

# Power transistor (60V, 3A)

## 2SC5826

### ●Features

- 1) High speed switching.  
( $t_f$  : Typ. : 30ns at  $I_c = 3A$ )
- 2) Low saturation voltage, typically  
(Typ. : 200mV at  $I_c = 2A, I_B = 0.2mA$ )
- 3) Strong discharge power for inductive load and capacitance load.
- 4) Complements the 2SA2073

### ●Applications

Low frequency amplifier  
High speed switching

### ●Structure

NPN Silicon epitaxial planar transistor

### ●Packaging specifications

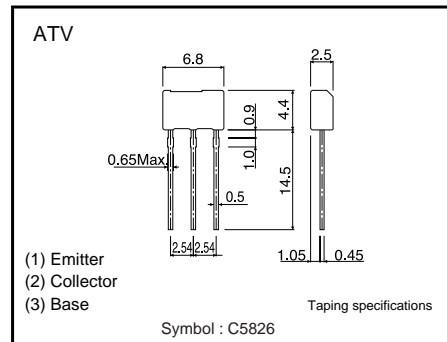
Type	Package	Taping
	Code	TV2
	Basic ordering unit (pieces)	2500
2SC5826		○

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

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	$^\circ\text{C}$	
Range of storage temperature	$t_{stg}$	-55 to 150	$^\circ\text{C}$	

\* $P_w=100\text{ms}$

### ●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	$I_C=2\text{A}$ $I_B=0.2\text{A}$
DC current gain	$h_{FE}$	120	–	390	–	$V_{CE}=2\text{V}$ $I_C=100\text{mA}$
Transition frequency	$f_r$	–	200	–	MHz	$V_{CE}=10\text{V}$ $I_E=-100\text{mA}$ $f=10\text{MHz}$
Corrector output capacitance	$C_{ob}$	–	20	–	pF	$V_{CB}=10\text{V}$ $I_E=0\text{mA}$ $f=1\text{MHz}$
Turn-on time	$t_{on}$	–	50	–	ns	$I_C=3\text{A}$ $I_{B1}=300\text{mA}$ $I_{B2}=-300\text{mA}$
Storage time	$t_{stg}$	–	150	–	ns	$V_{CC}\approx 25\text{V}$
Fall time	$t_f$	–	30	–	ns	

\*1 Non repetitive pulse

\*2 See Switching characteristics measurement circuits

● $h_{FE}$  RANK

Q	R
120–270	180–390

●Electrical characteristic curves

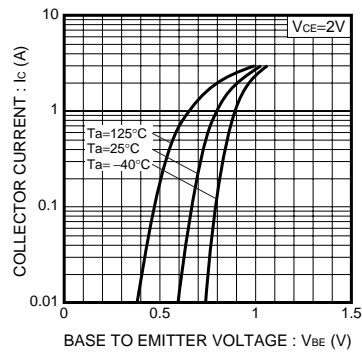


Fig.1 Grounded Emitter Propagation Characteristics

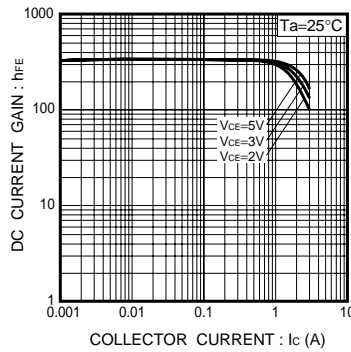


Fig.2 DC Current Gain vs. Collector Current (I)

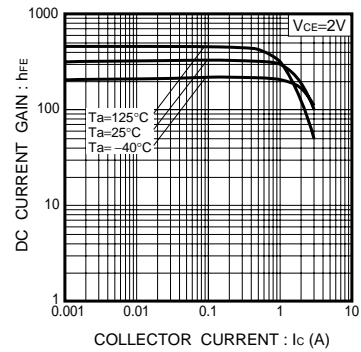


Fig.3 DC Current Gain vs. Collector Current (II)

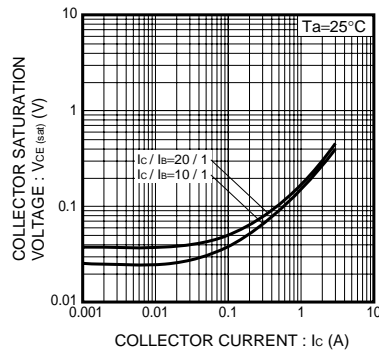


Fig.4 Collector-Emitter Saturation Voltage vs. Collector Current (I)

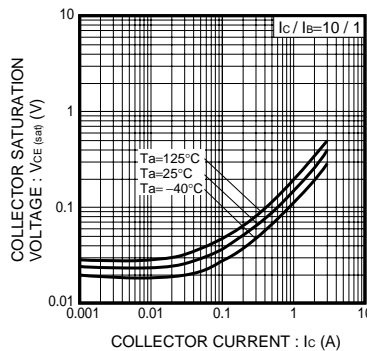


Fig.5 Collector-Emitter Saturation Voltage vs. Collector Current (II)

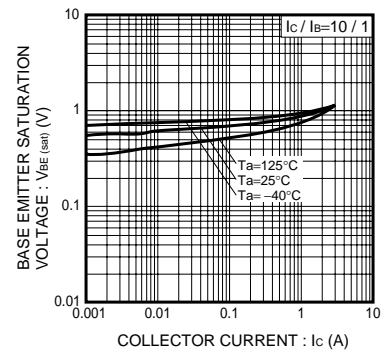


Fig.6 Base-Emitter Saturation Voltage vs. Collector Current

Transistors

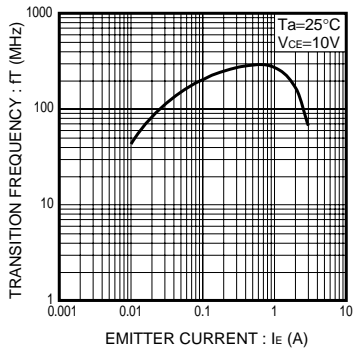


Fig.7 Transition Frequency

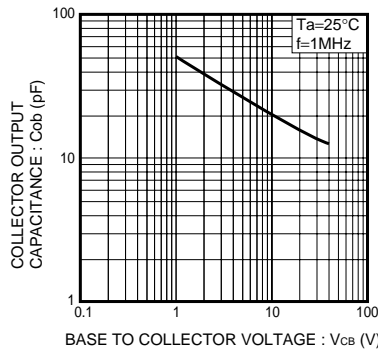


Fig.8 Collector Output Capacitance

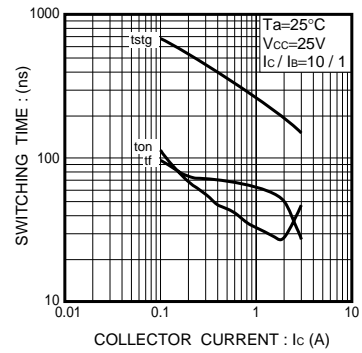


Fig.9 Switching Time

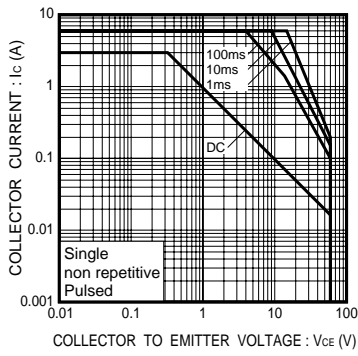
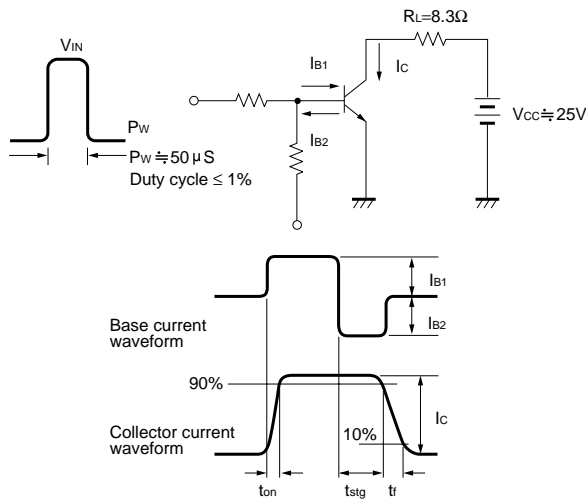


Fig.10 Safe Operating Area

●Switching characteristics measurement circuits



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