High-voltage Switching Transistor (-400V, -2A)

2SA1862

Features

- 1) High breakdown voltage. (BVCEO = -400V)
- 2) Low saturation voltage.
- (Typ. VCE (sat) = -0.3V at Ic / IB = -500mA / -100mA)
- 3) High switching speed, typically $f = 0.4 \mu s$ at Ic = -1A.
- 4) Wide SOA (safe operating area).

•Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit		
Collector-base voltage	Vсво	-400	V		
Collector-emitter voltage	VCEO	-400	V		
Emitter-base voltage	Vebo	-7	V		
Collector current	lc	-2	A (DC)		
	IC	-4	A (Pulse)		
	Pc	1	W		
Collector power dissipation	PC	10	W (Tc=25°C)		
Junction temperature	Тj	150	°C		
Storage temperature	Tstg	-55 to +150	°C		

* Single pulse, Pw=10ms

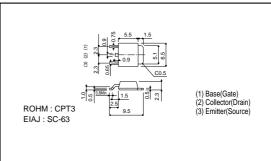
Packaging specifications and hre

Туре	2SA1862
Package	CPT3
hfe	Р
Code	TL
Basic ordering unit (pieces)	2500

•Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions
Collector-base breakdown voltage	ВУсво	-400	-	-	V	Ic=-50μA
Collector-emitter breakdown voltage	BVCEO	-400	-	-	V	Ic=-1mA
Emitter-base breakdown voltage	ВVево	-7	-	-	V	Iε=-50μA
Collector cutoff current	Ісво	-	-	-10	μΑ	Vcb=-400V
Emitter cutoff current	Іево	-	-	-10	μΑ	VEB=-5V
Collector-emitter saturation voltage	VCE(sat)	-	-0.3	-0.5	V	Ic/IB=-0.5A/-0.1A
Base-emitter saturation voltage	VCE(sat)	-	-	-1.2	V	Ic/IB=-0.5A/-0.1A
DC current transfer ratio	hfe	82	-	180	-	Vce=-5V, Ic=-0.1A
Transition frequency	fт	-	18	-	MHz	Vcb=-10V, IE=0.1A, f=5MHz
Output capacitance	Cob	-	30	-	pF	Vce=-10V, Ie=0A, f=1MHz
Turn-on time	ton	-	0.2	-	μs	Ic=-1A, RL=150Ω
Storage time	tstg	-	1.8	-	μs	IB1=-IB2=-0.2A
Fall time	tf	-	0.4	-	μs	Vcc ≃ −150V

•External dimensions (Unit : mm)



Transistors

Electrical characteristic curves

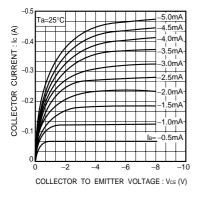


Fig.1 Ground emitter output characteristics

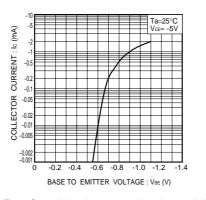
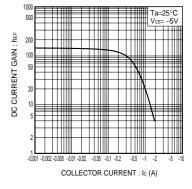
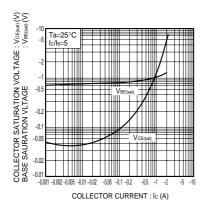
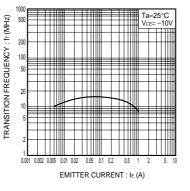


Fig.2 Grounded emitter propagation characteristics











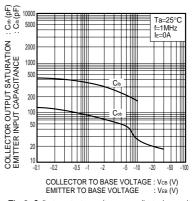
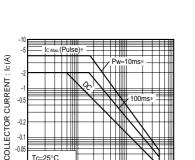


Fig.6 Collector output capacitance vs. collector-bass voltage Emitter input capacitance vs. emitter-base voltage



COLLECTOR TO EMITTER VOLTAGE : VCE (V)

Fig.7 Safe operating area

collector current

-5 -10 -20 -50 -10

=25°C

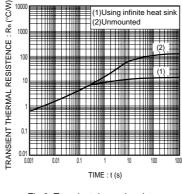
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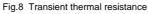
-0.

-0. -0.

-0.0

-0.0 -0.01 collector current Base-emitter saturation voltage vs.





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