

2SC5876W TRANSISTOR (NPN)

● Features

- 1) High speed switching.
(Tf:Typ.:80ns at $I_C=500\text{mA}$)
- 2) Low saturation voltage, typically
(Typ.:150mV at $I_C=100\text{mA}$, $I_B=10\text{mA}$)
- 3) Strong discharge power for inductive load and capacitance load.
- 4) Complements the 2SA2088W.

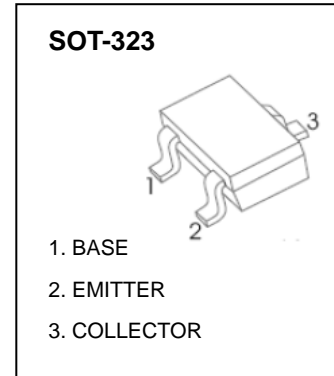
● Application

LOW FREQUENCY AMPLIFIER, HIGH SPEED SWITCHING

● Marking: VS

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

Parameter	Symbol	Values	Unit
Collector-base voltage	V_{CBO}	60	V
Collector-emitter voltage	V_{CEO}	60	V
Emitter-base voltage	V_{EBO}	6	V
Collector current	I_C	500	mA
	I_{CP}^{*1}	1.0	A
Power dissipation	P_D^{*2}	200	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Range of storage temperature	T_{stg}	-55 to + 150	$^\circ\text{C}$



● **Electrical characteristics** ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Collector-base breakdown voltage	BV_{CBO}	$I_C = 100 \mu\text{A}$	60	-	-	V
Collector-emitter breakdown voltage	BV_{CEO}	$I_C = 1 \text{mA}$	60	-	-	V
Emitter-base breakdown voltage	BV_{EBO}	$I_E = 100 \mu\text{A}$	6	-	-	V
Collector cut-off current	I_{CBO}	$V_{CB} = 40 \text{V}$	-	-	1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 4 \text{V}$	-	-	1	μA
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 100 \text{mA}, I_B = 10 \text{mA}$	-	150	300	mV
DC current gain	h_{FE}	$V_{CE} = 2 \text{V}, I_C = 50 \text{mA}$	120	-	390	-
Transition frequency	f_T^{*3}	$V_{CE} = 10 \text{V}, I_E = -100 \text{mA},$ $f = 100 \text{MHz}$	-	300	-	MHz
Output capacitance	C_{ob}	$V_{CB} = 10 \text{V}, I_E = 0 \text{mA},$ $f = 1 \text{MHz}$	-	5	-	pF
Turn-On time	t_{on}^{*3}	$I_C = 500 \text{mA},$ $I_{B1} = 50 \text{mA},$	-	70	-	ns
Storage time	t_{stg}^{*3}	$I_{B2} = -50 \text{mA},$ $V_{CC} \approx 25 \text{V},$	-	130	-	ns
Fall time	t_f^{*3}	$R_L = 50 \Omega$ See test circuit	-	80	-	ns

*1 $P_w = 10 \text{ms}$

*2 Each terminal mounted on a reference land.

*3 Pulsed

Typical Characteristics

Fig.1 Ground Emitter Propagation Characteristics

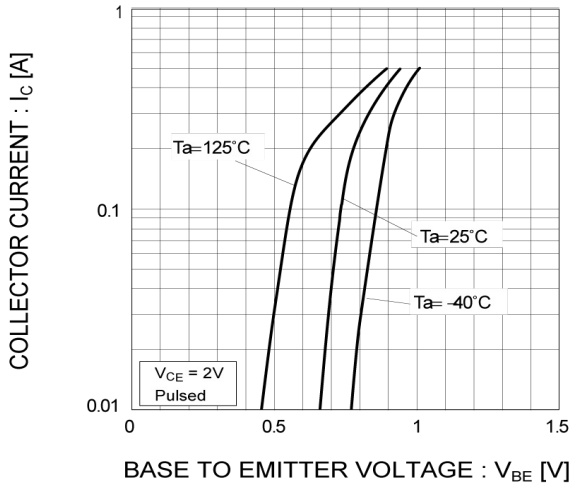


Fig.2 Typical Output Characteristics

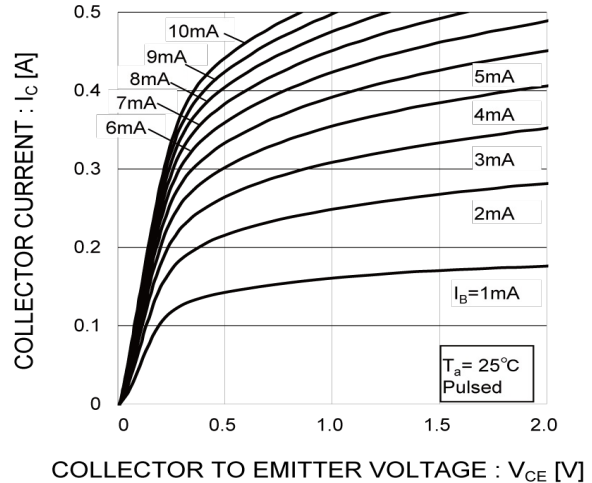


Fig.3 DC Current Gain vs. Collector Current (I)

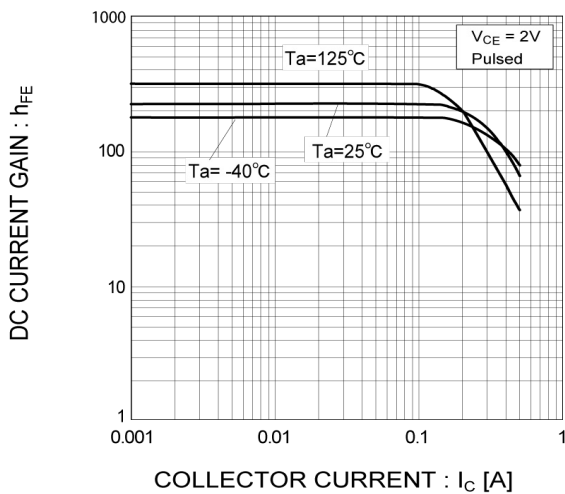


Fig.4 DC Current Gain vs. Collector Current (II)

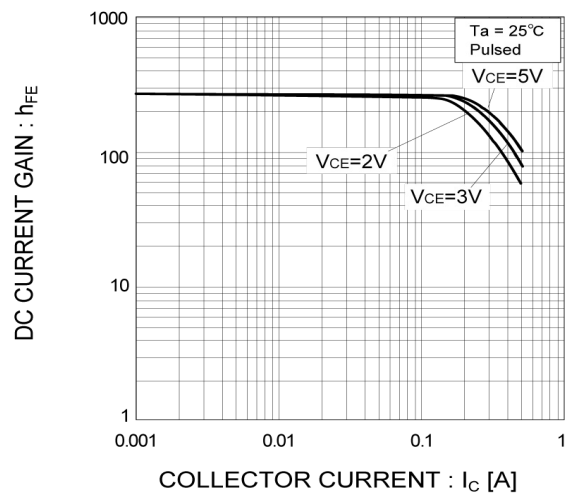


Fig.5 Collector-Emitter Saturation Voltage vs. Collector Current (I)

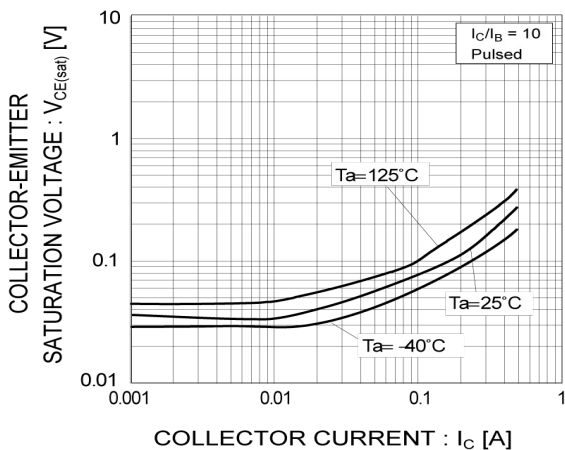
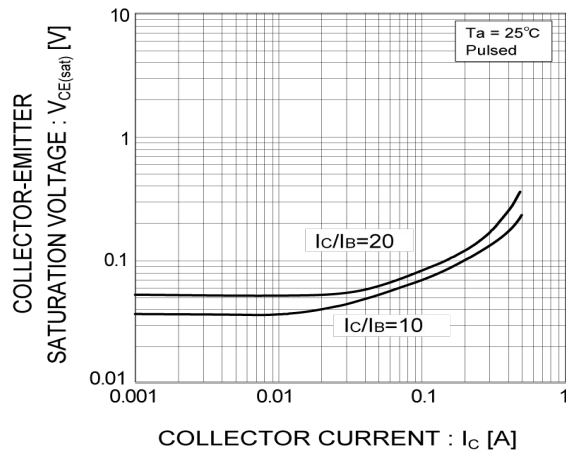


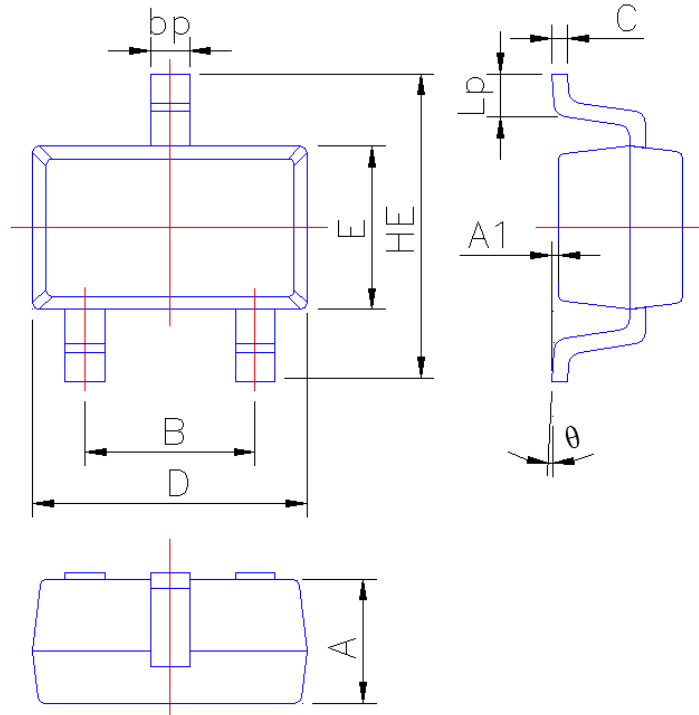
Fig.6 Collector-Emitter Saturation Voltage vs. Collector Current (II)



PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-323



Symbol	Dimension in Millimeters	
	Min	Max
A	0.90	1.00
A1	0.010	0.100
B	1.20	1.40
bp	0.25	0.45
C	0.09	0.15
D	2.00	2.20
E	1.15	1.35
HE	2.15	2.55
Lp	0.25	0.46
θ	0°	6°