

Power transistor (60V, 2A)

2SC5880

●Features

- 1) High speed switching.
(t_f : Typ. : 35ns at $I_c = 2A$)
- 2) Low saturation voltage, typically
(Typ. : 200mV at $I_c = 1.0A, I_B = 100mA$)
- 3) Strong discharge power for inductive load and capacitance load.
- 4) Complements the 2SA2093

●Applications

Low frequency amplifier
High speed switching

●Structure

NPN Silicon epitaxial planar transistor

●Packaging specifications

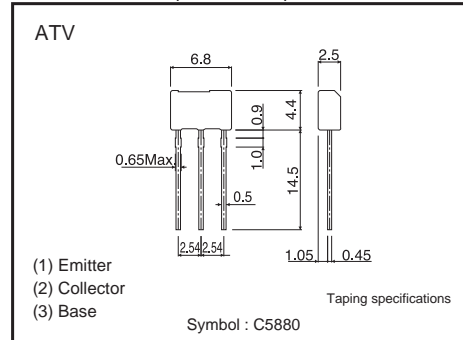
Type	Package	Taping
	Code	TV2
	Basic ordering unit (pieces)	2500
2SC5880		○

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit	
Collector-base voltage	V_{CBO}	60	V	
Collector-emitter voltage	V_{CEO}	60	V	
Emitter-base voltage	V_{EBO}	6	V	
Collector current	DC	I_c	2	A
	Pulsed	I_{CP}	4	A *
Power dissipation	P_C	1.0	W	
Junction temperature	t_j	150	°C	
Range of storage temperature	t_{stg}	-55 to 150	°C	

*Pw=10ms

●Dimensions (Unit : mm)



●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Collector-emitter breakdown voltage	BV_{CEO}	60	–	–	V	$I_C=1mA$
Collector-base breakdown voltage	BV_{CBO}	60	–	–	V	$I_C=100\mu A$
Emitter-base breakdown voltage	BV_{EBO}	6	–	–	V	$I_E=100\mu A$
Collector cut-off current	I_{CBO}	–	–	1.0	μA	$V_{CB}=40V$
Emitter cut-off current	I_{EBO}	–	–	1.0	μA	$V_{EB}=4V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	–	200	500	mV	$I_C=1.0A$ $I_B=0.1A$
DC current gain	h_{FE}	120	–	390	–	$V_{CE}=2V$ $I_C=100mA$
Transition frequency	f_T	–	200	–	MHz	$V_{CE}=10V$ $I_E=-100mA$ $f=10MHz$
Corrector output capacitance	C_{ob}	–	10	–	pF	$V_{CB}=10V$ $I_E=0mA$ $f=1MHz$
Turn-on time	t_{on}	–	50	–	ns	$I_C=2A$ $I_{B1}=200mA$
Storage time	t_{stg}	–	120	–	ns	$I_{B2}=-200mA$
Fall time	t_f	–	35	–	ns	$V_{CC}\approx 25V$

*Non repetitive pulse

●hFE RANK

Q	R
120–270	180–390

●Electrical characteristic curves

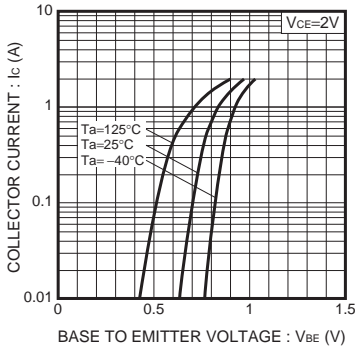


Fig.1 Grounded Emitter Propagation Characteristics

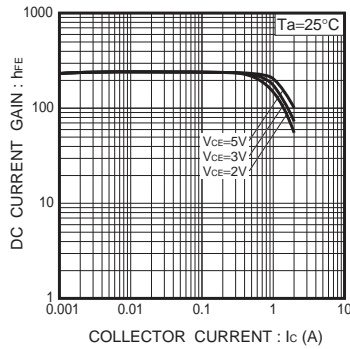


Fig.2 DC Current Gain vs. Collector Current (I)

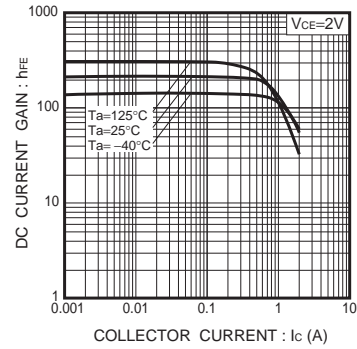


Fig.3 DC Current Gain vs. Collector Current (II)

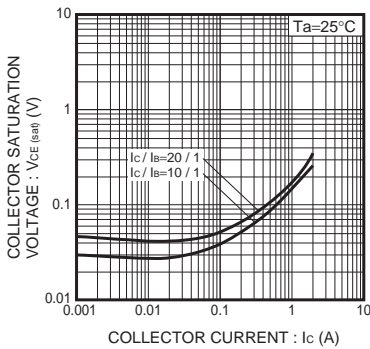


Fig.4 Collector-Emitter Saturation Voltage vs. Collector Current (I)

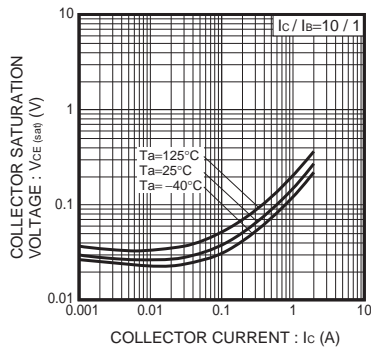


Fig.5 Collector-Emitter Saturation Voltage vs. Collector Current (II)

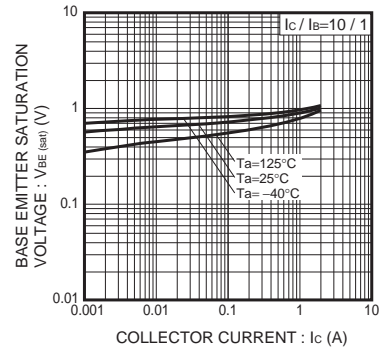


Fig.6 Base-Emitter Saturation Voltage vs. Collector Current

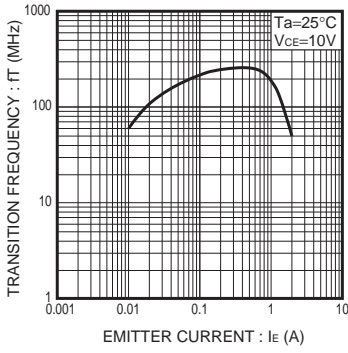


Fig.7 Transition Frequency

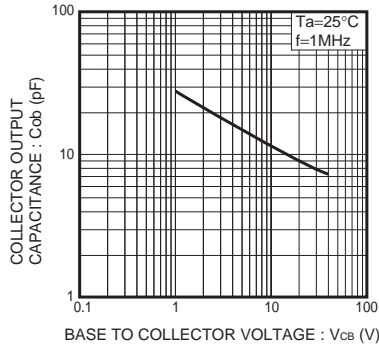


Fig.8 Collector Output Capacitance

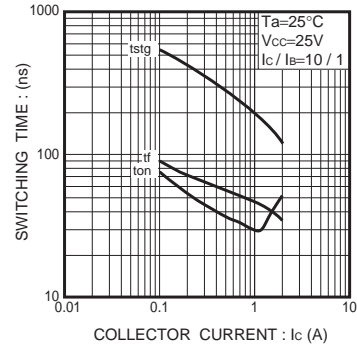
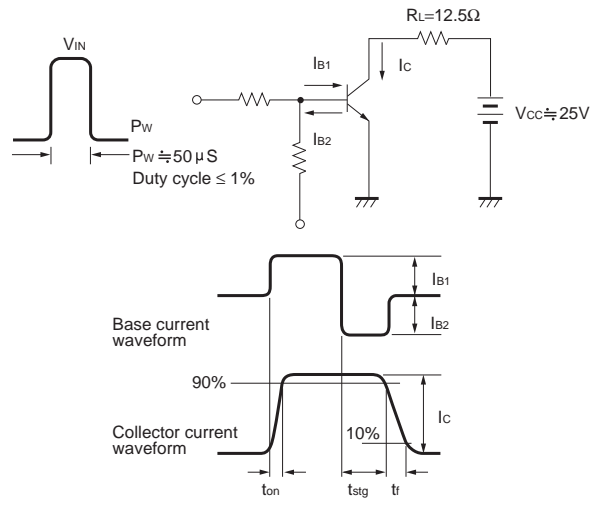


Fig.9 Switching Time

●Switching characteristics measurement circuits



Notes

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