Power Transistor (−80V, −4A)

2SA1635

●**Features**

1) Low saturation voltage, typically $V_{CE(sat)}$ = −0.3V at I_C / I_B = −2A / −0.2A.
2) Excellent DC current gain characteristics.
3) P_C = 30W (Tc=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 (Tc=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	f_T	—	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 saturation voltage, typically $V_{CE(sat)}$ = 0.3V at I_C / I_B = 2A / 0.2A.
2) Excellent DC current gain characteristics.
3) P_C = 30W (Tc=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 (Tc=25℃)
Junction temperature	Tj	150	℃
Storage temperature	Tstg	−55~+150	℃

✻ Single 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	f_T	—	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)