

# 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

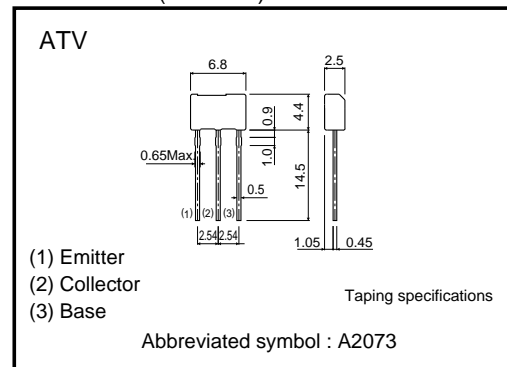
Type	Package	Taping
	Code	TV2
	Basic ordering unit (pieces)	2500
2SA2073		○

### ●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	$^\circ C$	
Range of storage temperature	$T_{stg}$	–55 to 150	$^\circ C$	

\* $P_w = 10ms$

### ●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	$\mu\text{A}$	$V_{CB} = -40\text{V}$
Emitter cut-off current	$I_{EBO}$	-	-	-1.0	$\mu\text{A}$	$V_{EB} = -4\text{V}$
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

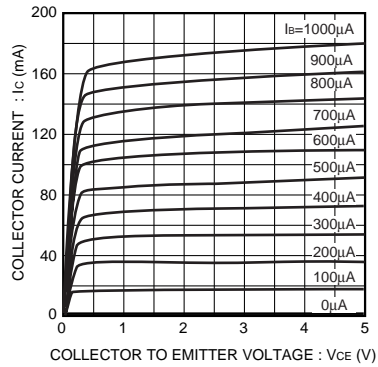


Fig.1 Typical output characteristics

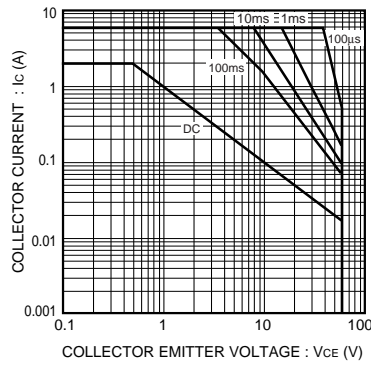


Fig.2 Safe operating area

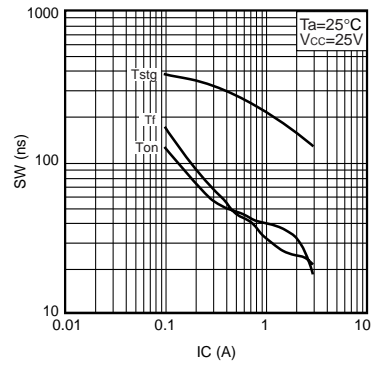


Fig.3 Switching Time

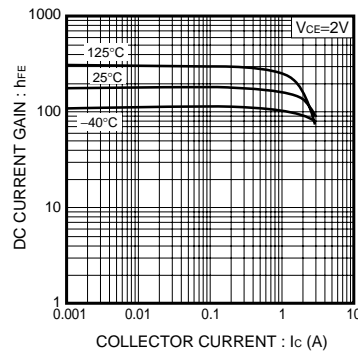


Fig.4 DC current gain vs. collector current ( I )

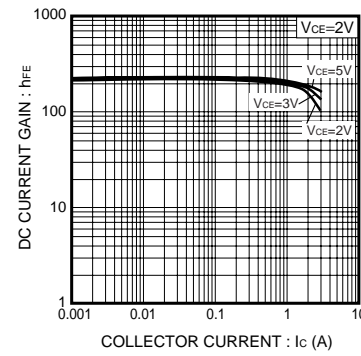


Fig.5 DC current gain vs. collector current ( II )

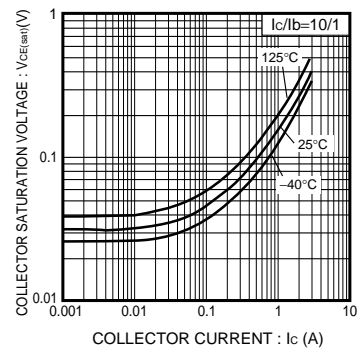


Fig.6 Collector-emitter saturation voltage vs. collector current ( I )

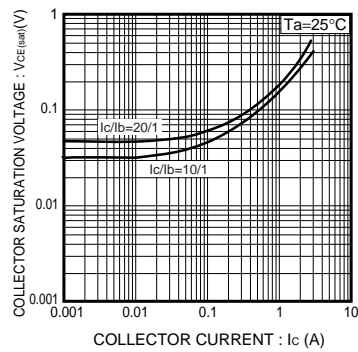


Fig.7 Collector-emitter saturation voltage vs. collector current ( II )

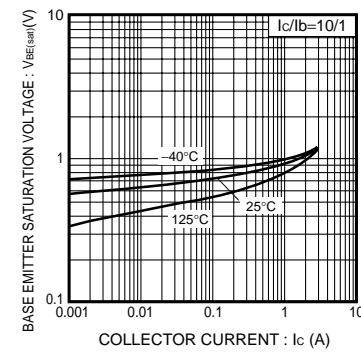


Fig.8 Base-emitter saturation voltage vs. collector current

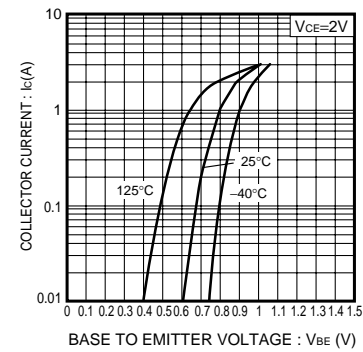


Fig.9 Grounded emitter propagation characteristics

Transistors

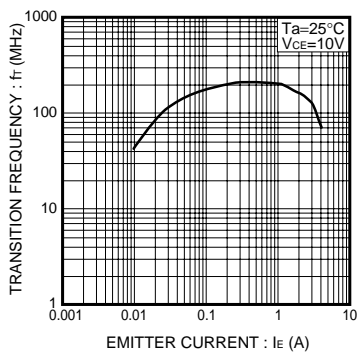


Fig.10 Transition frequency

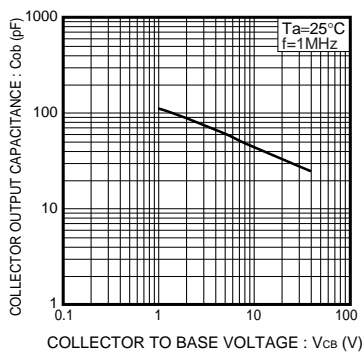
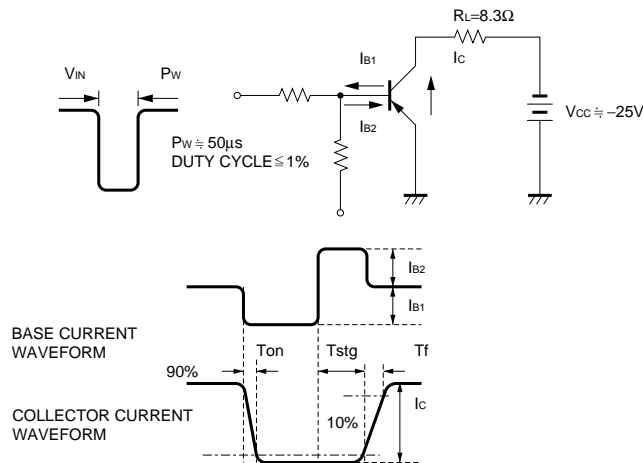


Fig.11 Collector output capacitance

●Switching characteristics measurement circuits



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