Power transistor (60V, 3A)

2SC5824

Features

- 1) High speed switching. (Tf: Typ.: 30ns at Ic = 3A)
- 2) Low saturation voltage, typically (Typ. : 200 mV at 1c = 2A, 1b = 200 mA)
- 3) Strong discharge power for inductive load and capacitance load.
- 4) Complements the 2SA2071.

Applications

NPN Silicon epitaxial planar transistor

●Structure

Low frequency amplifier High speed switching

Packaging specifications

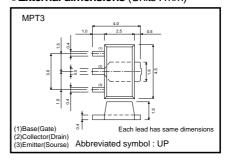
	Package	Taping
Туре	Code	T100
	Basic ordering unit (pieces)	1000
2SC5824		0

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit	
Collector-base voltage	Vсво	60	V	
Collector-emitter voltage	Vceo	60	V	
Emitter-base voltage	Vево	6	V	
Collector current	Ic	3	А	
Collector current	Іср	6	A *1	
Power dissipation	Pc	500	mW *2	
rower dissipation	Pc	2.0	W *3	
Junction temperature	Tj	150	°C	
Range of storage temperature	Tstg	-55~+150	°C	

^{*1} Pw=100ms

●External dimensions (Units: mm)



^{*2} Each terminal mounted on a recommended land.

^{*3} Mounted on a 40x40x0.7(mm) ceramic substrate

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions
Collector-base breakdown voltage	ВУсво	60	_	_	V	Ic=100μA
Collector-emitter breakdown voltage	BVceo	60	-	_	V	Ic=1mA
Emitter-base breakdown voltage	ВУево	6	-	_	V	Iε=100μA
Collector cut-off current	Ісво	_	-	1.0	μΑ	Vcb=40V
Emitter cut-off current	ІЕВО	-	-	1.0	μА	V _{EB} =4V
Collector-emitter staturation voltage	VCE(sat)	_	200	500	mV	Ic=2A, Iв=200mA *1
DC current gain	hfe	120	-	390	-	Vce=2V, Ic=100mA
Transition frequency	fT	-	200	_	MHz	VcE=10V, IE= -100mA, f=10MHz *1
Collector output capacitance	Cob	-	20	_	pF	Vcb=10V, Ie=0mA, f=1MHz
Turn-on time	Ton	_	50	_	ns	Ic=3A,
Storage time	Tstg	_	150	_	ns	Ів1=300mA Ів2= –300mA
Fall time	Tf	_	30	_	ns	Vcc≒25V *2

^{*1} Non repetitive pulse

●hFE RANK

Q	R		
120-270	180-390		

•Electrical characteristic curves

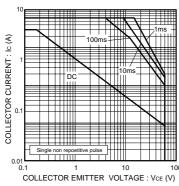


Fig.1 Safe operating area

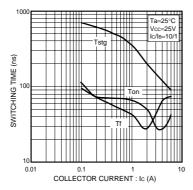


Fig.2 Switching Time

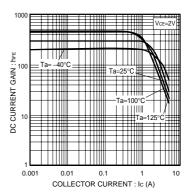


Fig.3 DC current gain vs. collector

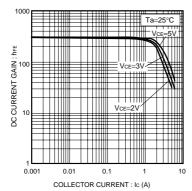
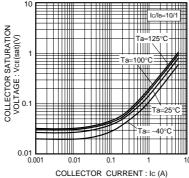


Fig.4 DC current gain vs. collector current



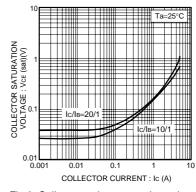


Fig.5 Collector-emitter saturation voltage Fig.6 Collector-emitter saturation voltage vs. Collector Current vs. collector current

^{*2} See switching charactaristics measurement circuits

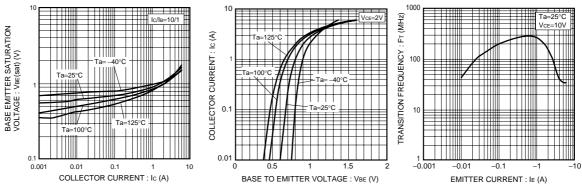


Fig.7 Base-emitter saturation voltage vs. collector current

Fig.8 Ground emitter propagation characteristics

Fig.9 Transition frequency

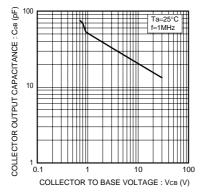
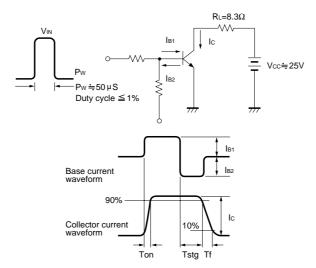


Fig.10 Collector output capacitance

•Switching characteristics measurement circuits



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