

# 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.

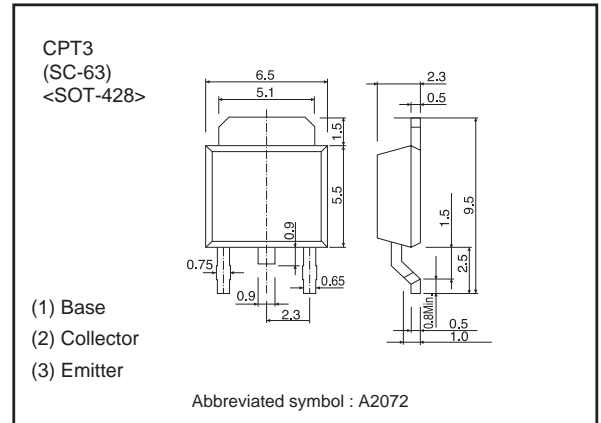
### ●Applications

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 <sub>CEO</sub>	-60	-	-	V	I <sub>C</sub> =-1mA
Collector-base breakdown voltage	BV <sub>CBO</sub>	-60	-	-	V	I <sub>C</sub> =-100μA
Emitter-base breakdown voltage	BV <sub>EBO</sub>	-6	-	-	V	I <sub>E</sub> =-100μA
Collector cut-off current	I <sub>CBO</sub>	-	-	-1.0	μA	V <sub>CB</sub> =-20V
Emitter cut-off current	I <sub>EBO</sub>	-	-	-1.0	μA	V <sub>EB</sub> =-4V
Collector-emitter saturation voltage	V <sub>CE(sat)</sub> *1	-	-200	-500	mV	I <sub>C</sub> =-2A I <sub>B</sub> =-0.2A
DC current gain	h <sub>FE</sub>	120	-	270	-	V <sub>CE</sub> =-2V I <sub>C</sub> =-100mA
Transistor frequency	f <sub>T</sub> *1	-	180	-	MHz	V <sub>CE</sub> =-10V I <sub>E</sub> =100mA f=10MHz
Collector output capacitance	C <sub>ob</sub>	-	50	-	pF	V <sub>CB</sub> =-10V I <sub>E</sub> =0mA f=1MHz
Turn-on time	t <sub>on</sub> *2	-	20	-	ns	I <sub>C</sub> =-3A
Storage time	t <sub>stg</sub> *2	-	150	-	ns	I <sub>B1</sub> =-300mA I <sub>B2</sub> =300mA
Fall time	t <sub>f</sub> *2	-	20	-	ns	V <sub>CC</sub> =-25V

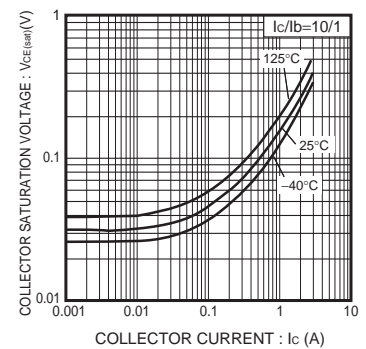
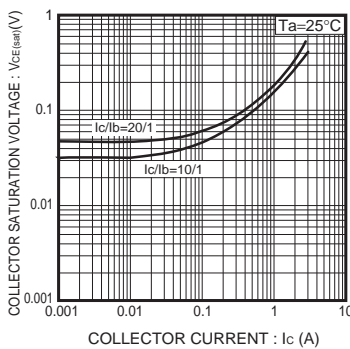
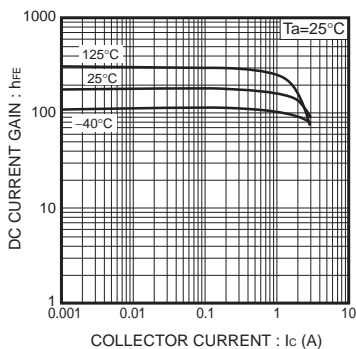
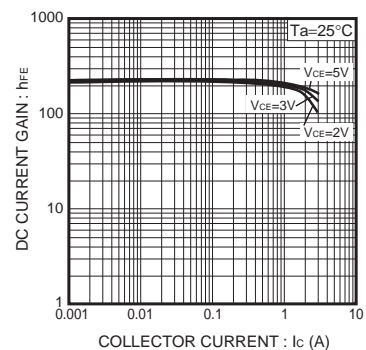
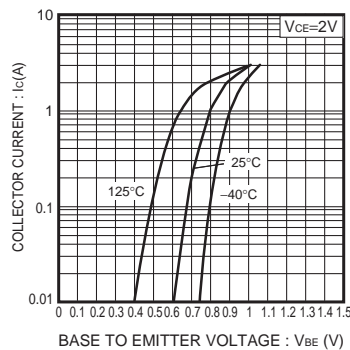
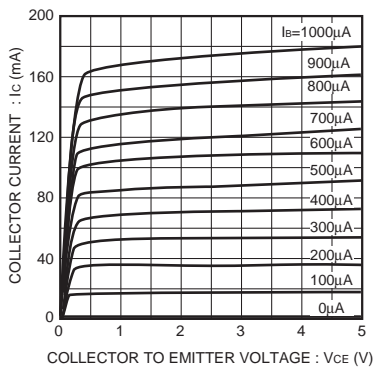
\*1 Non repetitive pulse

\*2 See switching characteristics measurement circuits

●h<sub>FE</sub> RANK

Q
120-270

●Electrical characteristics curves



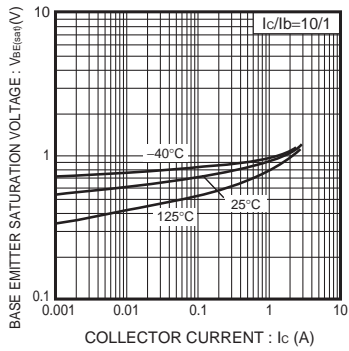


Fig.7 Base-emitter saturation voltage vs. collector current

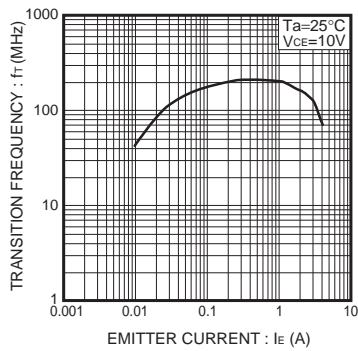


Fig.8 Transition frequency

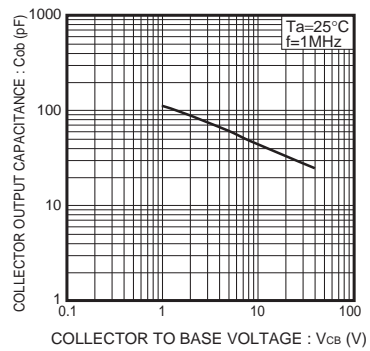


Fig.9 Collector output capacitance

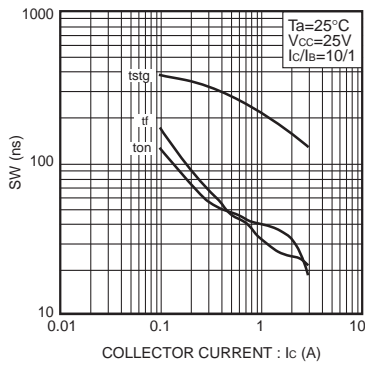
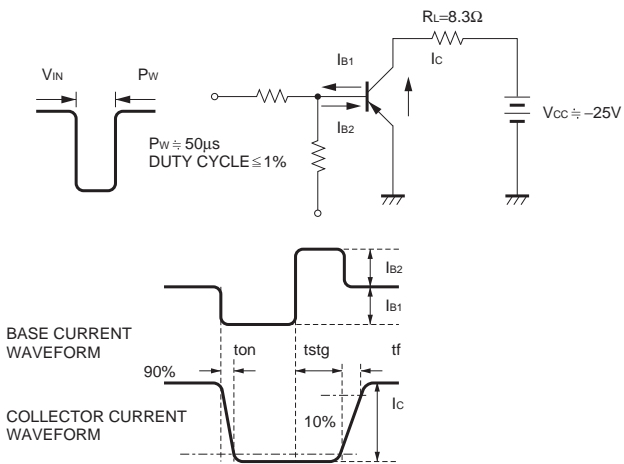


Fig.10 Switching Time

● Switching characteristics measurement circuits



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