

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

2SA2073

●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 2SC5826.

●Applications

High speed switching, Low noise

●Structure

PNP silicon epitaxial planar transistor

●Packaging specifications

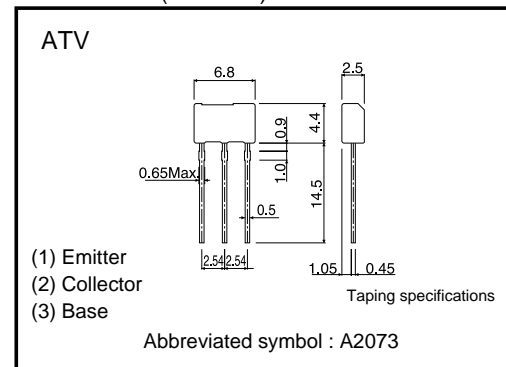
Type	Package	Taping
	Code	TV2
	Basic ordering unit (pieces)	2500
2SA2073		○

●Absolute maximum ratings ($T_a = 25^\circ C$)

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 *
Power dissipation	P_C	1.0	W	
Junction temperature	t_j	150	°C	
Range of storage temperature	t_{stg}	–55 to 150	°C	

* $P_w = 10ms$

●Dimensions (Unit : mm)



Transistors

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Collector-emitter breakdown voltage	BV_{CEO}	-60	-	-	V	$I_C = -1\text{mA}$
Collector-base breakdown voltage	BV_{CBO}	-60	-	-	V	$I_C = -100\mu\text{A}$
Emitter-base breakdown voltage	BV_{EBO}	-6	-	-	V	$I_E = -100\mu\text{A}$
Collector cut-off current	I_{CBO}	-	-	-1.0	μA	$V_{CB} = -40\text{V}$
Emitter cut-off current	I_{EBO}	-	-	-1.0	μA	$V_{EB} = -4\text{V}$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-200	-500	mV	$I_C = -2.0\text{A}$ $I_B = -200\text{mA}$
DC current gain	h_{FE}	120	-	270	-	$V_{CE} = -2\text{V}$ $I_C = -100\text{mA}$
Transistor frequency	f_T	-	200	-	MHz	$V_{CE} = -10\text{V}$ $I_E = 100\text{mA}$ $f = 10\text{MHz}$
Collector output capacitance	C_{ob}	-	40	-	pF	$V_{CB} = -10\text{V}$ $I_E = 0\text{mA}$ $f = 1\text{MHz}$
Turn-on time	t_{on}	-	20	-	ns	$I_C = -3\text{A}$ $I_{B1} = -300\text{mA}$
Storage time	t_{stg}	-	130	-	ns	$I_{B2} = 300\text{mA}$
Fall time	t_f	-	20	-	ns	$V_{CC} = -25\text{V}$

*1 Single pulse

*2 See switching characteristics measurement circuits

● h_{FE} RANK

Q
120-270

Transistors

●Electrical characteristics curves

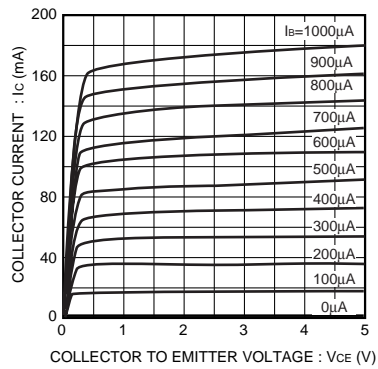


Fig.1 Typical output characteristics

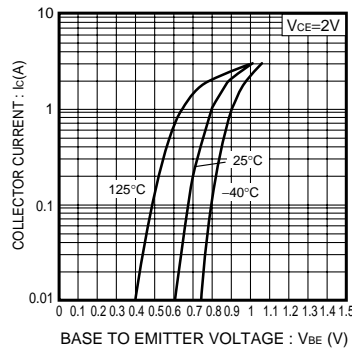


Fig.2 Grounded emitter propagation characteristics

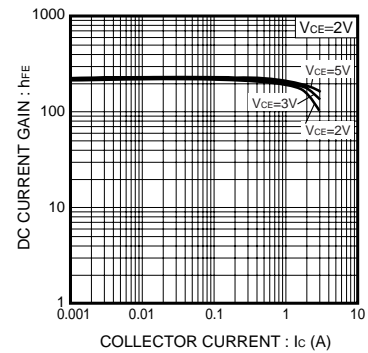


Fig.3 DC current gain vs. collector current (I)

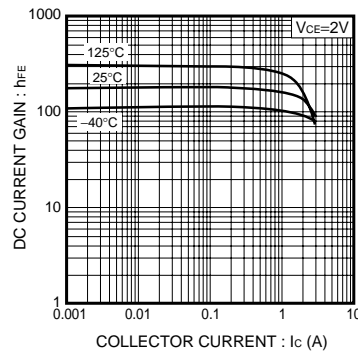


Fig.4 DC current gain vs. collector current (II)

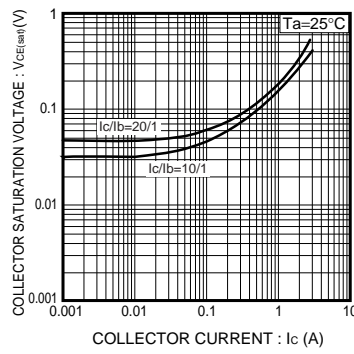


Fig.5 Collector-emitter saturation voltage vs. collector current (I)

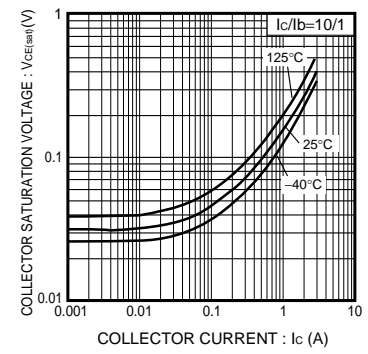


Fig.6 Collector-emitter saturation voltage vs. collector current (II)

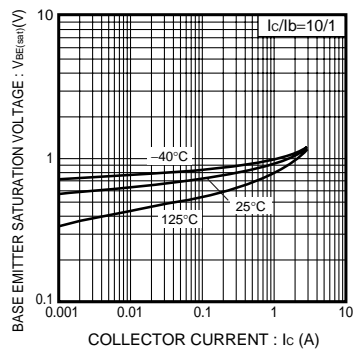


Fig.7 Base-emitter saturation voltage vs. collector current

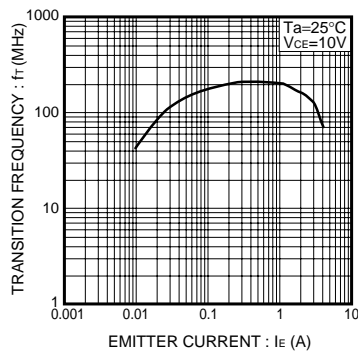


Fig.8 Transition frequency

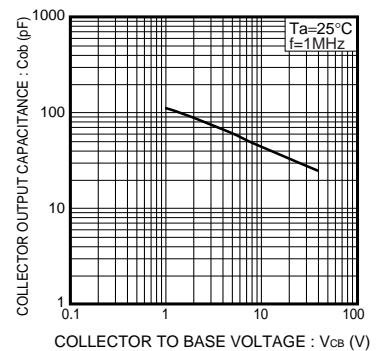


Fig.9 Collector output capacitance

Transistors

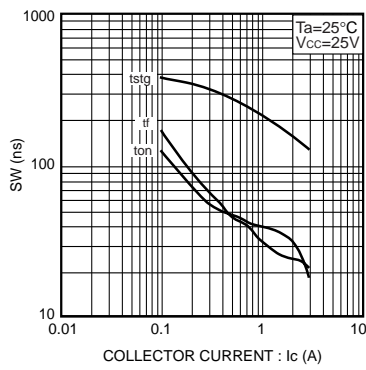


Fig.3 Switching Time

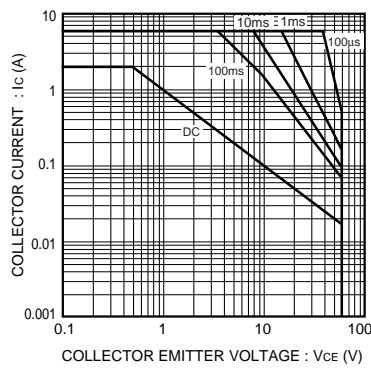
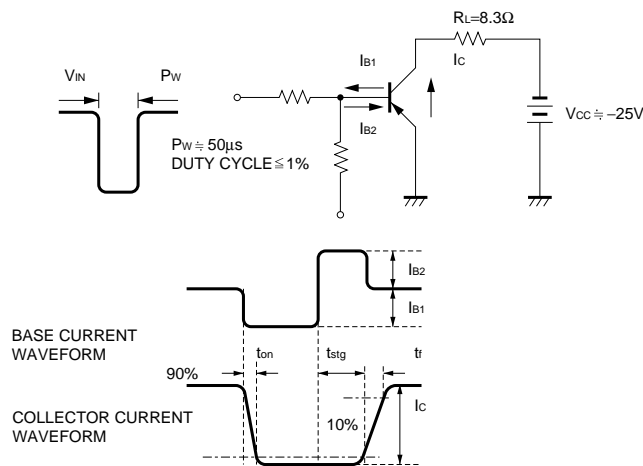


Fig.11 Safe operating area

●Switching characteristics measurement circuits



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