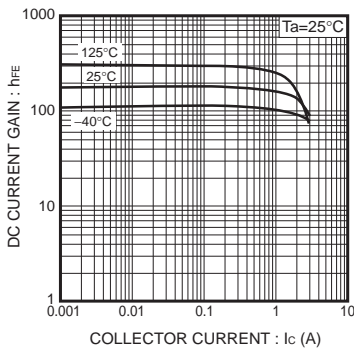


Fig.4 DC current gain vs. collector current (II)

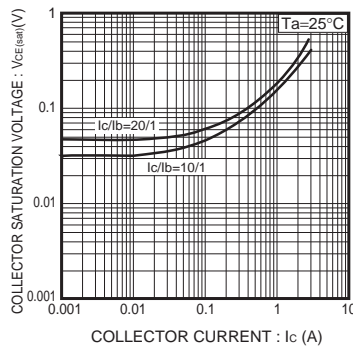


Fig.5 Collector-emitter saturation voltage vs. collector current (I)

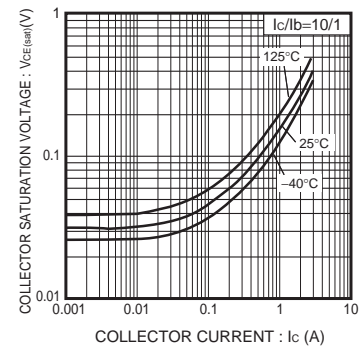


Fig.6 Collector-emitter saturation voltage vs. collector current (II)

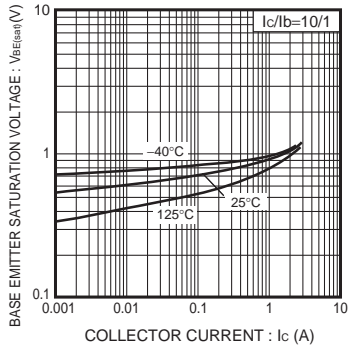


Fig.7 Base-emitter saturation voltage vs. collector current

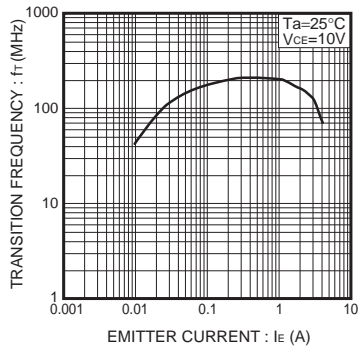


Fig.8 Transition frequency

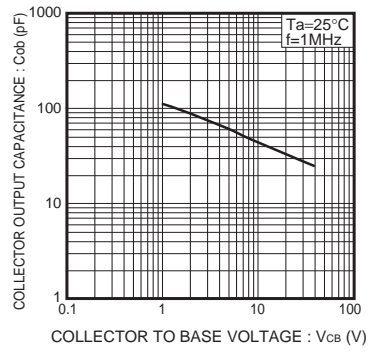


Fig.9 Collector output capacitance

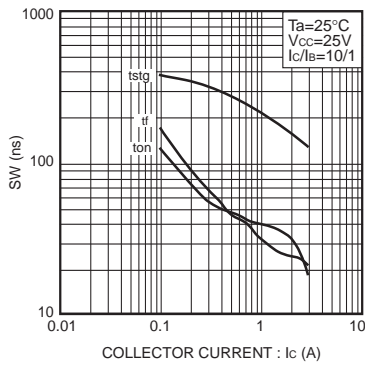
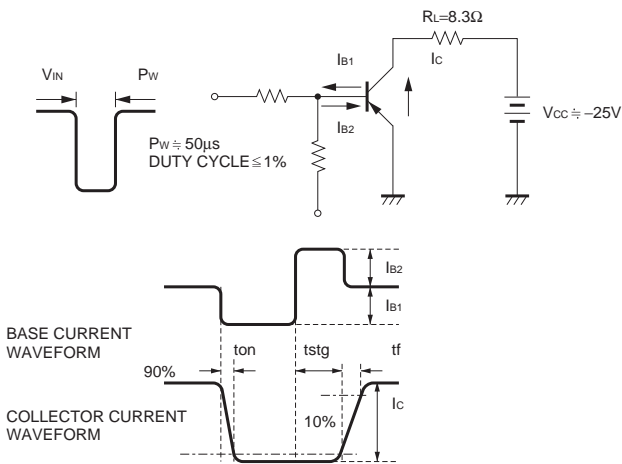


Fig.10 Switching Time

● Switching characteristics measurement circuits



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