

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

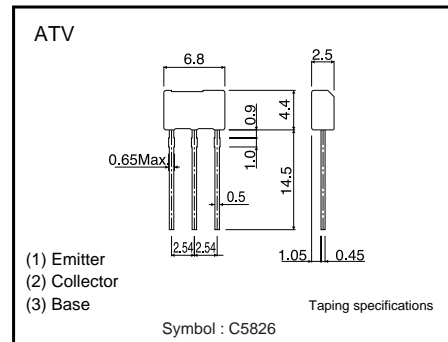
Type	Package	Taping
	Code	TV2
	Basic ordering unit (pieces)	2500
2SC5826		○

●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	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	$I_C=2\text{A}$ $I_B=0.2\text{A}$
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

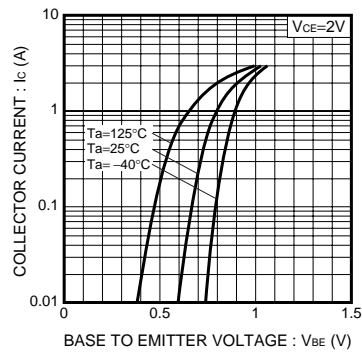


Fig.1 Grounded Emitter Propagation Characteristics

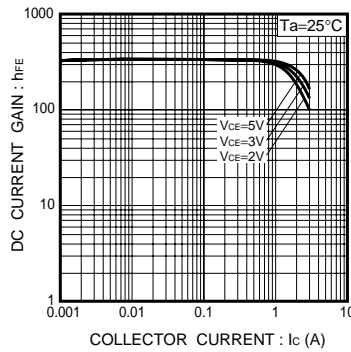


Fig.2 DC Current Gain vs. Collector Current (I)

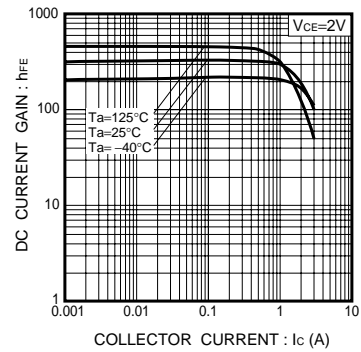


Fig.3 DC Current Gain vs. Collector Current (II)

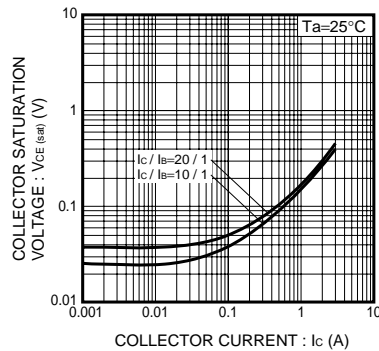


Fig.4 Collector-Emitter Saturation Voltage vs. Collector Current (I)

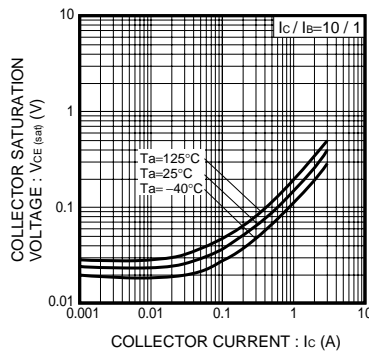


Fig.5 Collector-Emitter Saturation Voltage vs. Collector Current (II)

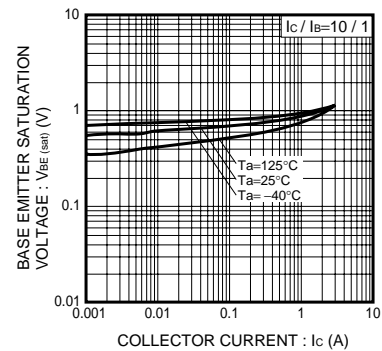


Fig.6 Base-Emitter Saturation Voltage vs. Collector Current

Transistors

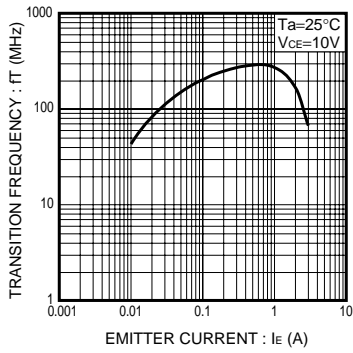


Fig.7 Transition Frequency

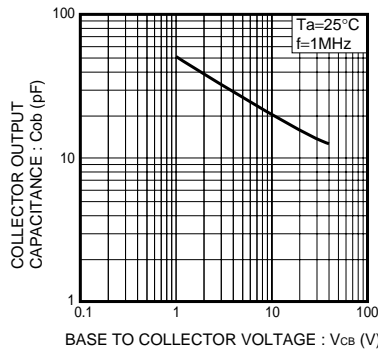


Fig.8 Collector Output Capacitance

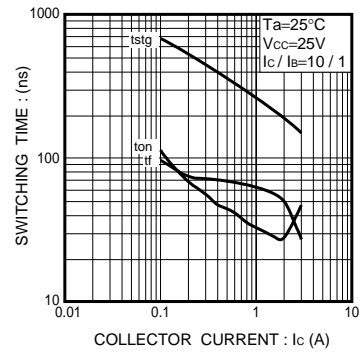


Fig.9 Switching Time

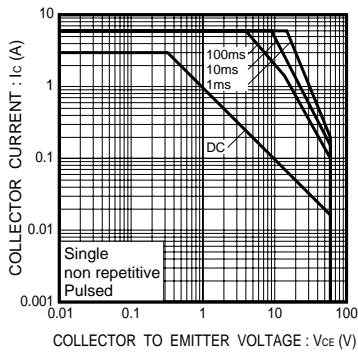
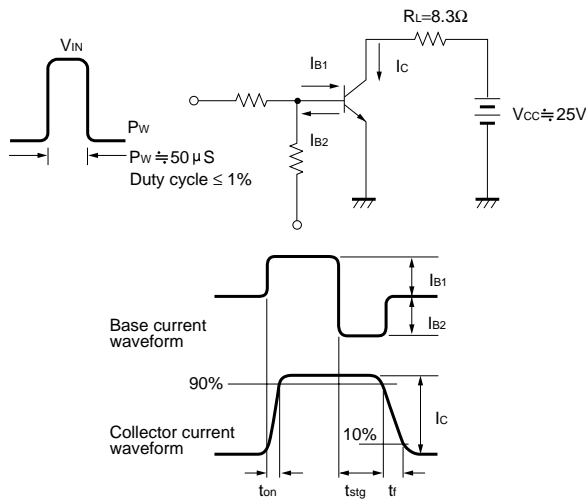


Fig.10 Safe Operating Area

●Switching characteristics measurement circuits



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