

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

●Packaging specifications

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

●Absolute maximum ratings (Ta=25°C)

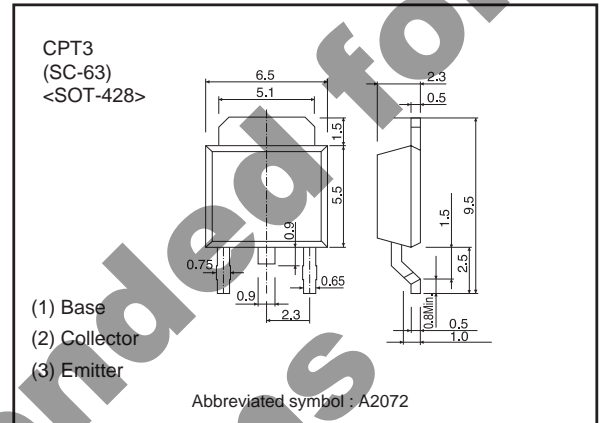
Parameter	Symbol	Limits	Unit	
Collector-base voltage	V_{CBO}	–60	V	
Collector-emitter voltage	V_{CEO}	–60	V	
Emitter-base voltage	V_{EBO}	–6	V	
Collector current	DC	I_c	–3	A
	Pulsed	I_{CP} *1	–6	A
Power dissipation	P_c	1.0	*2	W
		10.0	*3	W
Junction temperature	t_j	150	°C	
Range of storage temperature	t_{stg}	–55 to 150	°C	

*1 $P_w = 100ms$

*2 $T_a = 25^\circ C$

*3 $T_c = 25^\circ C$

●Dimensions (Unit : mm)



●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	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_T	-	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	$I_C = -3A$
Storage time	t_{stg}	-	150	-	ns	$I_{B1} = -300mA$ $I_{B2} = 300mA$
Fall time	t_f	-	20	-	ns	$V_{CE} = -25V$

*1 Non repetitive pulse

*2 See switching characteristics measurement circuits

●hFE RANK

Q
120-270

●Electrical characteristics curves

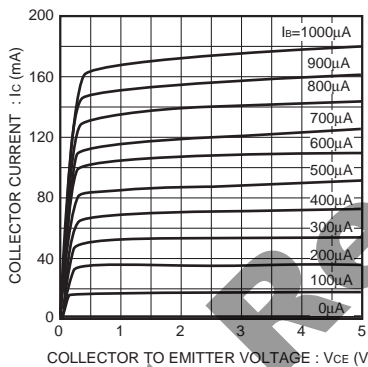


Fig.1 Typical output characteristics

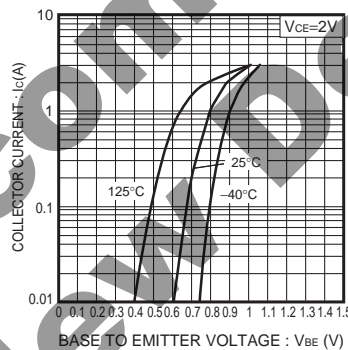


Fig.2 Grounded emitter propagation characteristics

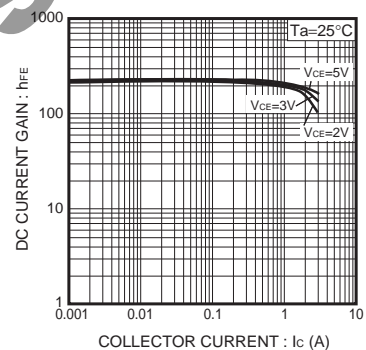


Fig.3 DC current gain vs. collector current (I)

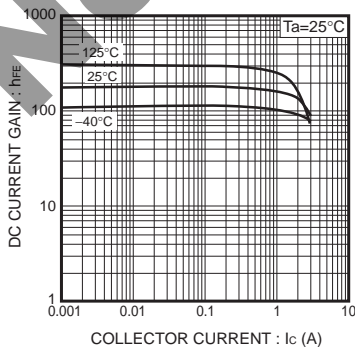


Fig.4 DC current gain vs. collector current (II)

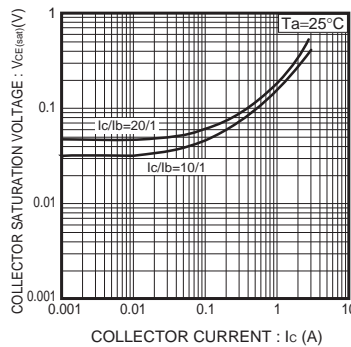


Fig.5 Collector-emitter saturation voltage vs. collector current (I)

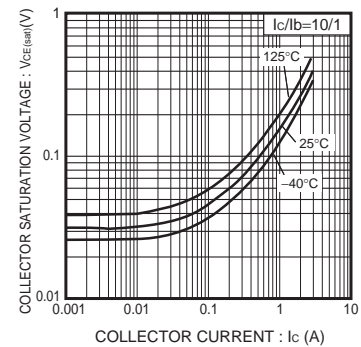


Fig.6 Collector-emitter saturation voltage vs. collector current (II)

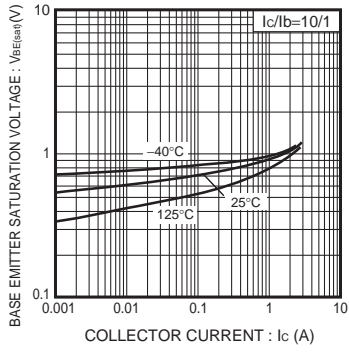


Fig.7 Base-emitter saturation voltage vs. collector current

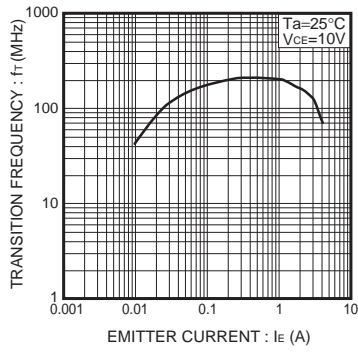


Fig.8 Transition frequency

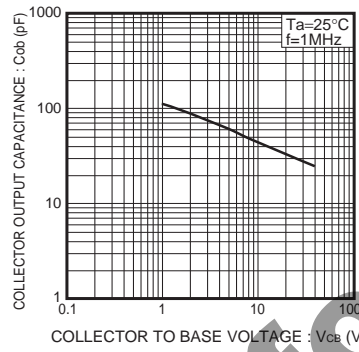


Fig.9 Collector output capacitance

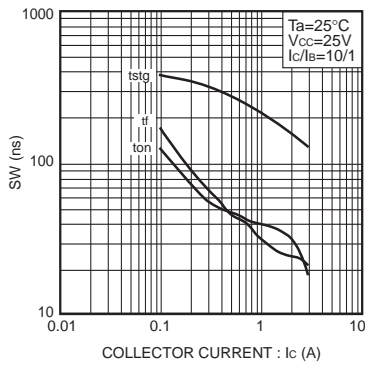
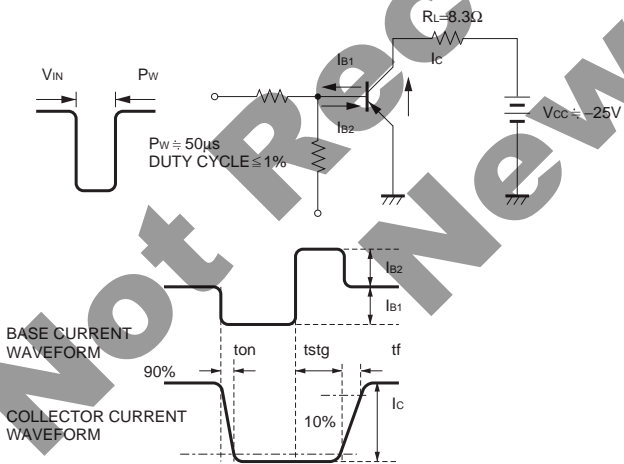


Fig.10 Switching Time

● Switching characteristics measurement circuits



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JAPAN	USA	EU	CHINA
CLASS III	CLASS III	CLASS II b	CLASS III
CLASS IV		CLASS III	

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 - Use of the Products in places subject to dew condensation
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- Please verify and confirm characteristics of the final or mounted products in using the Products.
- In particular, if a transient load (a large amount of load applied in a short period of time, such as pulse. is applied, confirmation of performance characteristics after on-board mounting is strongly recommended. Avoid applying power exceeding normal rated power; exceeding the power rating under steady-state loading condition may negatively affect product performance and reliability.
- De-rate Power Dissipation depending on ambient temperature. When used in sealed area, confirm that it is the use in the range that does not exceed the maximum junction temperature.
- Confirm that operation temperature is within the specified range described in the product specification.
- ROHM shall not be in any way responsible or liable for failure induced under deviant condition from what is defined in this document.

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- In principle, the reflow soldering method must be used on a surface-mount products, the flow soldering method must be used on a through hole mount products. If the flow soldering method is preferred on a surface-mount products, please consult with the ROHM representative in advance.

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 - [c] the Products are exposed to direct sunshine or condensation
 - [d] the Products are exposed to high Electrostatic
2. Even under ROHM recommended storage condition, solderability of products out of recommended storage time period may be degraded. It is strongly recommended to confirm solderability before using Products of which storage time is exceeding the recommended storage time period.
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