Power Transistor (−80V, −4A)

2SA1635

●Features
1) Low $V_{CE(sat)}$. (Typ. −0.3V at I_C/I_B=−2/−0.2A)
2) Excellent DC current gain characteristics.
3) P_C =30W (T_C=25℃)
4) Wide SOA (safe operating area).
5) Complements the 2SC4008.

●Packaging specifications and h_{FE}

Type	2SA1635
Package	TO-220FP
h_{FE}	E
Code	—
Basic ordering unit (pieces)	500

●Absolute maximum ratings (Ta=25℃)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	−80	V
Collector-emitter voltage	V_{CEO}	−80	V
Emitter-base voltage	V_{EBO}	−5	V
Collector current	I_C	−4	A
		−6	A (Pulse)
Collector power dissipation	P_C	30	W (T_C=25℃)
Junction temperature	Tj	150	℃
Storage temperature	Tstg	−55~150	℃

●Electrical characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	−80	—	—	V	I_C=−1mA
Collector-emitter breakdown voltage	BV_{CEO}	−80	—	—	V	I_C=−50 μA
Emitter-base breakdown voltage	BV_{EBO}	−5	—	—	V	I_E=−50 μA
Collector cutoff current	I_{CBO}	—	—	−10	μA	V_{CB}=−80V
Emitter cutoff current	I_{EBO}	—	—	−10	μA	V_{EB}=−4V
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	−1.5	V	I_C/I_B=−2A/−0.2A
Base-emitter saturation voltage	$V_{BE(sat)}$	—	—	−1.5	V	I_C/I_B=−2A/−0.2A
DC current transfer ratio	h_{FE}	100	—	200	—	V_{CE}/I_C=−4V/−1A
Transition frequency	fT	—	12	—	MHz	V_{CE}=−12V, I_E=0.5A
Output capacitance	Cob	—	80	—	pF	V_{CB}=−10V, I_E=0A, f=1MHz

(90-173-B97)

Power Transistor (80V, 4A)

2SC4008

●Features
1) Low $V_{CE(sat)}$. (Typ. 0.3V at I_C/I_B=2/0.2A)
2) Excellent DC current gain characteristics.
3) P_C =30W (T_C=25℃)
4) Wide SOA (safe operating area).
5) Complements the 2SA1635.

●Packaging specifications and hFE

Type	2SC4008
Package	TO-220FP
h_{FE}	EFG
Code	—
Basic ordering unit (pieces)	500

●Absolute maximum ratings (Ta=25℃)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	100	V
Collector-emitter voltage	V_{CEO}	80	V
Emitter-base voltage	V_{EBO}	6	V
Collector current	I_C	4	A (DC)
		6	A (Pulse) *
Collector power dissipation	P_C	2	W
		30	W (T_C=25℃)
Junction temperature	Tj	150	℃
Storage temperature	Tstg	−55~150	℃

* Sigle pulse Pw=100ms

●Electrical characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	100	—	—	V	I_C=50 μA
Collector-emitter breakdown voltage	BV_{CEO}	80	—	—	V	I_C=25mA
Emitter-base breakdown voltage	BV_{EBO}	6	—	—	V	I_E=50 μA
Collector cutoff current	I_{CBO}	—	—	10	μA	V_{CB}=100V
Emitter cutoff current	I_{EBO}	—	—	10	μA	V_{EB}=6V
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	1	V	I_C/I_B=2A/0.2A *
Base-emitter saturation voltage	$V_{BE(sat)}$	—	—	1.5	V	I_C/I_B=2A/0.2A *
DC current transfer ratio	h_{FE}	100	—	500	—	V_{CE}/I_C=4V/1A
Transition frequency	fT	—	10	—	MHz	V_{CE}=12V, I_E=−0.2A, f=5MHz *
Output capacitance	Cob	—	60	—	pF	V_{CB}=10V, I_E=0A, f=1MHz

* Measured using pulse current.

(94L-646-D97)

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