Power transistor (60V, 5A)

2SC5881

Features

1) High speed switching.

(Tf: Typ.: 25ns at Ic = 5A)

2) Low saturation voltage, typically

(Typ.: 200mV at lc = 3.0A, $l_B = 300mA$)

3) Strong discharge power for inductive load and capacitance load.

4) Complements the 2SA2096

Applications

Low frequency amplifier High speed switching

●Structure

NPN Silicon epitaxial planar transistor

Packaging specifications

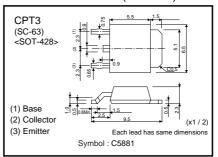
	Package	Taping	
Type	Code	TL	
	Basic ordering unit (pieces)	2500	
2SC5881		0	

● Absolute maximum ratings (Ta=25°C)

Parameter		Symbol	Limits	Unit	
Collector-base voltage		Vсво	100	V	
Collector-emitter voltage		Vces	100	V	
		Vceo	60	V	
Emitter-base voltage		Vево	6.5	V	
Collector current	DC	Ic	5.0	А	
	Pulsed	Іср	10.0	A *1	
Power dissipation		Ъ	1.0	W *2	
		Pc	10.0	W *3	
Junction temperature		Tj	150	°C	
Range of storage temperature		Tstg	-55 to 150	°C	

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●External dimensions (Unit : mm)



^{*1} Pw=10ms, non repetitive pulse *2 Ta=25°C *3 Tc=25°C

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Тур.	Max.	Unit	Condition	
Collector emitter breakdown valtage	BVceo	60	-	_	V	Ic=1mA	
Collector-emitter breakdown voltage	BVces	100	-	_	V	Ic=100μA	
Collector-base breakdown voltage	ВУсво	100	-	_	V	Ic=100μA	
Emitter-base breakdown voltage	ВVево	6.5	-	_	V	IE=100μA	
Collector cut-off current	Ісво	-	-	1.0	μΑ	Vcb=40V	
Emitter cut-off current	Ієво	-	-	1.0	μΑ	V _{EB} =4V	
Collector-emitter saturation voltage	VCE (sat)	_	000	400	mV	Ic=3.0A *1	
			200	400		Iв=300mA	
DC current gain	hfe	120	-	390	-	Vce=2V	
						Ic=100mA	
Transition frequency	f⊤	_	160	-	MHz	VcE=10V *1	
						IE= -100mA	
						f=10MHz	
Corrector output capacitance	Cob	_	30	-		Vcb=10V	
					pF	IE=0mA	
				_		f=1MHz	
Turn-on time	Ton	_	70	-	ns	Ic=5A *2	
Storage time	Tstg	-	150	-	ns	Iв1=500mA Iв2= -500mA	
Fall time	Tf	_	25		ns	Vcc≒25V	

●hFE RANK

Q	R
120–270	180-390

Electrical characteristic curves

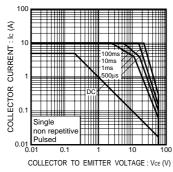


Fig.1 Safe Operating Area

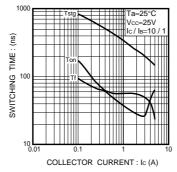


Fig.2 Switching Time

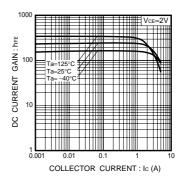


Fig.3 DC Current Gain vs. Collector Current (I)

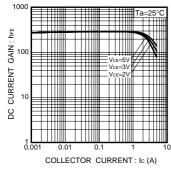


Fig.4 DC Current Gain vs. Collector Current (II)

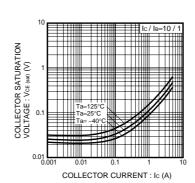


Fig.5 Collector-Emitter Saturation Voltage vs. Collector Current (I)

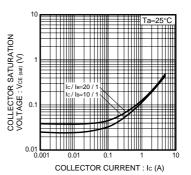


Fig.6 Collector-Emitter Saturation Voltage vs. Collector Current (II)

^{*1} Non repetitive pulse *2 See Switching charactaristics measurement circuits

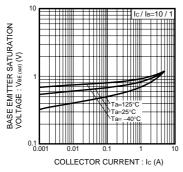


Fig.7 Base-Emitter Saturation Voltage vs. Collecter Current

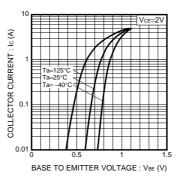


Fig.8 Grounded Emitter
Propagation Characteristics

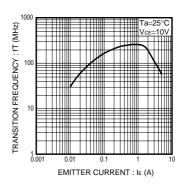


Fig.9 Transition Frequency

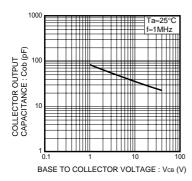
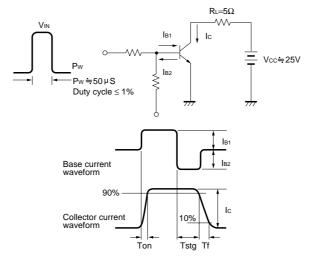


Fig.10 Collector Output Capacitance

•Switching characteristics measurement circuits



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