

# 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.
- 5) Complements the 2SC5825.

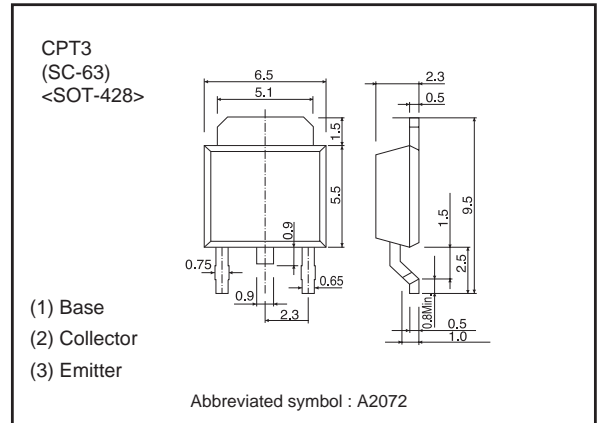
### ●Applications

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	$I_C = -100\mu A$
Emitter-base breakdown voltage	$BV_{EBO}$	-6	-	-	V	$I_E = -100\mu A$
Collector cut-off current	$I_{CBO}$	-	-	-1.0	$\mu A$	$V_{CB} = -20V$
Emitter cut-off current	$I_{EBO}$	-	-	-1.0	$\mu A$	$V_{EB} = -4V$
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	$I_C = -3A$ $I_{B1} = -300mA$
Storage time	$t_{stg}$ *2	-	150	-	ns	$I_{B2} = 300mA$
Fall time	$t_f$ *2	-	20	-	ns	$V_{CC} = -25V$

\*1 Non repetitive pulse

\*2 See switching characteristics measurement circuits

●hFE RANK

Q
120-270

●Electrical characteristics curves

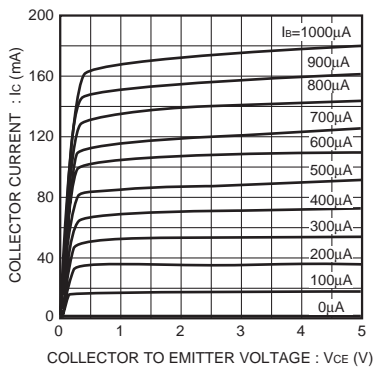


Fig.1 Typical output characteristics

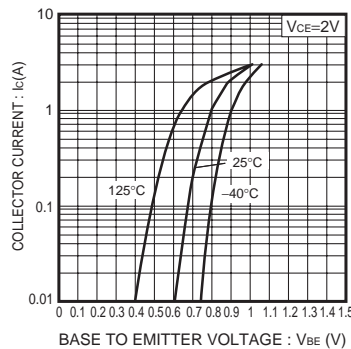


Fig.2 Grounded emitter propagation characteristics

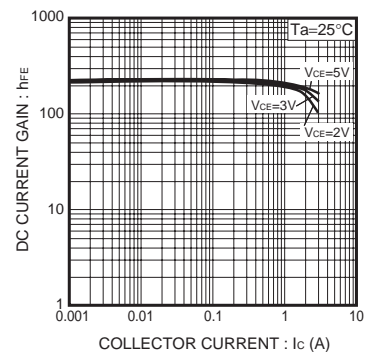


Fig.3 DC current gain vs. collector current ( I )

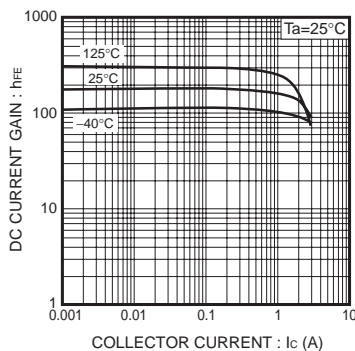


Fig.4 DC current gain vs. collector current ( II )

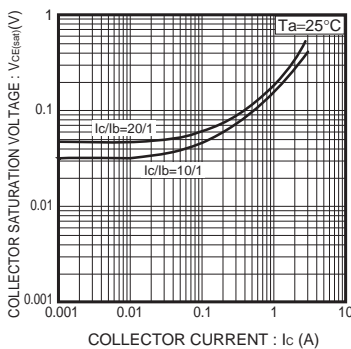


Fig.5 Collector-emitter saturation voltage vs. collector current ( I )

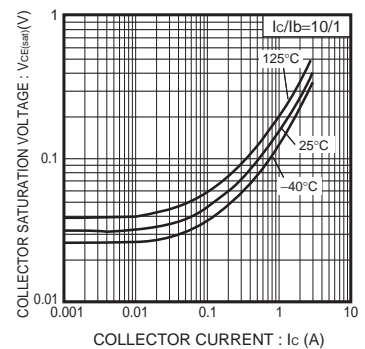


Fig.6 Collector-emitter saturation voltage vs. collector current ( II )

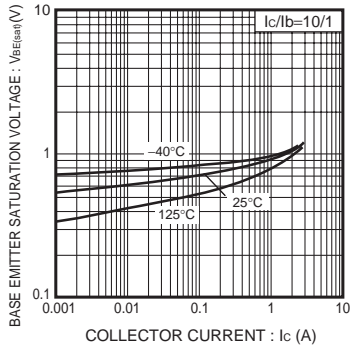


Fig.7 Base-emitter saturation voltage vs. collector current

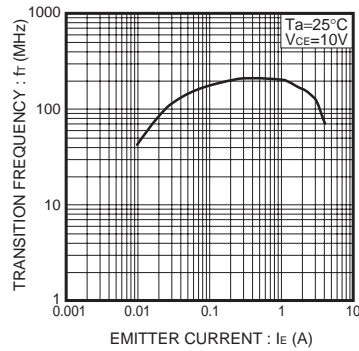


Fig.8 Transition frequency

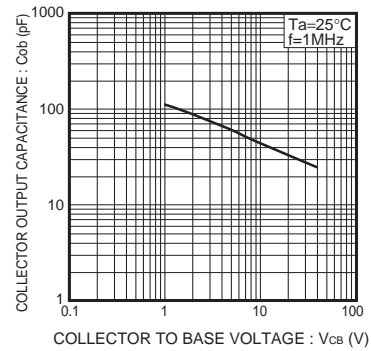


Fig.9 Collector output capacitance

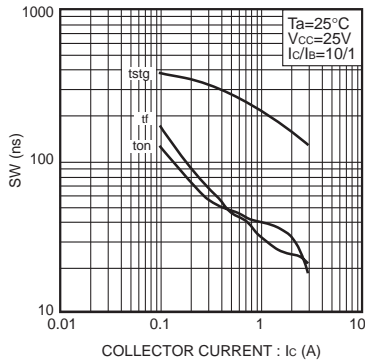
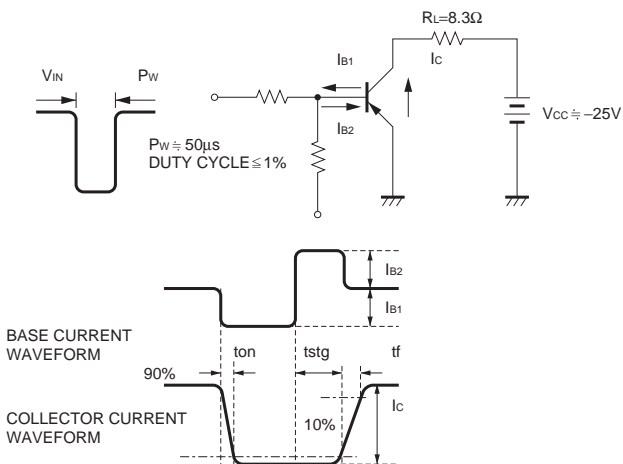


Fig.10 Switching Time

● Switching characteristics measurement circuits



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