

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) $P_C = 30W$ ($T_C = 25^\circ C$)
- 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 ($T_a = 25^\circ C$)

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 ($T_C = 25^\circ C$)
Junction temperature	T_J	150	$^\circ C$
Storage temperature	T_{stg}	−55~150	$^\circ C$

●Electrical characteristics ($T_a = 25^\circ C$)

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	$I_C = -50 \mu A$
Emitter-base breakdown voltage	BV_{EBO}	−5	—	—	V	$I_E = -50 \mu A$
Collector cutoff current	I_{CBO}	—	—	−10	μA	$V_{CE} = -80V$
Emitter cutoff current	I_{EBO}	—	—	−10	μA	$V_{EB} = -4V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	−1.6	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	C_{ob}	—	80	—	pF	$V_{CE} = -10V, I_E = 0A, f = 1MHz$

(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) $P_C = 30W$ ($T_C = 25^\circ C$)
- 4) Wide SOA (safe operating area).
- 5) Complements the 2SA1635.

●Packaging specifications and h_{FE}

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

●Absolute maximum ratings ($T_a = 25^\circ C$)

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 ($T_C = 25^\circ C$)
Junction temperature	T_J	150	$^\circ C$
Storage temperature	T_{stg}	−55~150	$^\circ C$

* Single pulse $P_W = 100ms$ ●Electrical characteristics ($T_a = 25^\circ C$)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	100	—	—	V	$I_C = 50 \mu A$
Collector-emitter breakdown voltage	BV_{CEO}	80	—	—	V	$I_C = 25mA$
Emitter-base breakdown voltage	BV_{EBO}	6	—	—	V	$I_E = 50 \mu A$
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	C_{ob}	—	60	—	pF	$V_{CB} = 10V, I_E = 0A, f = 1MHz$

* Measured using pulse current.

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